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Supplementary materials

Table S1. Combinations of gambling activities for analysis

Individual Gambling Activity	Grouped gambling activity category
Online Horse race betting	Online horse race betting
Online sports betting	Online sports betting
Online betting on esports	Online sports betting
Online betting on virtual sports	Online sports betting
Online poker	Online casino/Poker
Online casino games	Online casino/Poker
Online slots	Online slots
Online bingo	Online bingo
Horse race betting in person	Horse race betting in person
Sports betting in person	Sports betting in person
Betting on esports in person	Sports betting in person
Betting on virtual sports in person	Sports betting in person
Table games at a casino	Casino in person
Poker at a club	Casino in person
Slot/Fruit machines	Slots in person
Machines at a bookmakers	Slots in person
Bingo at a hall/club	Bingo in person
Lotteries	Lotteries
Scratchcards	Scratchcards
Football pools	Football pools

Choice of LCA results:

To determine the optimum LCA solution we examined model fit statistics and theoretical interpretability. Regarding model fit statistics, lower Bayesian information criterion (BIC) and the Akaike information criteria (AIC) suggest better model fit (Nylund, Asparouhov, & Muthén, 2007). Other fit statistics can be used, such as the bootstrap likelihood ratio test (BLRT; McLachlan & Peel, 2000) which tests whether the more complex model (e.g., 5-class) fits the data significantly better than the simpler model (e.g., 4-class). A further test statistic is entropy, which indicates how accurately the model defines the classes; a value closer to 1 suggests better class separation, and anything above 0.8 is considered good (Muthén & Muthén, 2007). To further determine whether individuals had been assigned into the best fitting class, the average latent class posterior probability (i.e., the average probability of the class model accurately predicting class membership) can also be assessed (B. Muthén & Muthén, 2000). Latent probabilities are displayed in a matrix with diagonals representing the average probability of a person being assigned to a class given his or her scores on the indicator variables, and higher diagonal values (i.e., closer to 1.0) are desirable. Finally, the number or percentage of the sample assigned to each group can be assessed, with a group less than 5% suggested to be too low, although more recent literature suggests that if the group has a theoretical basis then there is no issue (Weller et al., 2020).

Fit statistics for the 2-class up to the 6-class model are shown in Figure S1. The BICs and AICs for the models decrease as the number of classes increased and tapered around the 4 to 5 class model. Further, across the models the bootstrap likelihood ratio test (BLRT) found that the more complex model was a significantly better fit than the simpler. The 6-class model was rejected as too many groups had less than 5% of the sample and it made less theoretical sense. On comparing the 4 and 5-class solutions (see Table S2), the classes within both had an average latent class posterior probability above 0.8, although both included some small groups (~5%), and the 5-class solution included a group with around 4% of the sample. The 5-class solution had an entropy that was above 0.8, whereas the 4-class solution was 0.76. As the fit statistics gave a relatively unclear indication to which model had the best fit, the solutions were assessed for theoretical interpretation, and consensus agreed that the 5-class solution was a better reflection of the data and gambling behaviours.

Figure S1. Plotting the Bayesian information criterion (BIC) and the Akaike information criteria (AIC) to include model fit.

