

From scroll to norm: How gambling norms are being shaped by social media advertisements

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Abstract

Gambling advertising has become widespread and is related to young adults' gambling attitudes and intentions. While it is often assumed that this is due to an increased normalisation of gambling, empirical evidence on how gambling advertising influences young adults' social norms about gambling is currently lacking. This study examines whether gambling sponsorships endorsed by social media influencers (compared to brands) contribute to young adults' perceived descriptive and injunctive gambling norms. A preregistered 2 (brand type: gambling vs. control) by 2 (source: social media influencer vs. brand) between-subjects experiment was conducted among 369 young adults (aged 18 to 24 years). Results revealed that a sponsored gambling post (vs. control) directly increased perceived descriptive norms, but indirectly decreased perceived injunctive norms through heightened perceptions of moral inappropriateness. There were no significant interaction effects of source type.

Keywords: gambling advertising, sponsorship, social norms, social media, influencers, normalisation

Introduction

Social media offers gambling brands a multitude of opportunities to advertise their gambling products, ranging from sponsored brand posts that appear on users' news feeds to social media influencers who act as brand ambassadors (Guillou-Landreat et al., 2021). These influencers are influential social media users who have gathered a considerable following base by posting authentic and engaging content on their social media, such as Instagram, YouTube, and TikTok (Hudders et al., 2020). They often specialise in a particular domain or niche, such as fashion, lifestyle, or gambling, whereby they build expertise and become credible and aspirational sources of information. According to Pitt et al. (2024), young people indicate that influencers who are promoting gambling advertisements make gambling more attractive and enhance their recall of these advertisements. Furthermore, these young people perceive the involvement of influencers as a way to legitimise gambling, increase social approval and trust, and reduce the risk perception associated with gambling. While it thus has been assumed that gambling advertisements contribute to the normalisation of gambling, empirical research that examines the causal impact of social media sponsorships for gambling products on the perceived normalisation of gambling is lacking (De Jans et al., 2023).

The normalisation of gambling is often discussed in academic publications, but rarely based on sound theoretical underpinnings (Constandt et al., 2022). Social norms theory may offer an interesting theoretical lens in this regard (Berkowitz, 2005; Borsari & Carey, 2003; Cialdini et al., 1990). These social norms refer to perceptions of how others behave (i.e., perceived descriptive norms) and how others believe one should behave (i.e., perceived injunctive norms; (Borsari & Carey, 2003; Cialdini et al., 1990; Reno et al., 1993). As individual behaviour is subject to uncertainty, people are guided by the behaviours of others to cope with that uncertainty and avoid misconduct and failure. In recent years, social media

influencers have become important cultural intermediaries, determining cultural taste, habits, and behaviours (Arnesson, 2023) and therefore act as role models for youngsters.

Accordingly, the current study, using an experimental design, examines whether gambling sponsorships endorsed by a social media influencer are more effective in influencing young adults' social gambling norms than sponsored posts endorsed by a gambling brand. These conditions are compared with a control condition in which a clothing brand is endorsed in the sponsored posts. Moreover, attention is given to the underlying mechanisms of parasocial relationships and moral inappropriateness to seek explanations for potential changes in gambling norms.

Theoretical Background

Social norms play a fundamental role in the lives of young adults, aged between 18 and 24 years old, as this life phase is marked by increased independence, the shaping of identity, and a heightened importance of peer relationships (Gerwin et al., 2018; Kann et al., 2014; Vannucci et al., 2020). During their crucial life stage, young adults seek affirmation from peers and develop social norms by learning from and adapting to the behaviour of those around them (Wang et al., 2019). Moreover, young adults often rely on their social norms to navigate their own behaviour (Cialdini et al., 1990).

Rimal and Real (2005) theory of normative social behaviour distinguishes between descriptive norms, which refer to perceptions of how others behave, and injunctive norms, which refer to perceptions of how others believe one should behave. While their model analysed how these social norms can impact behaviour, the role of communication in forming these norms was not addressed. Geber and Hefner (2019) updated this model by including a step that addresses the development of social norms through norm-building processes, of which media is one. In today's digital age, social media has evolved into a central force within the media landscape, achieving an ubiquitous presence in the lives of young adults (Ortiz-Ospina

& Roser, 2023). As a result of the rapid dissemination and active nature of content creation and sharing on social media, multiple studies have already shown that social norms are not only reflected but may also be actively formed in the digital sphere (Ausat, 2023; Gündüç, 2020; Tsoy et al., 2021; Uski & Lampinen, 2016).

Although the causal relations between exposure to (digital) gambling advertising and individuals' social norms have not yet been explored, correlational research has shown a positive association between exposure to gambling advertising and young people's perceived descriptive norms about gambling (Parrado-González & León-Jariego, 2020; Vogel et al., 2021; Zheng & Lin, 2023). Based on the results of these studies, one could assume that exposure to social media advertising promoting gambling will increase young adults' social norms about gambling. On the other hand, based on the results of the recent study of De Jans et al. (2024), one may also assume that exposure to gambling advertising on social media induces scepticism, as the promotion of potentially harmful products on social media could be perceived as morally inappropriate. Considering these opposing expectations, we formulated the following central research question:

RQ: What is the impact of repeated exposure to social media advertisements promoting a gambling (vs. control) brand on the perceived descriptive and injunctive gambling norms of young adults?

