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Young People and Gambling Content in Social Media: An Experimental Insight

Short Title: Experimental insight on gambling content in social media

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Young People and Gambling Content in Social Media: An Experimental Insight

Abstract

Introduction and aims. Online gambling advertising and user-generated gambling content have increased. This study used a social psychological online experiment to analyse young people's reactions towards and self-reported interests in social media gambling messages. **Design and Methods.** A vignette experiment with a two-level between-subjects factor (group condition or control condition) and three two-level within-subjects factors (expressed stance on gambling, narrative perspective, and majority opinion) was conducted with two samples of young Finnish people aged 15 to 25 (N=1200, 50% female, mean age 21.29 years) and 15 to 30 (N=230, 53% female, mean age 24.35 years). Participants were asked to indicate how they would react to presented gambling messages (i.e., like or dislike the content) and how interesting would the content appear to them. In addition to experimental factors, the Attitudes Towards Gambling Scale and a global self-esteem measure were used as the independent variables. A statistical analysis included multilevel linear and logistic regressions. **Results.** Young people preferred anti-gambling messages instead of pro-gambling messages. This effect was moderated by personal gambling attitudes as participants with positive gambling attitudes preferred pro-gambling content. Fact-driven messages were favoured over experience-driven messages. Positive majority opinions predicted more favourable reactions and positive interest. **Discussion and Conclusions.** Young people prefer anti-gambling content and factual argumentation but their online behaviour is also influenced by perceived group norms. The potential risks of online gambling promotion mainly concern young people already interested in gambling.

Keywords: gambling, online gambling, young people, risk factors, social media, survey experiment

Introduction

The number and use of online gambling sites have increased over the last few years [1]. This upsurge creates potential risks for youth gambling [1–4]. Online-based gambling technologies allow for young and underage individuals to access various gambling activities, which might promote positive gambling attitudes [3–6]. In Finland, gambling attitudes are negative among young women aged 15 to 24 [7]. Male attitudes towards gambling are positive, except among boys aged 15 to 17.

Together with online gambling platforms, social media provides an efficient context for the dissemination of gambling content, including marketing and promotion activities of gambling operators [8–10]. According to the Finnish Lotteries Act (1047/2001), only the state-owned monopoly is allowed to offer and market gambling services in Finnish mainland [11]. Any direct or indirect marketing or other promotional activities (including social media content) must be responsible and not target children under 18 years old. Gambling promotion in social media is not spread solely by gambling operators. Users can easily generate and share comments, posts, and links on gambling and network with other gamblers [12]. All this can contribute to the normalization of gambling behaviour among social media users. However, people tend to be more critical towards gambling promotion than gambling itself [13, 14].

In social media, users have far-reaching possibilities to evaluate and interact with shared content. Most social media platforms offer users simple ways to comment and evaluate shared content (e.g.,

like or dislike options) [15]. Even though these reactions are often simple (binary) by nature, they significantly shape user behaviour, information flow, and consumption on online platforms [15–17].

Collective social media reactions tend to reflect and reinforce widely held social norms, while norm challenging content generates, sometimes fierce, opposition and criticism [18, 19]. The selective nature of social media allows those users with marginalized interests to search for information that fits their personal attitudes and network with similar-minded individuals [20, 21]. For example, users highly interested in gambling may seek for online content and communities that validate and promote gambling behaviour [22].

The most distinct features of social media are user-generated content and peer-network distribution [21]. Young online users in particular value online peer groups and shared peer experiences, even over fact-based information [23, 24]. Even misleading experience-based health information can be more popular than official health communication [24]. Social media has also become a significant source of peer influence. Conforming to others' behaviours and evaluations is a basic human tendency [25–27], and it may be especially salient in the case of computer-mediated communication and when coming from a group of similar-minded individuals [28, 29]. The tendency to rely on group norms is dependent on personal characteristics such as self-esteem. Individuals with high global self-esteem tend to perceive groups they belong to (even loosely) more positively and thus show more group bias in their behaviours compared to low self-esteemed individuals [30, 31].

This study reports an online experiment that simulated online social interactions to examine how participants (aged 15-25 and 15-30) react to gambling-content in social media. The study is grounded on the social psychological tradition of group experiments and recent research on online communities [32–33]. Not much is known about how young people react to gambling content in real-life social media situations or how online group behaviour and content characteristics shape these reactions. The study set the following hypotheses:

H1 (negative orientation hypothesis): Content with a negative orientation towards gambling will be more popular among participants than content with a positive stance.

H2 (gambling attitude hypothesis): Content with a positive stance on gambling will be more popular among those participants with positive attitudes towards gambling.

H3 (experience over fact hypothesis): Experience-driven content will be more popular among participants than fact-driven content.

H4 (social conformity hypothesis): Participants will conform to others' positively or negatively biased reactions on online gambling content.

H5 (in-group norm hypothesis): Explicit group membership will enhance participants' conformity with others' reactions.

H6 (self-esteem hypothesis): Participants with high global self-esteem will be more likely to show in-group bias and thus follow perceived group norms.

The hypotheses of this paper were registered to the Open Science Framework prior to data collection (<https://osf.io/m72hz/>).

Methods

Study design

This study used an experimental approach to examine how young people react to gambling content on social media. The chosen approach included both an online survey and an online vignette experiment to which respondents answered using their own computers or mobile devices. In the beginning of the study, participants answered survey questions regarding their socio-demographic background and general questions about their social media use.

After the initial questions, respondents were assigned to a vignette experiment. The experiment was designed to imitate a social media context in style and format (i.e., visuality and functionalities of this section were designed to resemble characteristics of YouTube interface). In the experiment, short manipulated messages served as gambling content shared on social media. Prior to the experiment, the respondents were randomly assigned to group condition and control condition. Those in the group condition were told they belong to “Group C”, with others who had answered the earlier questions in a similar manner. Those in the control condition were given no group information.