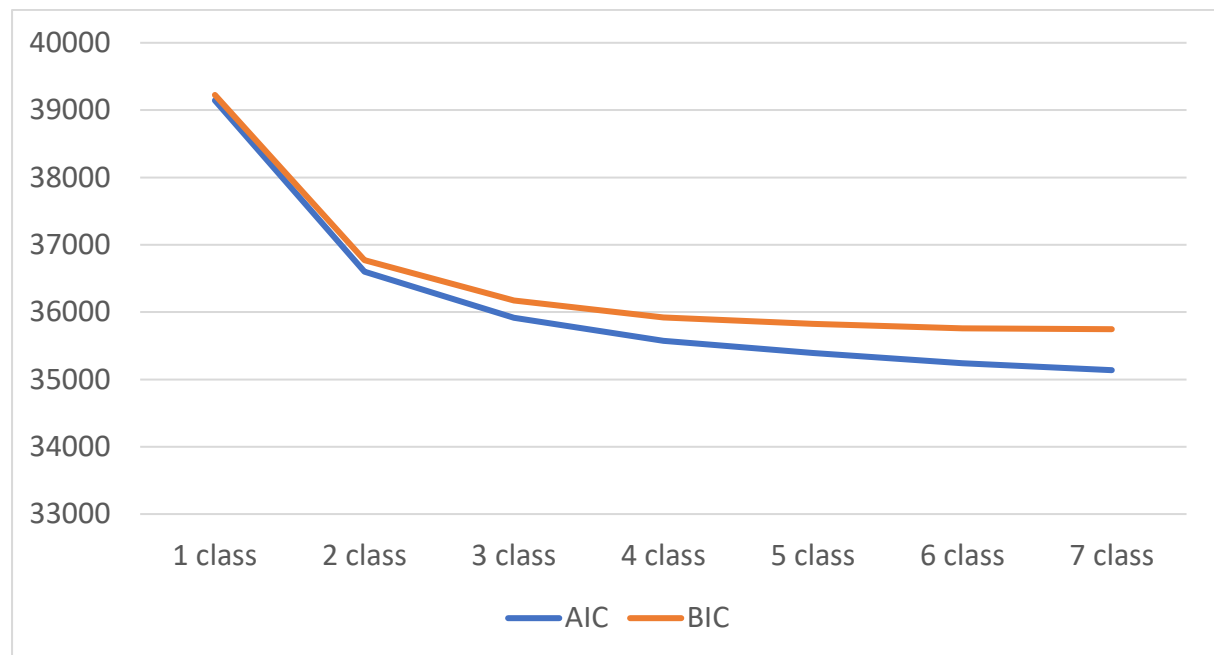


Table S2. Comparison of the 4- and 5-class solution on the average latent class posterior probability and size of each class.

	4-class solution		5-class solution	
	Latent class probability	Group size, n (%)	Latent class probability	Group size, n (%)
Class 1	0.883	2641 (67.3)	0.876	548 (14.0)
Class 2	0.914	224 (5.7)	0.809	2756 (70.2)
Class 3	0.883	802 (20.4)	0.900	153 (3.9)
Class 4	0.805	260 (6.6)	0.899	272 (6.9)
Class 5	-	-	0.851	198 (5.0)

Table S3: Adjusted binary logistic regression analyses using latent classes to predict suicidal ideation and suicide attempt at wave 2 (n=3093) with different reference groups.

	Wave 2: Odds Ratios of Suicide Attempts [95% CI]	
	Unadjusted	Adjusted
Class 1 reference		
Class 2	1.04 [0.12-8.56]	0.80 [0.11-6.12]
Class 3	-	-
Class 4	2.83 [0.29-27.66]	0.89 [0.06-12.89]
Class 5	93.23 [12.06-720.48]***	18.78 [2.03-173.53]*
Class 2 reference		
Class 3	-	-
Class 4	2.73 [0.68-11]	1.11 [0.16-7.53]
Class 5	89.99 [34.35-235.76]***	23.36 [8.25-66.09]***
Class 3 reference		
Class 4	-	-
Class 5	-	-
Class 4 reference		
Class 5	32.91 [9.08-119.2]***	21.00 [3.93-112.16]***

*Analyses adjusted for: wave 1 suicidal ideation or suicide attempt (dependent on outcome), Sex, Age, Ethnicity, Social status, Marital status, Health problems, AUDIT for problem drinking, Employment status, PGSI for problem gambling. * p <0.05, ** p<0.01, ***p<0.001