In addition to our primary research objective of examining the impact of repeated exposure to social media gambling advertising, our study also aims to investigate the potential impact of the source of gambling advertisements on social media. In the realm of promotion on social media, gambling brands have several options to promote their products or services, such as through their own communication channels or using social media influencers for endorsement. While there are other methods for brands to promote their products on social media, the focus of this experimental study will be on these two approaches.

Social media influencers, who receive compensation in return for promoting products from brands on their social media, play a pivotal role in brand promotion (Hudders et al., 2021). Previous research has illuminated the distinct effects of sponsored brand versus influencer posts. For instance, Lou et al. (2019) revealed that consumers like and comment more on influencer advertisements than brand-promoted advertisements. In the context of gambling advertising, O'Loughlin and Blaszczynski (2018) compared a Facebook posting from a gambling operator with a peer posting and showed that gambling advertisements had more influence on young adults' gambling attitudes and medium-term gambling intentions when the advertisement was posted by a gambling operator compared to a peer. Thus, it can be assumed that sponsored brand versus influencer posts can have differential effects on young adults' gambling-related outcomes. We therefore aim to explore two underlying mechanisms: parasocial relationships and moral inappropriateness.

According to Lou (2022), the theory of parasocial relationships suggests that individuals build connections with social media figures, such as social media influencers. Young adults may feel a sense of closeness and intimacy with the influencers they follow (Su et al., 2021). We assume that posts by social media influencers can also impact young adults' social norms, given the influential role of significant others in shaping these norms, as suggested by social norm theory (Cialdini et al., 1990). Hence, we assume that sponsored gambling influencer posts can influence young adults' social norms about gambling through the mechanism of parasocial relationships:

H1: When exposed to social media influencer advertisements, repeated exposure to sponsored social media gambling (vs. control) advertising will increase young adults' perceived a) descriptive and b) injunctive gambling norms through higher parasocial relationships compared to a sponsored brand post.

Moreover, we assume that, compared to sponsored posts by a gambling brand, endorsements by a social media influencer may decrease perceptions of moral inappropriateness. This is based on the belief that social media influencers are perceived to be more authentic and less manipulative in their endorsements than brands (Arriagada & Bishop, 2021; Lee & Eastin, 2021). See Figure 1 for the conceptual model.

H2: When exposed to social media influencer advertisements, repeated exposure to sponsored social media gambling (vs. control) advertising will increase young adults' perceived a) descriptive and b) injunctive gambling norms through decreased moral inappropriateness perceptions compared to a sponsored brand post.

Methodology

Experimental design

A 2 (brand type: gambling vs. clothing brand) by 2 (source of the sponsored post: social media influencer vs. brand) between-subjects experimental design was used. This study was preregistered (<https://rb.gy/pg3mob>). Participants were exposed to sponsored social media advertisements that were embedded in social media feeds on Instagram for a period of four consecutive days. We chose a multiple-exposure design to reinforce the external validity of the experiment. Social media users are often repeatedly exposed to sponsored posts, whereby a single exposure to a sponsored social media post could prevent participants from gaining a real-life experience on Instagram. Ethical approval was obtained for this study.

Stimuli Materials

Participants were instructed to watch snippets of manipulated social media content daily for a period of four consecutive days. For each of the four days, we constructed an Instagram feed or stories in which one sponsored post was embedded (see Figures 2–5). The other posts in the Instagram feeds and stories were unrelated to gambling (or clothing) and were non-sponsored posts. The sponsored posts were identical, except for the brand type that was

promoted and the source of the sponsored posts. For the brand posts, we chose fictitious brand names: Bet National for the gambling brand and Adanala for the clothing brand. We also created a fictitious social media influencer profile named Nathalia De Roo. The source of the post was manipulated by changing the heading of the post.

Participants

The recruitment process occurred in Flanders at more than 20 classes over different secondary schools, colleges, and universities. During in-class calls, the researcher explained the (four-day) experiment to the students, and afterwards the students could enrol via a QR-code. After enrolling, each student received a personalised email, including a unique participant code. The participants were clearly briefed that they would only receive a €5 coupon after the completion of the entire experiment.

A total of 643 participants, aged 18 to 20 years, subscribed to participate in the study. On the final day of the experiment, 402 participants completed the online questionnaire. Subsequently, 33 respondents were eliminated from the analyses, as they did not participate every day of the experiment. Consequently, the final sample consists of 369 participants, aged between 18 and 20 years ($M = 18.39$, $SD = .70$). The final sample size exceeded our initial target of 152, determined through a Monte Carlo power analysis.

Measures

Perceived descriptive norms were measured with four variables: the *perceived gambling behaviour of others* ($\alpha = .75$, $M = 3.63$, $SD = 1.21$), *how often* ($M = 3.56$, $SD = .92$), *how much money* ($M = 76.32$, $SD = 102.45$, $min = 0.00$, $max = 600.00$), and *how many students* ($M = 38.43$, $SD = 19.93$). The measurement of perceived injunctive norms involved five distinct variables: *perceived approval of mild gambling behaviours* ($\alpha = .76$, $M = 3.27$, $SD = .78$), *perceived approval of problematic gambling behaviours* ($\alpha = .92$, $M = 1.86$, $SD = .82$), *perceived general approval of gambling* ($\alpha = .85$, $M = 3.37$, $SD = 1.14$), *perceived specific*

approval of gambling ($\alpha = .51$, $M = 4.16$, $SD = 1.12$), and *perceived approval of gambling volume* ($\alpha = .83$, $M = 1.96$, $SD = .80$). In our conceptual model we distinct two mediators: *moral inappropriateness* ($\alpha = .87$, $M = 3.90$, $SD = 1.58$) and *parasocial relationship* ($\alpha = .95$, $M = 2.41$, $SD = 1.02$). The more detailed information about all these measures can be found in the appendix.