The respondents were shown four different gambling messages. We manipulated the expressed stance on gambling and the narrative perspective of the messages, as well as positively or negatively biased reactions “from other users” (likes/thumbs up and dislikes/thumbs down) that were presented for each message. Hence, the design included one two-level between-subjects factor (group condition or control condition) and three two-level within-subjects factors (expressed stance on gambling, narrative perspective, and majority opinion), resulting in a 2 x 2 x 2 within-subjects factorial design. This design allowed us to estimate all direct and two-way interaction effects of our manipulated factors (see [34]).

The expressed stance on gambling factor was manipulated so that half of the messages expressed a pro-gambling stance (i.e., discussed gambling positively) and the other half had an anti-gambling stance (i.e., discussed gambling negatively). Narrative manipulation involved experience-driven first-person narration in half of the messages and fact-driven third-person narration in the other half. We manipulated the majority opinion factor by showing a positively or negatively biased distribution of likes (thumbs up) and dislikes (thumbs down) for the message, seemingly provided by other “Group C” members (group condition) or other respondents (control condition). In half of the messages, the majority (about 85%) had liked the content. In the other half, the majority had disliked the content. The distribution of minority opinion was about 13%, and for those who had not stated an opinion (no reaction), the corresponding value was about 2%. The exact manipulations of the within-subjects factors are presented in Table 1.

After the online experiment participants answered the rest of the survey. The remaining questions included measures for online activities, online risks, and addictive behaviours. The median survey response time was 15 minutes and 30 seconds in Study 1 and 17 minutes and 42 seconds in Study 2. The online experiment part took, on average, 4 minutes and 15 seconds (27.5% out of the entire survey) in Sample 1 and 4 minutes and 43 seconds (26.7% out of the entire survey) in Sample 2. The study was approved by the local academic ethics committee in December 2016. All participants agreed to voluntarily take part in an online survey on gambling.

Participants

We used two samples to cross-validate our experimental analyses. Sample 1 consisted of 1200 participants aged 15 to 25 (50.0% female, mean age [M]=21.29, standard deviation [SD]=2.85) who were recruited from a pool of volunteer respondents administrated by Survey Sampling International in March–April 2017. This demographically balanced sample matches individuals aged 15 to 25 in the Finnish population in terms of age, gender, and living area [22, 35].

Sample 2 was a convenience sample of 230 participants aged 15 to 30 (53% female, mean age [M]=24.35, SD=3.63) who were recruited from Finnish discussion forums and social networking sites in April–June 2017. The recruitment was done by posting messages to these online platforms. The messages briefly described the aims of our study and then invited users to participate in the online survey. The messages also stated that movie tickets will be drawn among study participants. The selected online platforms were among the most popular for this age group in Finland. Participants were invited to participate through a short invitation with a survey link on a message board. The invitations were activated on a regular basis during the data collection period to ensure their visibility.

Measures

After each experimental message, the respondents were asked how they would react to the message in a real social media situation (i.e., like/thumbs up, dislike/thumbs down, or no reaction). Moreover, the respondents were presented with six additional items asking how interesting would the content appear to them, for instance, “How likely would you find the message interesting?” or “How likely would you share the link in social media?” The answer options had a scale of 1 (*not at all likely*) to 10 (*very likely*). These six questions were summed up in a composite variable (with a scale from 6 to 60) measuring *positive interest* in the presented message.

Self-esteem. The Single-Item Self-Esteem (SISE) scale was used to measure a participant’s level of self-esteem. The item states, “I have high self-esteem”, with a scale from 1 to 10. The mean was 5.99 (SD=2.37) in Sample 1 and 5.33 (SD=2.42) in Sample 2. The SISE scale has been found to be a reliable and valid way of measuring global self-esteem [36].

Attitudes Towards Gambling Scale (ATGS-8), a widely used measure in studies concerning gambling, comprises eight questions in total [7, 37]. The alpha reliability of the ATGS-8 was acceptable ($\alpha=.75$ for Sample 1 and $\alpha=.84$ for Sample 2), and the scale ranged from 8 to 39 (M=23.41, SD=5.09) in Sample 1 and from 9 to 40 (M=24.00, SD=6.23) in Sample 2. Higher scores indicated positive gambling attitudes.

The order of presented messages and the respondents’ age and gender were used as covariates in our analyses. Descriptive measures of our study variables are presented in Table 2.

Analyses

Our statistical approach was based on multilevel random coefficient regression modelling because our data included repeated measures nested within individuals, and our hypotheses concerned both within-subjects-level (manipulated experimental factors) and between-subjects-level (self-esteem, gambling attitudes, age, and gender) associations. The models used log-likelihood estimation and were estimated as linear for continuous dependent variables (interest in online messages) and as

logistic for dichotomous dependent variables (likes and dislikes in message scenarios). For our linear models, we estimated robust (Huber–White) standard errors. In the models, we estimated fixed and random intercepts and fixed and random slopes for our experimental factors. We used Stata statistical software (version 15.1) in our statistical modelling.

Our analyses were conducted in three steps. The first step (models not reported in tables) included only a random intercept with no predictors to estimate intraclass correlation coefficient (ICC). The intraclass correlation coefficients for our models varied between .35 and .68. In the second step, we included both our within-subjects-level predictors (majority opinion, expressed stance on gambling, narrative perspective, and the order of presented messages) and between-subjects-level predictors (self-esteem, gambling attitudes, age, and gender). In the third model, we added the cross-level interactions between majority opinion and self-esteem, as well as expressed stance on gambling and gambling attitudes.