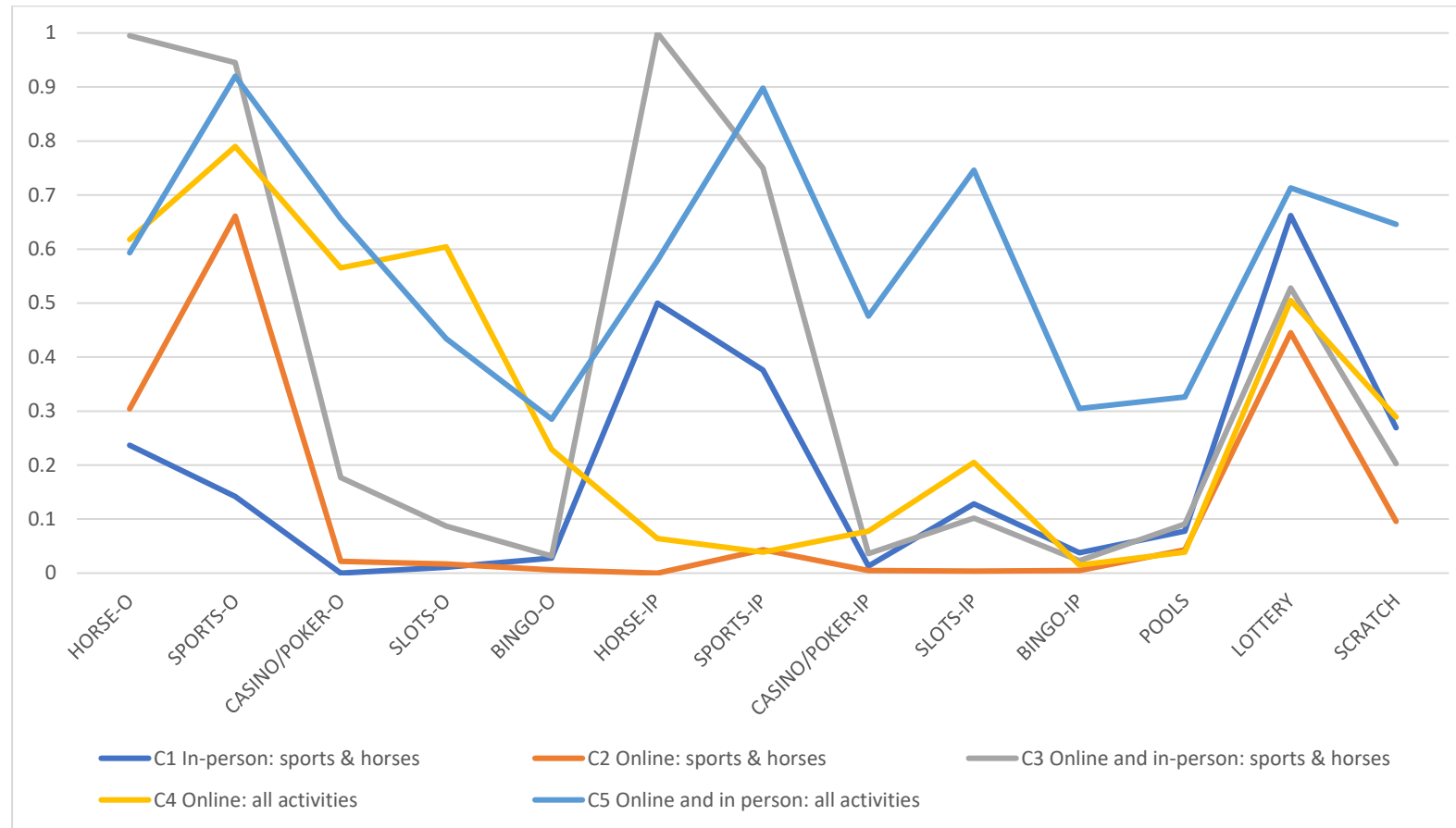
Class 3 omitted from suicidal attempts analysis as there were no observations.

Table S4. Binary logistic regression using latent classes to predict suicidal ideation and suicide attempt at wave 2 (n=3093)

	Wave 2 OR [95% CI]	
	Suicidal ideation	Suicide attempt
Class 1 ^a	1	
Class 2	1.697 [0.904-3.185]	0.804 [0.106-6.115]
Class 3	0.788 [0.252-2.466]	-
Class 4	1.04 [0.456-2.374]	0.895 [0.062-12.891]
Class 5	3.558 [1.168-10.840]*	18.784 [2.033-173.534]*
Wave 1 Suicidal Ideation or attempt ^b	27.305 [17.898-41.657]***	10.295 [3.939-26.908]***
Sex ^c	0.626 [0.382-1.027]	0.334 [0.134-0.832]*
Age: 18-34 yrs ^d	2.615 [1.338- 5.108]**	4.821 [0.755-30.764]
Age: 35-54 yrs	2.007 [1.142-3.525]*	8.529 [1.614-45.087]*
Ethnicity ^e	1.437 [0.359-5.755]	0.376 [0.097-1.456]
Social grade ^f	1.344 [0.796-2.269]	5.063 [1.084-23.657]*
Marital status ^g	0.835 [0.553-1.261]	0.581 [0.203-1.666]
Health problem ^h	0.332 [0.214-0.516]***	0.147 [0.050-0.431]***
Alcohol use ⁱ	1.088 [0.703-1.683]	0.963 [0.326-2.847]
Employed ^k	0.67 [0.340-1.321]	1.189 [0.198-7.147]
Retired	0.913 [0.328-2.546]	9.419 [1.110-79.910]*
Moderate/high risk gambler ^l	0.864 [0.509-1.465]	2.37 [0.717-7.839]

Reference group: ^a Class 1, ^b No suicidal ideation/attempt, ^c Female, ^d 55+ yrs, ^e Asian or Black or Other, ^f Lower (C2-E), ^g Not married/co-habiting, ^h Has health problems, ⁱ AUDIT lower risk drinking, ^k Unemployed/Sick, ^l Non problem/low risk gambler.
– No OR generated as no cases.

Figure S2. Estimated probability of individuals in each class taking part in the gambling activities at least once a fortnight



Note: HORSE-O = horses online, SPORTS-O = sports online, CASINO/POKER-O = casino games or poker online, SLOTS-O = slots online, BINGO-O = bingo online, HORSE-IP = horses in-person, SPORTS-IP = sports in-person, CASINO/POKER-IP = casino or poker in-person, SLOTS-IP = slots in-person, BINGO-IP = bingo in-person, POOLS = football pools, LOTTERY = national lottery, SCRATCH = scratch cards.