Results

The experimental groups did not differ based on gender, age, education level, critical attitude towards gambling, opinion about scrolling through the Instagram feeds, following influencers, and monthly income available for leisure activities (see Table 1). The outcomes of the correlations between the dependent and mediating variables can be found in Table 2.

To answer RQ1, we conducted a MANOVA-test (see Table 3). We only found a main effect of brand type on the perceived descriptive norm of how often participants think a typical student gambles ($F[1, 367] = 9.93$, $p = .001$). Participants who were exposed to the sponsored gambling posts indicated that they believe the typical student at their educational institution gambles more often ($M = 3.71$; $SD = 1.00$) than the participants in the control group ($M = 3.41$; $SD = .81$). No significant main effects were identified of brand type on the other perceived descriptive norms or on the perceived injunctive norms.

To answer H1 and H2, we conducted moderated mediation analyses using the PROCESS macro (Model 7) with 5000 bootstraps (Hayes, 2019). These analyses revealed a significant main effect of brand type on moral inappropriateness ($B = 2.33$, $SE = .19$, $t = 12.37$, $p < .001$). Participants that were exposed to the sponsored gambling posts reported significantly higher levels of moral inappropriateness ($M = 5.18$; $SD = 1.25$) compared to participants in the control group ($M = 3.05$; $SD = 1.17$). As expected, the effect of brand type on parasocial relationships was not significant (see Table 4 for the detailed results). Additionally, the analyses also revealed no significant interaction effects of brand type and source on parasocial relationships

or moral inappropriateness. Thus, the indexes of the moderated mediations were not significant, whereby H1a and H2a cannot be confirmed (see Table 5 for the detailed results).

Furthermore, we must reject H1b and H2b because the indexes of the moderated mediation analyses were also not significant (see Table 5 for the detailed results). However, we did find a significant effect of moral inappropriateness on perceived specific approval of gambling ($B = -.15$, $SE = .05$, $t = -2.99$, $p = .003$). Consequently, we observed a significant indirect effect of brand type on perceived specific approval of gambling through moral inappropriateness ($B = -.35$, $SE = .12$, $95\%-CI = [-.5815; -.1180]$). Exposure to sponsored gambling posts decreased the perceived approval of specific gambling behaviours through increased moral inappropriateness perceptions.

Discussion

The results of our study reveal that repeated exposure to sponsored gambling posts on social media only led to an increased perception of how often the typical student gambles. In other words, when young adults are exposed to gambling sponsorships on social media, they think that a typical peer gambles more often compared to young adults who were not exposed to gambling sponsorships. However, exposure to these sponsored gambling posts had no impact on the other variables for descriptive norms or on any of the perceived injunctive norms. Indirectly, however, exposure to sponsored gambling posts led to a decrease in perceived injunctive norms (i.e., perceived specific approval of gambling) through heightened perceptions of moral inappropriateness.

Although our experimental study measured various descriptive and injunctive norms, few significant differences were observed. One explanation for this lies in the fact that participants, regardless of their condition (gambling vs. control), reported high perceived gambling norms. An example of this is how often a typical student gambles per year. The results from the Health Interview Survey study by Siensano (2018) indicated this to be around

20% for young adults in Belgium, whereas our participants believed that almost 40% of students had gambled in the past year.

We focused on two underlying mechanisms where the first potential explanatory factor was moral inappropriateness. Our results revealed that exposure to sponsored gambling posts led to a greater level of moral inappropriateness, subsequently causing participants to express decreased approval of gambling behaviours. Thus, participants perceived gambling advertisements as morally inappropriate, and these findings align with previous research and show that gambling ads may actually decrease perceived injunctive norms through heightened perceptions of moral inappropriateness. The second explanatory factor was parasocial relationship, and as theorised by Lou (2022), we expected that sponsored posts by social media influencers would have a higher impact on the perceived gambling norms. However, our results reveal that the parasocial relationship did not play a role in changes in perceived gambling norms. This could be explained by the fact that the influencer was a fictive influencer (Breves et al., 2021; Vrontis et al., 2021; Yuan & Lou, 2020).

However, it is crucial to note that the source of the sponsored posts did not have an impact on the influence of sponsored posts on moral inappropriateness or on the parasocial relationship. Despite several findings, such as those by Lee and Kim (2020), indicating that influencer posts are more effective than brand posts, these results were not found in our experimental study. Participants perceived these sponsored gambling posts as inappropriate, whether they came from an influencer or a brand.

Another reason why few significant effects were found in our study is the fact that we only focused on one of the three norm-building processes of Geber and Hefner (2019) model, namely media communication. The other two processes, “observation of referent others” and “communication with referent others”, are not addressed in our study.