All the models were conducted separately for the respondents in the group condition and in the control condition. The hypothesized difference between these experimental conditions in the majority opinion effect was tested by comparing the estimates' 95% confidence intervals. Our analytical models were cross-validated using a demographically balanced data set (Sample 1) and an independent convenience sample recruited via social media (Sample 2). This allowed us to test whether the findings from the demographically balanced data can be replicated with an independent convenience sample consisting of young social media users. Both sample sizes can be considered as sufficient for multilevel modelling [38].

Our sequential analyses are reported in Tables 3 to 5. In each model's case, we reported regression coefficients and their 95% confidence intervals, statistical significance, and -2 log-likelihood estimate.

Results

Likes

In Sample 1, seeing positive majority reactions increased the probability of likes in both the group condition ($B=1.16, P<0.001$) and the control condition ($B=0.96, P<0.001$) (see Sample 1, Table 3). The effect of positive majority reactions was stronger in the group condition, but the difference lay within the 95% confidence intervals (95% CI=[0.91, 1.40] for group condition and [0.67, 1.25] for control condition). A pro-stance on gambling predicted a smaller likelihood of likes in the group-identity condition ($B=-0.96, P<0.001$) and in the control condition ($B=-1.69, P<0.001$). Experience-driven narration was not associated with likes either in the group-identity condition or the control condition.

In Sample 2, positive majority ($B=0.93, P=0.006$) and pro-stance on gambling ($B=-2.29, P=0.004$) had effects on likes in the sample's group condition (see Sample 2, Table 3). In the control condition, neither of these two factors were significantly related to likes. The observed difference in the positive majority effect lay within the 95% confidence intervals (95% CI [0.27, 1.59] for group condition and [-0.61, 2.75] for control condition). Experience-driven narration did not affect likes in the group condition or the control condition in Sample 2.

The cross-level interaction term for gambling attitudes and pro-gambling stance was significant for both the group ($B=0.18, P<0.001$) and control ($B=0.26, P<0.001$) conditions in Sample 1 (see Sample

1, Table 3). This moderation effect means that pro-gambling messages were, in general, liked less than anti-gambling messages. However, those respondents with highly positive gambling attitudes liked pro-gambling messages more. In Sample 2, this effect was significant and of similar direction in the group condition ($B=0.27, P<0.001$) but failed to reach statistical significance in the control condition ($B=0.43, P=0.081$) (see Sample 2, Table 3). The interaction term between self-esteem and positive majority was not significant in either experimental condition in Sample 1 or Sample 2.

Dislikes

In both of the Sample 1 experimental conditions, a positive majority predicted less probable dislikes ($B=-1.09, P<0.001$ in the group condition and $B=-0.95, P<0.001$ in the control condition). The negative effect was stronger in the group condition, but the difference lay within the 95% confidence intervals (95% CI= $[-1.43, -0.75]$ for group condition and $[-1.21, -0.69]$ for control condition). Experience-driven content gathered more dislikes than fact-driven content in the group condition ($B = 0.26, P = 0.024$) and in the control condition ($B = 0.24, P = 0.049$). A pro-gambling stance predicted a higher likelihood of dislikes but only in the control condition ($B=0.37, P=0.020$).

In Sample 2, only positive majority had a significant effect on dislikes ($B=-0.70, P=0.032$ in the group condition and $B=-1.63, P=0.007$ in the control condition) (see Sample 2, Table 4). Here again, the difference in the positive majority effect between the experimental conditions lay within the 95% confidence intervals (95% CI= $[-1.34, -0.06]$ for group condition and $[-2.82, -0.45]$ for control condition). Stance on gambling or narrative perspective did not have an effect on dislikes in any of the experimental conditions.

In Sample 1, the interaction term between gambling attitudes and the gambling stance of a message was a significant predictor of dislike behaviour in both the group condition ($B=-0.21, P<0.001$) and the control condition ($B=-0.22, P<0.001$) (see Sample 1, Table 4). According to this moderation effect, respondents with positive gambling attitudes were less likely to dislike pro-gambling messages than other respondents. In Sample 2, this moderation was significant in the group condition ($B=-0.22, P=0.005$) but not in the control condition (see Sample 2, Table 4). The interaction term between self-esteem and positive majority was not significant in any of the samples or experimental conditions.

Self-reported interest

In Sample 1, positive majority had a positive effect on self-reported interest in the group condition ($B=1.07, P<0.001$) and in the control condition ($B=0.72, P=0.001$) (see Sample 1, Table 5). The majority effect was stronger in the group condition, but the difference lay within the 95% confidence intervals (95% CI= $[0.61, 1.54]$ for group condition and $[0.28, 1.16]$ for control condition). Pro-gambling messages raised less interest compared to anti-gambling messages in the group condition ($B=-2.46, P<0.001$) and in the control condition ($B=-2.78, P<0.001$). Similarly, experience-driven messages received less interest compared to fact-driven messages in both conditions ($B=-0.92, P<0.001$ in the group condition and $B=-0.55, P=0.011$ in the control condition).

In Sample 2, pro-gambling stance had a negative effect on self-reported positive interest in both the group condition ($B=-3.28, P=0.003$) and the control condition ($B=-3.70, P<0.001$) (see Sample 2, Table 5). Experience-driven messages induced less interest in the group condition ($B=-1.50, P=0.004$) but not in the control condition ($B=-0.16, P=0.740$). The positive majority factor did not have a significant effect in either of the Sample 2 experimental conditions.

The interaction term between gambling attitudes and a message's pro-gambling stance significantly predicted positive interest in the Sample 1 group condition ($B=0.31$, $P<0.001$) and the control condition ($B=0.41$, $P<0.001$) (see Sample 1, Table 5). meaning that respondents with highly positive gambling attitudes reported more positive interest in pro-gambling messages. This interaction was also found in the Sample 2 group condition ($B=0.88$, $P<0.001$) and control condition ($B=0.48$, $P=0.001$) (see Sample 2, Table 5). Here again, the interaction effect between self-esteem was not significant across our samples and experimental conditions.

