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Facebook dethroned: Revealing the more likely social media destinations for college students' depictions of underage drinking

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Abstract

Studies examining representations of college drinking on social media have almost exclusively focused on Facebook. However, recent research suggests college students may be more influenced by peers' alcohol-related posts on Instagram and Snapchat, two image-based platforms popular among this demographic. One potential explanation for this differential influence is that qualitative distinctions in the types of alcohol-related content posted by students on these three platforms may exist. Informed by undergraduate focus groups, this study examined the hypothesis that, of the three platforms, students tend to use Instagram most often for photos glamorizing drinking and Snapchat for incriminating photos of alcohol misuse and negative consequences. Undergraduate research assistants aided investigators in developing hypothetical vignettes and photographic examples of posts both glamorizing and depicting negative consequences associated with college drinking. In an online survey, vignette and photo stimuli were followed by counterbalanced paired comparisons that presented each possible pair of social media platforms. Undergraduates (N=196) selected the platform from each pair on which they would be more likely to see each post. Generalized Bradley-Terry models examined the probabilities of platform selections. As predicted, Instagram was seen as the most probable destination (and Facebook least probable) for photos depicting alcohol use as attractive and glamorous. Conversely, Snapchat was selected as the most probable destination (and Facebook least probable) for items depicting negative consequences associated with heavy drinking. Results suggest researchers aiming to mitigate the potential influences associated with college students' glamorous and consequential alcohol-related photos posted social media posts should shift their focus from Facebook to Instagram and Snapchat.

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Statement 2: Contributors

Sarah Boyle, Andrew Earle, Joseph LaBrie, and Kayla Ballou each contributed significantly to the preparation of the manuscript. Specifically, Sarah Boyle designed the study, conducted the statistical analysis, and drafted the Introduction, Results, and Discussion sections. Andrew Earle and Kayla Ballou lead focus groups and the development of vignette and photo stimuli used in this research. Andrew Earle also drafted the Methods section. Dr. LaBrie oversaw the production of the manuscript, outlined the Discussion section, and edited the manuscript in its entirety. All authors contributed to and have approved the final manuscript.

Statement 3: Conflicts of Interest

All authors declare that they have no conflicts of interest.

1. Introduction

Perceptions of peer drinking norms are among the strongest predictors of alcohol use among undergraduate students (Borsari & Carey, 2003; Neighbors, Lee, Lewis, Fossos & Larimer, 2007) and recent research suggests new students arriving on campus may be especially likely to turn to *social media sites* (SMS) in order to learn the norms for acceptable behavior at their university (Kitsantas, Dabbagh, Chirinos, & Fake, 2016)—including norms related to alcohol use (Moreno et al., 2009; 2014). Alcohol use and risky drinking are often glorified and glamourized by college students on SMS (Niland, Lyons, Goodwin, & Hutton, 2014; Hebden, Lyons, Goodwin, & McCreanor, 2015; Ridout, Campbell, & Ellis, 2011) and exposure to alcohol-related content posted by peers may inflate perceptions of drinking norms (Fournier, Hall, Ricke, & Storey, 2013) and, subsequently, influence underage college students' own future alcohol consumption (Boyle, LaBrie, Froidevaux, & Witkovic, 2016).

Studies to date have focused mainly on college drinking as represented on Facebook, the leading SMS platform. However, market research data suggests Facebook use by college students has decreased substantially in recent years (Neal, 2014; Matthews, 2014; Hoelzel, 2015), while students' use of Instagram and Snapchat, newer image-based SMS platforms, has skyrocketed and is projected to rapidly grow over the next 3 years (Stamper, 2015; Bercovici, 2013; Hoelzel, 2015; Lenhart, 2015; 2014). In fact, according to the latest usership statistics Instagram and Snapchat have eclipsed all other non-Facebook SMS platforms (including Twitter) in terms of young-adult users and, along with Facebook, now represent the three most widely used SMS platforms among young adults nationwide (Koh, 2016; Cavazos-Rehg, Krauss, Sowles, & Bierut, 2016; Hoelzel, 2015; Lenhart, 2015). In the only published study comparing college students' exposure to alcohol-related content across multiple SMS platforms undergraduates reported more frequent exposure on both Instagram and Snapchat, relative to Facebook. Moreover, exposure to alcohol content on Instagram and Snapchat was more strongly related to students' current and future alcohol use than was exposure on Facebook (Boyle et al, 2016). Thus, while Instagram and Snapchat appear to play a critically important role in the alcohol use trajectories of first-year students and may be more important than Facebook, there is a dearth of research examining the nature of this influence.