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Tables

Table 1: Randomisation & manipulation check

Variable	Descriptive
Gender	($\chi[1] = 6.43, p = .376$)
Age	($F[3,365] = 0.53, p = .660$)
Education level	($\chi[1] = 2.60, p = .857$)
Critical attitude towards gambling	($F[3,365] = 1.36, p = .255$)
Opinion about scrolling through the Instagram feeds	($F[3,365] = 0.53, p = .661$)
Following influencers	($\chi[1] = 1.00, p = .321$)
Monthly income available for leisure activities	($F[3,365] = 0.57, p = .633$)

Table 2: Correlations between dependent and mediating variables

Note: * $p < .05$, ** $p < .01$, *** $p < .001$

	Moral inappropriateness	PSI	Perceived gambling behaviors of others	How often	How much money	How many students	Perceived approval of mild gambling behaviours	Perceived approval of problematic gambling behaviours	Perceived general approval of gambling	Perceived specific approval of gambling	Perceived approval of gambling volume
Moral inappropriateness	1	-.66	-.01	-.1.13*	.07	-.04	.01	-.09	-.03	-.14**	-.05
PSI		1	0.11*	.09	.04	-.01	-.004	.04	.08	.01	.03
Perceived gambling behaviors of others			1	-.02	.05	.56**	.24**	.17**	.40**	.15**	.26**
How often				1	.05	-.04	-.05	.04	.08	-.004	.01
How much money					1	-.08	.04	-.03	.04	.01	.04
How many students						1	.21**	.16**	.27**	.10	.21**
Perceived approval of mild gambling behaviours							1	.52**	.47**	.09	.40**
Perceived approval of problematic gambling behaviours								1	.30**	.08	.55**
Perceived general approval of gambling									1	.13*	.40*
Perceived specific approval of gambling										1	.06
Perceived approval of gambling volume											1

Tabel 3: Main effects of brand type on dependent variables

	Descriptives		Main effects of brand
	Gambling brand	Control group	
Perceived gambling behaviors of others	$M = 3.63$, $SD = 1.14$	$M = 3.62$, $SD = 1.11$	$t(367) = -.13, p = .894$
How often	$M = 3.71$, $SD = 1.00$	$M = 3.41$, $SD = .81$	$(F[1, 367] = 9.93, p = .001)$
How much money	$M = 86.44$, $SD = 116.88$	$M = 66.47$, $SD = 85.28$	$t(330.76) = -1.87, p = .061$
How many students	$M = 37.72$, $SD = 19.69$	$M = 39.12$, $SD = 20.19$	$t(367) = .25, p = .501$
Perceived approval of mild gambling behaviours	$M = 3.29$, $SD = .83$	$M = 3.25$, $SD = .72$	$t(367) = .67, p = .643$
Perceived approval of problematic gambling behaviours	$M = 1.83$, $SD = .83$	$M = 1.89$, $SD = .82$	$t(367) = .64, p = .520$
Perceived general approval of gambling	$M = 3.39$, $SD = 1.13$	$M = 3.36$, $SD = 1.16$	$t(367) = -.27, p = .789$
Perceived specific approval of gambling	$M = 4.14$, $SD = 1.10$	$M = 4.19$, $SD = 1.14$	$t(367) = .43, p = .670$
Perceived approval of gambling volume	$M = 1.91$, $SD = .76$	$M = 2.00$, $SD = .83$	$t(367) = 1.15, p = .249$

Tabel 4: Main effects and interaction effects of brand type and source on the mediators

Main effects of brand type	
Parasocial relationship	$F(1, 365) = 0.01, p = .950$
Moral inappropriateness	$F(1, 365) = 285.91, p < .001$
Main effects of source	
Parasocial relationship	$F(1, 365) = 0.87, p = .768$
Moral inappropriateness	$F(1, 365) = 0.14, p = .705$
Interaction effects of brand type and source	
Parasocial relationship	$F(1, 365) = 1.17, p = .281$
Moral inappropriateness	$F(1, 365) = 2.50, p = .115$

Tabel 5: Indexes of the moderated mediations

	Index	SE	95% CI
Brand type → Moral inappropriateness (moderated by source) → Perceived gambling behaviours of others	.01	.02	[-.0461; .0557]
Brand type → Moral inappropriateness (moderated by source) → How often	-.01	.02	[-.0693; .0171]

Brand type → Moral inappropriateness (moderated by source) → How much money	-.18	2.14	[-5.0884; 4.3359]
Brand type → Moral inappropriateness (moderated by source) → How many students	.19	.45	[-.7177; 1.1749]
Brand type → Moral inappropriateness (moderated by source) → Perceived approval of mild gambling behaviours	.00	.02	[-.0318; .0441]
Brand type → Moral inappropriateness (moderated by source) → Perceived approval of problematic gambling behaviours	.02	.02	[-.0116; .0760]
Brand type → Moral inappropriateness (moderated by source) → Perceived general approval of gambling	.02	.02	[-.0301; .0765]
Brand type → Moral inappropriateness (moderated by source) → Perceived specific approval of gambling	.03	.04	[-.0166; .1524]
Brand type → Moral inappropriateness (moderated by source) → Perceived approval of gambling volume	.00	.01	[-.0352; .0423]
Brand type → Parasocial relationship (moderated by source) → Perceived gambling behaviours of others	-.03	.03	[-.1036; .0241]
Brand type → Parasocial relationship (moderated by source) → How often	-.02	.02	[-.0822; .0136]
Brand type → Parasocial relationship (moderated by source) → How much money	-.87	1.75	[-4.9530; 2.6262]
Brand type → Parasocial relationship (moderated by source) → How many students	.07	.34	[-.5589; .8844]
Brand type → Parasocial relationship (moderated by source) → Perceived approval of mild gambling behaviours	.00	.01	[-.0264; .0316]
Brand type → Parasocial relationship (moderated by source) → Perceived approval of problematic gambling behaviours	-.01	.02	[-.0452; .0154]
Brand type → Parasocial relationship (moderated by source) → Perceived general approval of gambling	-.02	.03	[-.0803; .0216]
Brand type → Parasocial relationship (moderated by source) → Perceived specific approval of gambling	.00	.02	[-.0383; .0443]
Brand type → Parasocial relationship (moderated by source) → Perceived approval of gambling volume	-.00	.01	[-.0397; .0166]