Discussion

In this study, we used an experimental approach to examine how young people react to gambling-content in social media. Our analysis concerned both binary reactions (likes and dislikes) and self-reported positive interest in the messages (e.g., willingness to enter the content website or share the content on social media).

As hypothesized, anti-gambling content generated more favourable reactions (likes), and more self-reported positive interest than pro-gambling content. These findings indicate that young online users tend to be critical towards content that promotes gambling. These findings are in line with earlier research suggesting that attitudes towards gambling advertisement are especially critical [13, 14] and that interactions in social media tend to reflect and reinforce widely held social norms [18, 19]. However, anti-gambling messages received less negative reactions (dislikes) only in Sample 1 control condition which implies that pro-gambling content may not be directly opposed in social media.

Expressed stance on gambling messages was dependent on personal gambling attitudes. As we expected, individuals who had highly positive gambling attitudes were more likely to like and less likely to dislike pro-gambling messages and also reported higher positive interest in them. In social media, users have enhanced possibilities to interact and evaluate content and self-select which information they choose to approach [21]. Therefore, even though online users on average are critical towards pro-gambling content, this content is appealing to individuals who are already interested in gambling.

Counter to our hypothesis, fact-driven content was more popular than experience-driven content. Experience-driven content generated less self-reported interest and received more dislikes in our Sample 1 (but not in Sample 2). In the case of likes, there were no differences between fact-driven and experience-driven content. This is somewhat surprising because earlier research has stated, for example, that social media users tend to search for others' experiences and prefer peer experiences over official health communication [24]. It is possible that young people tend to rely on peer experiences from known or self-selected sources but prefer factual argumentation when the source is unfamiliar to them.

As expected, positive majority opinion predicted more likes and less dislikes. Positive majority also predicted higher self-reported positive interest in Sample 1 (but not in Sample 2). In general, our findings are in line with earlier research findings highlighting the importance of online social influence [17, 21]. However, we did not find stronger effects when social influence was coming from similar group members (see [28, 29]). In the Sample 1, the estimated majority opinion effect was stronger in general if the respondents had been primed with a group membership, but the difference did not reach statistical significance in any of our models.

It is possible that shared group memberships are not that important when it comes to basic collective evaluation such as binary like or dislike reactions. Alternatively, the result might indicate that group membership based on outsider placement is not qualitatively sufficient to provide a sense of meaningful group membership. We argue that self-selected group membership may have been more valued and would have resulted in a stronger effect in our experiment. This might also explain why we did not find individuals with higher self-esteem to show more propensity towards group influence (see [30, 31]).

Even though Finnish legislation (The Finnish Lotteries Act 1047/2001) prohibits all direct or indirect marketing or other promotional activities in social media, except those done by the state-owned gambling monopoly [11], users can still be exposed to user-generated gambling content [see e.g. 12]. According to our results, young people's reactions towards online gambling content reflect three behavioural tendencies that are prevalent in social media: *normativity*, *social influence*, and *selectivity*. Young people act normatively because reactions towards pro-gambling content are critical and, thus, in line with public attitudes towards gambling promotion [13, 14]. This implies that it can be challenging for pro-gambling content to generate wide interest among average young social media users. Collective evaluations online induce group norms that become a significant source of social influence [15–17]. In a highly favourable environment, gambling content generated more positive reactions among young people. Selectivity is manifested in the tendency of online users to prefer content that is in line with their personal attitudes [20]. This is implied by our finding that young people who already have positive gambling attitudes are also more likely to evaluate pro-gambling content positively and approach it in online platforms. Thus, user-generated pro-gambling content (even when not legally classified as promotional activities) can be damaging as it is likely to trigger and normalise gambling behaviour among those young people already interested in gambling [10].

Our experimental design was based on manipulated social media scenarios (e.g., group memberships based on placement instead of self-selection). Sample 2 was a convenience sample that poses restrictions on generalisability of the results. Sample 1 used a panel giving access nationally to younger respondents. Despite this sample was not randomly drawn from population register, it matches the population of Finnish young people aged 15 to 25. This study was also limited to young Finnish social media users and, thus, the generalisability of the findings to other age groups and national contexts should be tested in future studies. Despite these limitations, our study has major strengths. We used two independent samples to cross-validate our results. In addition, this was the first experimental study on gambling messages in social media. Hence, our study provided valuable new findings on how online behaviour may impact reactions to online gambling content among young people. Our results implied that those with pre-existing interests in gambling might be at increased risk when encountering online gambling advertising and user-generated gambling messages. Forthcoming studies should continue to investigate these mechanisms.

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Conflict of Interest

The authors have no conflicts of interest to declare.