Figures

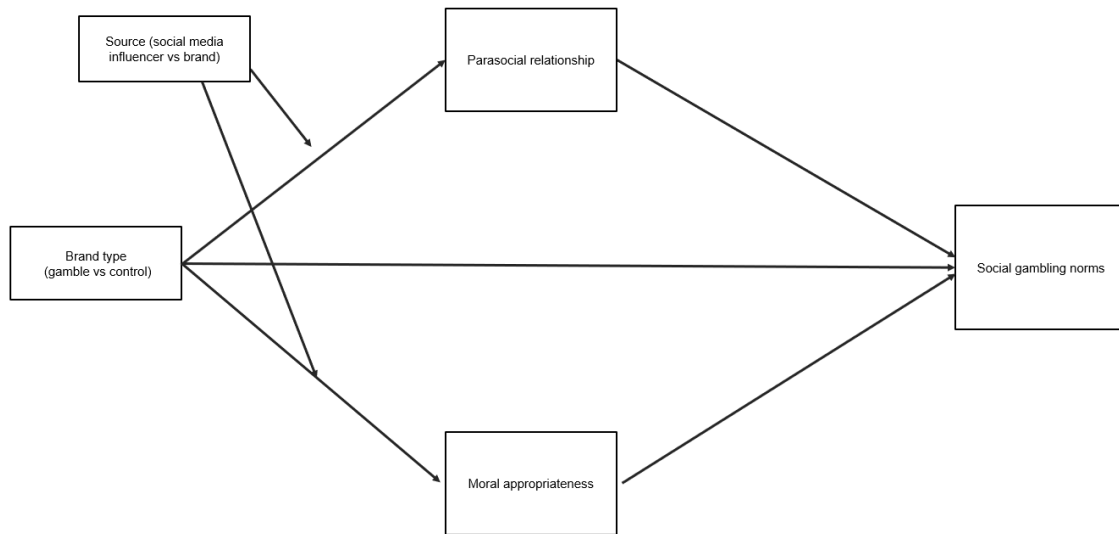


Figure 1: conceptual model

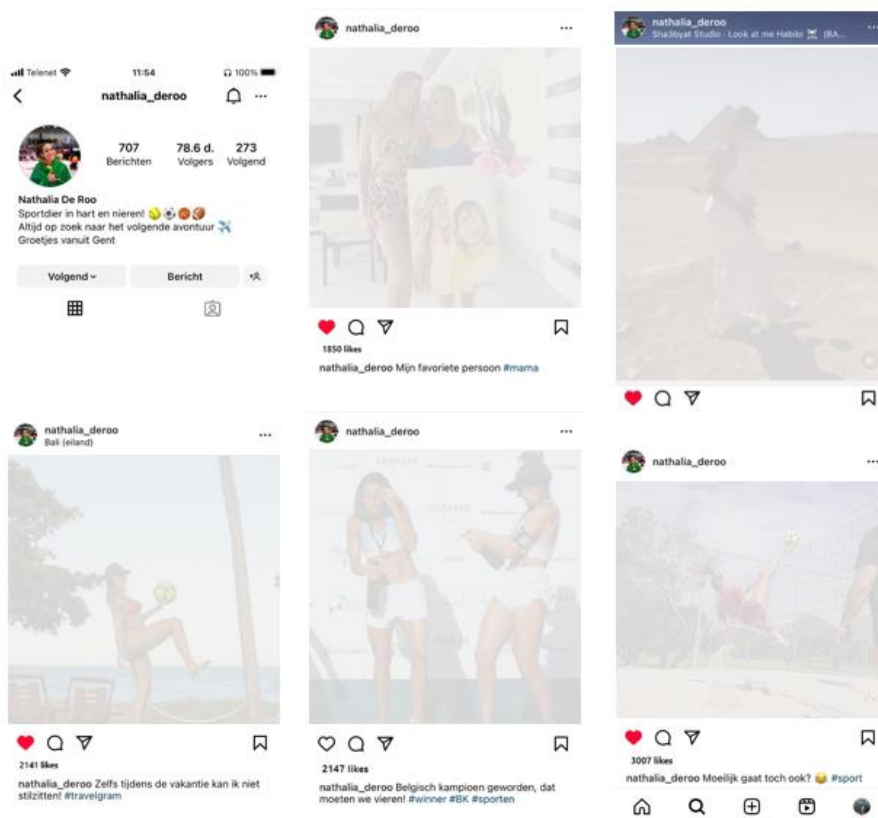


Figure 2: stimuli material day 1

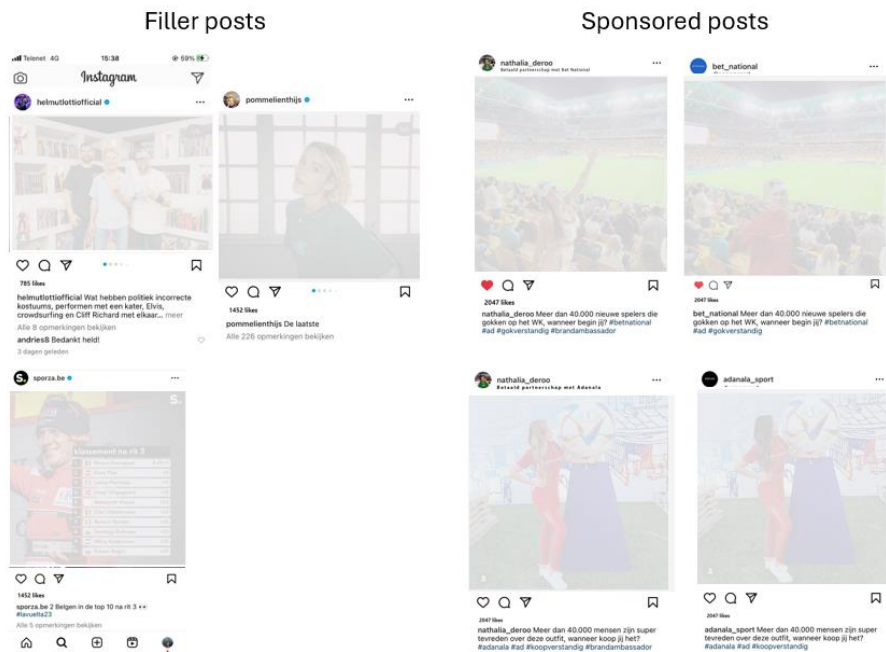


Figure 3: Stimuli material day 2

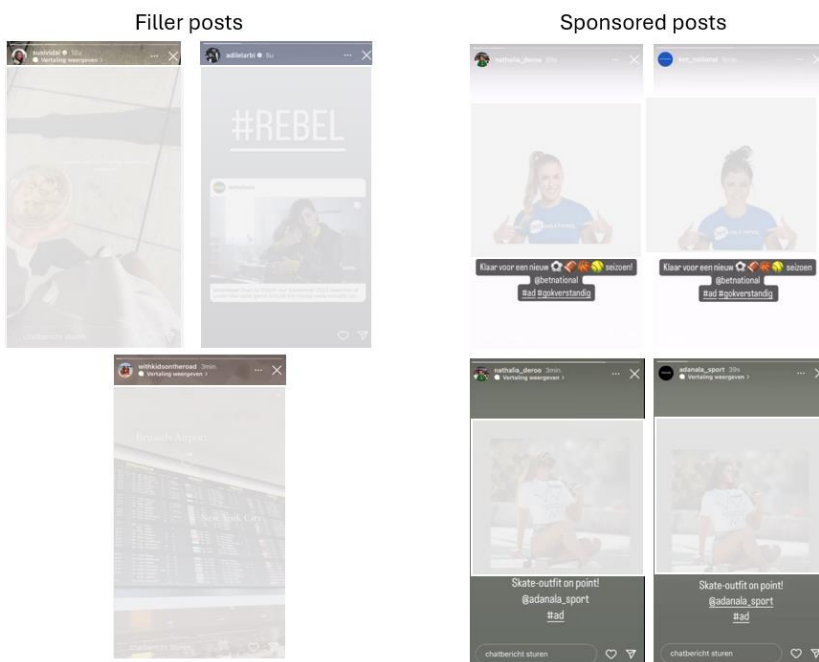


Figure 4: stimuli material day 3

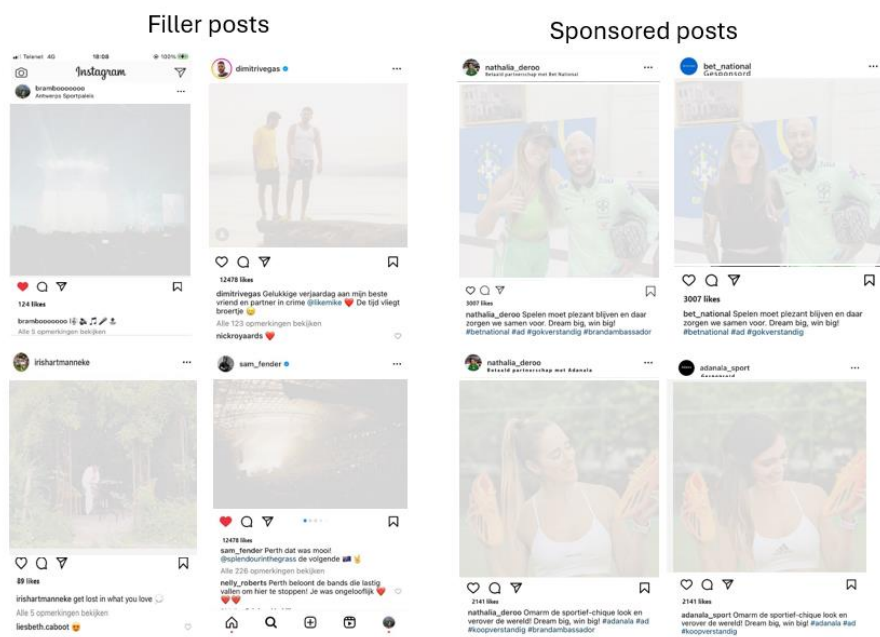


Figure 5: stimuli material day 4

Details for the measures

Measures	Items	Response Categories	References	α , M , SD
Monthly available income on leisure activities	<i>Approximately how much money do you have available each month to spend on your own?</i>	“less than 25 euros”, “between 25-49 euros”, “between 50-74 euros”, “between 75-99 euros” and “more than 100 euros		$M = 3.40$, $SD = 1.37$
Opinion about scrolling through the Instagram feeds and stories	<i>Over the past few days, you've seen several Instagram posts. How did you find scrolling through these posts? I found this...</i> <ul style="list-style-type: none"> • Nice • Annoying • Boring • Irritating • Fascinating 	1 = “totally disagree”, 7 = “totally agree”		$\alpha = .82$, $M = 4.66$, $SD = .96$
Gambling urge	<i>How would you rate your desire to gamble at this time?</i>	1 = “no desire”, 7 = “high desire”		$M = 1.83$, $SD = 1.31$
Gambling intention	<i>How likely are you to gamble in the next two weeks?</i>	1 = “highly unlikely”, 7 = “highly unlikely”		$M = 1.41$, $SD = .97$