References

1. Gainsbury S. M., Russell A, Wood R, Hing N, Blaszczynski A. How risky is Internet gambling? A comparison of subgroups of Internet gamblers based on problem gambling status. *New Media Soc* 2015; 17: 861–879.
2. Canale N., Griffiths M. D., Vieno A., Siciliano V., Molinaro S. Impact of Internet gambling on problem gambling among adolescents in Italy: Findings from a large-scale nationally representative survey. *Comput Human Behav* 2016; 57: 99–106.
3. Elton-Marshall T., Leatherdale S. T., Turner N. E. An examination of internet and land-based gambling among adolescents in three Canadian provinces: results from the youth gambling survey (YGS). *BMC Public Health* 2016; 16: 277.
4. Calado F., Alexandre J., Griffiths M. D. Prevalence of adolescent problem gambling: A systematic review of recent research. *J Gambl Stud* 2017; 33: 397–424.
5. King D., Delfabbro P., Griffiths M. The convergence of gambling and digital media: Implications for gambling in young people. *J Gambl Stud* 2010; 26: 175–187
6. Orford J. *An unsafe bet. The dangerous rise of gambling and the debate we should be having*. Chichester, UK: John Wiley & Sons; 2011.
7. Salonen A. H., Alho H., Castrén S. Attitudes towards gambling, gambling participation, and gambling-related harm: cross-sectional Finnish population studies in 2011 and 2015. *BMC Public Health* 2017; 17: 122.
8. Gainsbury S. M., Delfabbro P., King D. L., Hing, N. An Exploratory Study of Gambling Operators' Use of Social Media and the Latent Messages Conveyed. *J Gambl Stud* 2016; 32: 125–141.
9. Gainsbury S. M., King D. L., Hing N., Delfabbro P. Social media marketing and gambling: An interview study of gambling operators in Australia. *Int Gambl Stud*. 2015; 15: 377–393.

10. Gainsbury S. M., King D. L., Russell A. M. T., Delfabbro P., Derevensky J., Hing N. Exposure to and engagement with gambling marketing in social media: Reported impacts on moderate-risk and problem gamblers. *Psychol Addict Behav* 2016; 30: 270–276.
11. National Police Board. National Police Board's guidelines on the marketing of gambling services (June 2015). Available at: https://www.arpajaishallinto.fi/instancedata/prime_product_julkaisu/intermin/embeds/arpajaishallintowwwstructure/55885_Final_marketing_guidelines.pdf?14e36db0c45bd488
12. O’Leary K., Carroll C. The online poker sub-culture: Dialogues, interactions and networks. *J Gambl Stud* 2013; 29: 613–630.
13. Guerrero-Solé F., Lopez-Gonzalez H., Griffiths M. D. Online Gambling Advertising and the Third-Person Effect: A Pilot Study. *International Journal of Cyber Behavior, Psychology and Learning* 2017; 7: 15–30.
14. Thomas S. L., Randle M., Bestman A., Pitt H., Bowe S. J., Cowlshaw S., Daube M. Public attitudes towards gambling product harm and harm reduction strategies: an online study of 16–88 year olds in Victoria, Australia. *Harm Reduct J* 2017; 14: 49.
15. Gerlitz C., Helmond A. The like economy: Social buttons and the data-intensive web2013. *New Media Soc.* 2013; 15: 1348–1365.
16. Abisheva A., Garcia D., Schweitzer F. When the filter bubble bursts: Collective evaluation dynamics in online communities. *Proceedings of the 8th ACM Conference on Web Science*; 2016 May; Hannover, Germany. New York, NY: ACM, USA; 2016. p. 307–308.
17. Bentley R. A., O’Brien M. J., Brock W. A. Mapping collective behavior in the big-data era. *Behav Brain Sci* 2014 February; 37: 94–95.
18. Oksanen A., Garcia D., Sirola A., Näsi M., Kaakinen M., Keipi T., Räsänen P. Pro-Anorexia and anti-pro-anorexia videos on YouTube: Sentiment analysis of user responses. *J Med Internet Res.* 2015; 17: e256.

19. Rost K., Stahel L., Frey B. S. Digital social norm enforcement: Online firestorms in social media. *PLoS one*. 2016; 11: e0155923.
20. Bakshy E., Messing S., Adamic L. A. Exposure to ideologically diverse news and opinion on Facebook. *Science* 2015; 348(6239): 1130–1132.
21. Keipi T., Näsi M., Oksanen A., Räsänen P. *Online hate and harmful content: Cross-national perspectives*. New York, NY: Routledge; 2017
22. Sirola A., Kaakinen M., Oksanen A. Excessive gambling and online gambling communities. *J Gambl Stud*. 2018; 34: 1313–1325.
23. Huang G. C., Unger J. B., Soto D., Fujimoto K., Pentz M. A., Jordan-Marsh M., Valente T. W. Peer influences: the impact of online and offline friendship networks on adolescent smoking and alcohol use. *J Adolesc Health*. 2014; 54: 508–514.
24. Syed-Abdul S., Fernandez-Luque L., Jian W. S., Li Y. C., Crain S., Hsu M. H., Wang Y. C., Khandregzen D., Chuluunbaatar E., Nguyen P. A., Liou D. M. Misleading health-related information promoted through video-based social media: anorexia on YouTube. *J Med Internet Res*. 2013; 15: e30.
25. Deutsch M., Gerard H. B. A study of normative and informational social influences upon individual judgment. *J Abnorm Soc Psychol* 1955; 51: 629–636
26. Kuntsche E., Labhart F. Drinking motives moderate the impact of pre-drinking on heavy drinking on a given evening and related adverse consequences: an event-level study. *Addiction* 2013; 108: 1747–1755.
27. Bond R., Smith P. B. Culture and conformity: A meta-analysis of studies using Asch's (1952b, 1956) line judgment task. *Psychol Bull* 1996; 119: 111–137.
28. Chung J. E. Peer Influence of Online Comments in Newspapers: Applying Social Norms and the Social Identification Model of Deindividuation Effects (SIDE). *Soc Sci Comput Rev* 2018; 1–17. [Online preprint]

29. Flanagin A. J., Hocevar K. P., Samahito S. N. Connecting with the user-generated Web: how group identification impacts online information sharing and evaluation. *Inf Commun Soc* 2014; 17: 683–694.
30. Aberson C. L., Healy M., Romero V. Ingroup bias and self-esteem: A meta analysis. *Pers Soc Psychol Rev.* 2000; 4: 157–173.
31. Verkuyten M., Hagendoorn L. In-Group Favoritism and R Self-Esteem: The Role of Identity Level and Trait Valence. *Group Process Intergroup Relat* 2002; 5: 285–297.
32. Tajfel H, Billig MG, Bundy RP, Flament C. Social categorization and intergroup behaviour. *Eur J Soc Psychol* 1971; 1: 149–178.
33. Zollo F., Bessi A., Del Vicario M., Scala A., Caldarelli G., Shekhtman L., Havlin S., Quattrociocchi W. Debunking in a world of tribes. *PloS one.* 2017; 12: e0181821.
34. Atzmüller C., Steiner P. Experimental vignette studies in survey research. *Methodology* 2010; 6: 128–138.
35. Oksanen A., Savolainen I., Sirola A. Kaakinen M. Problem gambling and psychological distress: a cross-national perspective on the mediating effect of consumer debt and debt problems among emerging adults. *Harm Reduct J* 2018; 15: 45.
36. Robins R. W., Hendin H. M., Trzesniewski K. H. Measuring global self-esteem: Construct validation of a single-item measure and the Rosenberg Self-Esteem Scale. *Pers Soc Psychol Bull* 2001; 27: 151–161.
37. Canale N., Vieno A., Pastore M., Ghisi M., Griffiths M. D. Validation of the 8-item attitudes towards gambling scale (ATGS-8) in a British population survey. *Addict Behav* 2016; 54: 70–74.
38. Maas C. J. M., Hox J. J. Sufficient Sample Sizes for Multilevel Modeling. *Methodology* 2005; 1: 86–92.

Table 1. English-Translated Messages and Manipulations Used in the Survey Experiment

Condition	Message
Experience-driven, pro-gambling	<i>Many of my friends and I gamble. Gambling brings me enjoyment, and it has brought significant benefits to me and my family's well-being. Behind the following link, you can read more about Finnish people's experiences on gambling.</i>
Fact-driven, pro-gambling	<i>According to a recent report, 80% of the Finnish people gamble. Gambling brings enjoyment, and it brings significant benefits to society and people's well-being. Behind the following link, you can read more research findings on gambling.</i>
Experience-driven, anti-gambling	<i>Many of my friends and I suffer from gambling problems. Gambling causes me problems, and it has caused significant damage to me and my family's well-being. Behind the following link, you can read more about Finnish people's experiences on gambling.</i>
Fact-driven, anti-gambling	<i>According to a recent report, more than 120,000 Finnish people suffer from gambling problems. Gambling causes problems, and it causes significant damage to society and people's well-being. Behind the following link, you can read more research findings on gambling.</i>

Note: Italics indicate fact-driven/experience-driven manipulations. Bold font indicates pro-gambling/anti-gambling manipulations.

Table 2. Descriptive statistics for study variables.

Variables	Sample 1		Sample 2	
	Group Condition	Control Condition	Group Condition	Control Condition
Within-subjects level (n)	2548	2252	420	500
Likes ^a	26.1%	24.1%	21.7%	18.8%
Dislikes ^a	28.1%	23.5%	22.6%	25.0%
Positive interest ^b	17.4 (11.8)	17.0 (11.3)	15.5 (11.1)	15.8 (11.8)
Between-subjects level (n)	637	563	105	125
Self-esteem ^b	6.0 (2.3)	6.0 (2.4)	5.7 (2.2)	5.0 (2.5)
Gambling attitudes ^b	23.3 (5.0)	23.6 (5.2)	24.5 (6.4)	23.6 (6.1)
Age ^b	21.3 (2.9)	21.3 (2.8)	24.0 (4.0)	24.6 (3.2)
Females ^a	48.7%	51.5%	50.5%	56.0%

Note. a=reported figures are percentages, b=reported figures are means and standard deviations in parentheses.

Table 3. Multilevel logistic regression models predicting likes in the experiment.