Perceived gambling behaviours of others	<i>I have the impression that many college students at University OR at College OR at school X...</i> <ul style="list-style-type: none"> • have already gambled • have never gambled before • have the habit of gambling • consider it normal to gamble 	1 = “totally disagree”, 7 = “totally agree”	Botella-Guijarro et al. (2022)	$\alpha = .75$, $M = 3.63$, $SD = 1.21$
How often	<i>How often do you think that a typical student at University OR at College OR at school X gambles per year?</i>	“daily”, “Once or several times a week”, “Once or several times a month”, “Less than once a month”, “Not in the past 12 months” & “Never”	Siensano (2018)	$M = 3.56$, $SD = .92$
How much money	<i>In the past 12 months, how much money do you think a typical student at University OR at College OR at school X spent on average every month on gambling (not including winnings)?</i>	Amount in euros starting from 0 to....	Siensano (2018)	$M = 76.32$, $SD = 102.45$

How many students	<i>What percentage of students at Ghent University OR at College OR at school X do you think gambled at least once in the past year?</i>	% between 0 and 100	Siensano (2018)	$M = 38.43$, $SD = 19.93$
Perceived approval of mild gambling behaviors	<i>To what extent do most college students at University OR College OR at school X approve or disapprove the following behavior?</i> <ul style="list-style-type: none"> <i>If a student gambles sometimes.</i> <i>If a student gambles often.