	Sample 1		Sample 2	
	Group Condition	Control Condition	Group Condition	Control Condition
Model 1	<i>B</i> [95% CI]	<i>B</i> [95% CI]	<i>B</i> [95% CI]	<i>B</i> [95% CI]
Intercept	-0.93 [-2.57, 0.70]	0.13 [-1.83, 2.09]	1.69 [-2.71, 6.08]	9.75 [-3.31, 22.81]
Within-subjects-level				
Positive majority	1.16 [0.91, 1.40]***	0.96 [0.67, 1.25]***	0.93 [0.27, 1.59]**	1.07 [-0.61, 2.75]
Pro-gambling	-0.96 [-1.32, -0.59]***	-1.69 [-2.26, -1.13]***	-2.29 [-3.86, -0.72]**	-6.74 [-14.65, 1.17]
Experience-driven	-0.21 [-0.43, 0.01]	0.06 [-0.20, 0.32]	-0.54 [-1.18, 0.10]	-1.07 [-3.05, 0.91]
Time (the order of messages)	0.03 [-0.08, 0.13]	0.14 [0.02, 0.27]*	0.06 [-0.24, 0.36]	-0.01 [-0.60, 0.57]
Between-subjects-level				
Self-esteem	0.04 [-0.03, 0.12]	0.08 [-0.01, 0.17]	0.02 [-0.22, 0.26]	-0.46 [-1.06, 0.14]
Gambling attitudes	0.02 [-0.02, 0.06]	-0.05 [-0.10, -0.01]*	-0.05 [-0.13, 0.04]	-0.13 [-0.32, 0.07]
Age	-0.06 [-0.12, 0.00]	-0.05 [-0.12, 0.03]	-0.10 [-0.23, 0.03]	-0.31 [-0.72, 0.10]
Gender	-0.64 [-1.01, -0.27]**	-1.16 [-1.60, -0.72]	-0.13 [-1.19, 0.93]	0.08 [-1.91, 2.06]
Log likelihood	-1299.93	-1099.1041	-192.82	-201.28
Model 2				
Intercept	0.42 [-1.32, 2.16]	1.51 [-0.52, 3.54]	2.74 [-1.73, 7.21]	9.97 [-2.15, 22.10]
Within-subjects-level				
Positive majority	1.10 [0.43, 1.76]**	0.86 [0.10, 1.62]*	1.16 [-0.67, 2.99]	2.51 [-0.89, 5.92]
Pro-gambling	-5.07 [-6.59, -3.56]***	-7.66 [-9.73, -5.60]***	-8.31 [-12.72, -3.91]***	-16.33 [-32.91, 0.26]
Experience-driven	-0.21 [-0.44, 0.02]	0.06 [-0.20, 0.32]	-0.53 [-1.16, 0.10]	-1.10 [-2.96, 0.76]
Time (the order of messages)	0.03 [-0.08, 0.13]*	0.14 [0.02, 0.26]*	0.04 [-0.26, 0.33]	-0.03 [-0.61, 0.56]
Between-subjects-level				
Self-esteem	0.04 [-0.06, 0.14]	0.07 [-0.04, 0.18]	0.05 [-0.25, 0.34]	-0.36 [-0.89, 0.17]
Gambling attitudes	-0.04 [-0.08, 0.00]	-0.11 [-0.16, -0.07]***	-0.10 [-0.18, -0.01]*	-0.17 [-0.37, 0.04]
Age	-0.06 [-0.12, 0.01]	-0.05 [-0.12, 0.03]	-0.11 [-0.24, 0.02]	-0.30 [-0.67, 0.07]
Gender	-0.66 [-1.04, -0.28]**	-1.14 [-1.59, -0.70]***	0.01 [-1.04, 1.06]	0.05 [-1.95, 2.06]
Cross-level interactions				
Positive majority*Self-esteem	0.01 [-0.09, 0.11]	0.02 [-0.10, 0.13]	-0.04 [-0.34, 0.25]	-0.30 [-0.89, 0.28]
Pro-gambling*Gambl. Att.	0.18 [0.12, 0.23]***	0.26 [0.19, 0.34]***	0.27 [0.12, 0.42]***	0.43 [-0.05, 0.91]
Log likelihood	-1277.344	-1068.4333	-184.84779	-196.87325

Note. SE=standard error, Gambl. Att.=gambling attitudes, ICC=intraclass correlation coefficient

Table 4. Multilevel logistic regression models predicting dislikes in the experiment.

	Sample 1		Sample 2	
	Group Condition	Control Condition	Group Condition	Control Condition
Model 1	<i>B</i> [95% CI]	<i>B</i> [95% CI]	<i>B</i> [95% CI]	<i>B</i> [95% CI]
Intercept	1.02 [-0.74, 2.78]	2.72 [0.99, 4.45]**	1.06 [-3.57, 5.69]	6.22 [-0.39, 12.82]
Within-subjects-level				
Positive majority	-1.09 [-1.43, -0.75]***	-0.95 [-1.21, -0.69]***	-0.70 [-1.34, -0.06]*	-1.63 [-2.82, -0.45]**
Pro-gambling	0.23 [-0.06, 0.53]	0.37 [0.06, 0.68]*	0.24 [-0.64, 1.11]	0.05 [-1.07, 1.17]
Experience-driven	0.26 [0.03, 0.49]*	0.24 [0.00, 0.48]*	0.48 [-0.15, 1.11]	0.28 [-0.40, 0.95]
Time (the order of messages)	0.13 [0.02, 0.24]*	-0.04 [-0.15, 0.07]	0.25 [-0.05, 0.54]	0.20 [-0.14, 0.54]
Between-subjects-level				
Self-esteem	0.03 [-0.06, 0.11]	-0.09 [-0.17, -0.01]*	-0.11 [-0.36, 0.14]	-0.13 [-0.40, 0.13]
Gambling attitudes	-0.09 [-0.13, -0.05]***	-0.10 [-0.13, -0.06]***	-0.09 [-0.18, -0.01]*	-0.24 [-0.38, -0.10]**
Age	-0.03 [-0.10, 0.04]	-0.06 [-0.12, 0.01]	-0.05 [-0.19, 0.10]	-0.08 [-0.29, 0.12]
Gender	-0.30 [-0.69, 0.09]	-0.52 [-0.89, -0.14]**	0.14 [-1.00, 1.27]	-0.88 [-2.33, 0.57]
Log likelihood	-1344.08	-1092.8641	-197.48	-216.43103
Model 2				
Intercept	-0.55 [-2.43, 1.33]	0.70 [-1.18, 2.59]	-0.19 [-5.10, 4.71]	5.18 [-3.74, 14.10]
Within-subjects-level				
Positive majority	-0.92 [-1.64, -0.19]*	-0.72 [-1.40, -0.03]*	-2.04 [-3.87, -0.21]*	-2.39 [-5.34, 0.55]
Pro-gambling	4.95 [3.40, 6.51]***	5.33 [3.81, 6.86]***	5.43 [1.85, 9.00]**	9.53 [-0.39, 19.44]
Experience-driven	0.28 [0.04, 0.52]*	0.26 [0.01, 0.51]*	0.45 [-0.19, 1.10]	0.30 [-0.53, 1.14]
Time (the order of messages)	0.13 [0.02, 0.24]*	-0.04 [-0.15, 0.08]	0.31 [-0.00, 0.62]	0.25 [-0.19, 0.70]
Between-subjects-level				
Self-esteem	0.05 [-0.05, 0.14]	-0.07 [-0.17, 0.02]	-0.21 [-0.50, 0.08]	-0.16 [-0.47, 0.16]
Gambling attitudes	-0.02 [-0.07, 0.02]	-0.01 [-0.06, 0.03]	-0.03 [-0.12, 0.07]	-0.18 [-0.38, 0.01]
Age	-0.03 [-0.10, 0.04]	-0.06 [-0.13, 0.01]	-0.04 [-0.19, 0.10]	-0.10 [-0.35, 0.16]
Gender	-0.31 [-0.72, 0.10]	-0.53 [-0.93, -0.13]**	0.12 [-1.03, 1.27]	-0.92 [-2.64, 0.80]
Cross-level interactions				
Positive majority*Self-esteem	-0.04 [-0.15, 0.06]	-0.05 [-0.16, 0.05]	0.24 [-0.06, 0.54]	0.06 [-0.27, 0.39]
Pro-gambling*Gambl. Att.	-0.21 [-0.27, -0.14]***	-0.22 [-0.28, -0.15]***	-0.22 [-0.38, -0.07]**	-0.43 [-0.90, 0.03]
Log likelihood	-1318.87	-1062.62	-190.60	-208.06