</i> <i>If a student goes to places where gambling occurs.</i> <i>If a student spends 20 euros or more/week on gambling.</i> <i>If a student buys lottery tickets.</i> 	1 = “strongly disapprove”, 7 = “strongly approve”	Neighbors et al. (2007)	$\alpha = .76$, $M = 3.27$, $SD = .78$
Perceived approval of problematic gambling behaviors	<i>To what extent do most college students at University OR College OR at school X approve or disapprove the following behavior?</i> <ul style="list-style-type: none"> <i>If a student spends 100 euros or more/week on gambling.</i> <i>If a student gambles instead of doing schoolwork.</i> <i>If a student borrows money to gamble with it.</i> <i>If a student returns another day to win back money lost gambling.</i> <i>If a student gambles with more money than intended.</i> <i>If a student misses school because of gambling.</i> <i>If a student neglects responsibilities in order to gamble.</i> <i>If a student uses money needed for other things to gamble.</i> 	1 = “strongly disapprove”, 7 = “strongly approve”	Neighbors et al. (2007)	$\alpha = .92$, $M = 1.86$, $SD = .82$
Perceived general approval of gambling	<i>Most college students at University OR at College OR at school X...</i> <ul style="list-style-type: none"> <i>deem it acceptable to gamble</i> 	1 = “totally disagree”, 7 = “totally agree”	Buunk and Bakker (1995); Larimer and Neighbors	$\alpha = .85$, $M = 3.37$, $SD = 1.14$