Note. SE=standard error, Gambl. Att.=gambling attitudes, ICC=intraclass correlation coefficient

Table 5. Multilevel linear regression models predicting positive interest in the experiment.

	Sample 1		Sample 2	
	Group Condition	Control Condition	Group Condition	Control Condition
Model 1	<i>B</i> [95% CI]	<i>B</i> [95% CI]	<i>B</i> [95% CI]	<i>B</i> [95% CI]
Intercept	18.00 [11.25, 24.76]***	15.33 [7.76, 22.89]***	33.41 [16.37, 50.45]***	21.54 [3.45, 39.62]*
Within-subjects-level				
Positive majority	1.07 [0.61, 1.54]***	0.72 [0.28, 1.15]**	0.51 [-.37, 1.39]	0.52 [-0.34, 1.38]
Pro-gambling	-2.46 [-3.04, -1.87]***	-2.78 [-3.47, -2.08]***	-3.28 [-5.44, -1.12]**	-3.70 [-5.18, -2.22]***
Experience-driven	-0.92 [-1.36, -0.47]***	-0.55 [-0.97, -0.13]*	-1.50 [-2.51, -0.49]**	-0.16 [-1.14, 0.81]
Time (the order of messages)	0.08 [-0.14, 0.31]	0.14 [-0.08, 0.37]	0.27 [-0.27, 0.81]	0.65 [0.10, 1.19]*
Between-subjects-level				
Self-esteem	0.07 [-0.26, 0.40]	0.46 [0.12, 0.80]**	0.12 [-0.64, 0.88]	-0.06 [-0.85, 0.72]
Gambling attitudes	0.10 [-0.06, 0.26]	-0.05 [-0.21, 0.11]	-0.39 [-0.76, -0.01]*	-0.23 [-0.54, 0.08]
Age	-0.05 [-0.32, 0.22]	0.12 [-0.18, 0.42]	-0.22 [-0.90, 0.46]	-0.04 [-0.65, 0.58]
Gender	-3.10 [-4.74, -1.47]***	-2.66 [-4.37, -0.95]**	-4.74 [-8.91, -0.56]*	1.61 [-2.49, 5.71]
Log pseudolikelihood	-9081.62	-7948.70	-1492.46	-1771.3475
Model 2	<i>B</i> [95% CI]	<i>B</i> [95% CI]		
Intercept	20.58 [13.51, 27.65]***	17.75 [10.07, 25.43]***	36.22 [19.16, 53.28]***	23.31 [5.25, 41.37]*
Within-subjects-level				
Positive majority	1.00 [-0.31, 2.32]	0.35 [-0.80, 1.49]	-0.02 [-2.32, 2.27]	1.46 [-0.30, 3.23]
Pro-gambling	-9.58 [-12.80, -6.36]***	-12.45 [-15.86, -9.05]***	-24.81 [-35.73, -13.90]***	-14.90 [-22.12, -7.67]***
Experience-driven	-0.92 [-1.36, -0.47]***	-0.55 [-0.97, -0.13]*	-1.49 [-2.51, -0.48]**	-0.16 [-1.13, 0.81]
Time (the order of messages)	0.08 [-0.14, 0.31]	0.14 [-0.08, 0.37]	0.23 [-0.30, 0.76]	0.69 [0.14, 1.24]*
Between-subjects-level				
Self-esteem	0.06 [-0.29, 0.41]	0.42 [0.08, 0.77]*	0.07 [-0.71, 0.85]	0.03 [-0.72, 0.79]
Gambling attitudes	-0.00 [-0.18, 0.18]	-0.14 [-0.32, 0.03]	-0.48 [-0.88, -0.08]*	-0.33 [-0.67, 0.02]
Age	-0.05 [-0.32, 0.22]	0.11 [-0.18, 0.41]	-0.23 [-0.90, 0.44]	-0.04 [-0.65, 0.57]
Gender	-3.12 [-4.75, -1.49]***	-2.68 [-4.38, -0.98]**	-4.60 [-8.69, -0.51]*	1.62 [-2.46, 5.69]
Cross-level interactions				
Positive majority*Self-esteem	0.01 [-0.19, 0.21]	0.06 [-0.13, 0.26]	0.09 [-0.27, 0.45]	-0.19 [-0.47, 0.09]
Pro-gambling*Gambl. Att.	0.31 [0.17, 0.44]***	0.41 [0.27, 0.55]***	0.88 [0.43, 1.33]***	0.48 [0.20, 0.75]**
Log pseudolikelihood	-9066.77	-7927.87	-1475.76	-1761.97

Note. SE=standard error, Gambl. Att.=gambling attitudes, ICC=intraclass correlation coefficient