	<ul style="list-style-type: none"> approve gambling 		(2003); Moore and Ohtsuka (1999)	
Perceived specific approval of gambling	<p><i>Most college students at University OR at College OR at school X...</i></p> <ul style="list-style-type: none"> would disapprove of me playing slot machines would disapprove of me buying a lottery ticket 	1 = “totally disagree”, 7 = “totally agree”	Buunk and Bakker (1995); Larimer and Neighbors (2003); Moore and Ohtsuka (1999)	$\alpha = .51$, $M = 4.16$, $SD = 1.12$
Perceived approval of gambling volume	How would most college students at University OR at College OR at school X respond if they knew you...	1 = “strongly disapprove”, 7 = “strongly approve”	Baer (1994); Lardinoit and Derbaix (2001)	$\alpha = .83$, $M = 1.96$, $SD = .80$
Ad recognition	Did you see advertising in the Instagram feeds and stories you saw in the past four days?	1 = “certainly not”, 7 = “certainly”	Bagozzi and Silk (1983); Larimer and Neighbors (2003)	$M = 4.60$, $SD = 1.85$
Ad recall	For which brand or product did you see advertising?	Open ended question	Bagozzi and Silk (1983); Larimer and Neighbors (2003)	
Moral inappropriateness	<ul style="list-style-type: none"> What do you think about influencer Nathalia De Roo promoting the gambling brand BetNational on social media? What do you think about influencer Nathalia De Roo promoting the clothing brand Adanala on social media? What do you think about BetNational promoting their gambling brand on social media? What do you think about Adanala promoting their clothing brand on social media? 	<p>“Inappropriate – Appropriate”</p> <p>“Unacceptable – Acceptable”</p> <p>“Undesirable – Desirable”</p>	Boerman et al. (2018)	$\alpha = .87$, $M = 3.90$, $SD = 1.58$
Inferences of manipulative intent	<ul style="list-style-type: none"> The way Nathalia De Roo OR Betnational OR Adanala tries to persuade people seems acceptable to me Nathalia De Roo OR Betnational OR Adanala to manipulate the 	“totally disagree”, 7 = “totally agree”	Campbell (1995); Chen et al. (2021)	$\alpha = .66$, $M = 4.02$, $SD = .93$

	<p>audience in ways I don't like</p> <ul style="list-style-type: none"> • I'm annoyed by Nathalia De Roo OR Betnational OR Adanala because he or she seems to try to inappropriately manage or control the consumer audience • Nathalia De Roo OR Betnational OR Adanala is fair in what he or she says and shows. 			
Parasocial relationship	<ul style="list-style-type: none"> • <i>Nathalia De Roo OR Betnational OR Adanala makes me feel comfortable, as if I am with a friend.</i> • <i>I look forward to seeing Nathalia De Roo's OR Betnational's OR Adanala's next post.</i> • <i>I see Nathalia De Roo OR Betnational OR Adanala as a natural, down-to-earth person.</i> • <i>If Nathalia De Roo OR Betnational OR Adanala starts another social media channel, I will also follow.</i> • <i>Nathalia De Roo OR Betnational OR Adanala seems to understand the kinds of things I want to know.</i> • <i>If I see a story about Nathalia De Roo OR Betnational OR Adanala in other places, I would read it.</i> • <i>I miss seeing Nathalia De Roo OR Betnational OR Adanala when she did not post on time.</i> • <i>I would like to meet Nathalia De Roo OR Betnational OR Adanala in person.</i> • <i>If something happens to Nathalia De Roo OR Betnational OR Adanala I will feel sad.</i> • <i>I would invite Nathalia De Roo OR Betnational OR Adanala to my party.</i> • <i>Nathalia De Roo OR Betnational OR Adanala is the kind of person I</i> 	1 = “totally disagree”, 7 = “totally agree”	Rosaen and Dibble (2016); Yuan and Lou (2020)	$\alpha = .95$, M = 2.41, SD = 1.02

	<p>would like to play or hang out with.</p> <ul style="list-style-type: none"> • <i>If Nathalia De Roo OR Betnational OR Adanala lived in my neighborhood we would be friends.</i> • <i>Nathalia De Roo OR Betnational OR Adanala would fit in well with my group of friends.</i> 			
Problem gambling profile	<ul style="list-style-type: none"> • <i>Have you ever gambled for a higher amount than you could afford?</i> • <i>Have you ever felt you had to gamble with higher amounts to experience the same feeling of excitement/excitement?</i> • <i>Have you ever started a gambling game to win back the amount you had previously lost?</i> • <i>Have you ever borrowed money or sold something in order to gamble?</i> • <i>Do you feel you may have a gambling problem?</i> • <i>Has gambling caused certain health problems for you, including, for example, stress and anxious feelings?</i> • <i>Have others criticized your gambling or told you that you have a gambling problem, regardless of whether you felt they were right?</i> • <i>Has gambling caused certain financial problems for you?</i> • <i>Have you ever felt guilty about how you gamble or what happens when you gamble?</i> 	<p>‘Never’, ‘Sometimes’, ‘Most of the time’, ‘Almost always’, ‘I don’t know’ or ‘I wish not to answer’</p>	Ferris and Wynne (2001)	
Critical attitude towards gambling	<ul style="list-style-type: none"> • <i>There are too many opportunities for gambling nowadays</i> • <i>Students should have the right to gamble whenever they want</i> • <i>Gambling should be discouraged</i> • <i>Most people who gamble do so sensibly</i> 	<p>1 = “totally disagree”, 7 = “totally agree”</p>	Orford et al. (2009)	<p>$\alpha = .76$, $M = 4.77$, $SD = .66$</p>

	<ul style="list-style-type: none"> • <i>Gambling is a fool's game</i> • <i>Gambling is dangerous for family life</i> • <i>Gambling is an important part of cultural life</i> • <i>Gambling is a harmless form of entertainment</i> • <i>Gambling is a waste of time</i> • <i>On balance gambling is good for society</i> • <i>Gambling livens up life</i> • <i>It would be better if gambling was banned altogether</i> • <i>Gambling is like a drug</i> • <i>Gambling is good for communities</i> 			
Familiarity gambling	How familiar does gambling feels to you?	1 = “ very unfamiliar”, 7 = “very familiar”		$M = 1.48$, $SD = .92$