One potential explanation for the differential influence of these three SMS is that there may be qualitative differences in the alcohol-related content posted by students on these platforms. That is, while we know large numbers of college students post alcohol-related content on SMS (e.g., Moreno et al, 2014; Rodriguez et al., 2016; Boyle et al, 2016), it is unlikely that all content is equal in prevalence and influence. For example, researchers have suggested that two distinct types of alcohol-related posts, those glamourizing college drinking, and those depicting the negative consequences associated with alcohol misuse, may be more prevalent among college students and potentially influential than other types of alcohol-related content (e.g., Ridout, et al., 2011; Niland, et al., 2014; Moewaka Barnes, McCreanor, Goodwin, Lyons, Griffin, & Hutton, 2016). What has not been considered to date is how the specific features of SMS platforms may make particular platforms more or less likely destinations for glamorizing and consequential alcohol-related posts.

Anecdotal evidence from student focus groups at our University suggests Instagram's photo enhancement filters, moderate level of privacy, and focus on aesthetic beauty may make it a preferred destination for photos glamourizing college drinking. In contrast, Snapchat's greater privacy and unique disappearing-post feature may make it the preferred destination for student's incriminating and embarrassing images depicting alcohol-related consequences. If verified empirically, these platform-specific differences in the types of alcohol-related content posted by undergraduates may carry important implications for social media-based college drinking prevention efforts. Specifically, efforts could shift to the specific SMS most likely to attract prevalent & influential alcohol-related-content and interventions could be informed by specific platform features. Thus, in an effort to help direct future prevention efforts, the current study examined which SMS platforms were viewed by undergraduate students as the most likely destinations for SMS posts that (a) glamourize alcohol use and (b) portray negative consequences associated with heavy drinking.

2. Method

2.1 Participants and Procedure

Participants were 209 undergraduate students at a private, mid-sized university on the west coast of the United States who received course credit from the psychology department subject pool for completing an online survey about college life. All measures and procedures were approved by the university's Institutional Review Board. Although neither familiarity nor active use of SMS platforms were requisites for participation, 98% of participants reported having an active Facebook account, 94% reported having an active Instagram account and 95% reported having an active Snapchat account. The current study focuses on the 196 students that reported active use of all 3 SMS platforms. The majority of these participants reporting checking SMS once or more per day; 79% for Facebook, 85% for Instagram, and 87% for Snapchat. Participants were predominantly freshmen or sophomores (N=181, 92.3%), the mean age was 19.02 years (SD =.42), and 72% were female, 53% were Caucasian, 8% were Asian, 12% were African American, 25% were Hispanic, and 2% were multi-racial or other.

After signing up for the study participants received a link to the online survey, which was approximately 30 minutes long. The current study focuses on the initial module of the larger survey, which was presented to participants as a "Social Media Quiz". This quiz presented a series of 6 vignettes describing situations leading up to SMS posts by college students and 6 sample photos that might be posted on SMS by college students. After viewing each stimulus, participants selected the SMS on which they would be most likely to see the post described or depicted. Options were presented using a paired comparison approach which required participants to select the more likely platform for each post from three sets of platform pairs (e.g., Facebook vs. Instagram, Facebook vs. Snapchat, Instagram vs. Snapchat). Both platform pairs and order of the platforms presented within pairs were counterbalanced across items.

2.2 Measures

2.2.1 Alcohol-Related Situational Vignettes—Five undergraduate research assistants aided investigators in developing vignettes describing situations in which college students might post an alcohol-related SMS photo. First, each research assistant drafted six situations likely to result in (a) a social media post glamourizing alcohol use and (b) a social media post depicting negative consequences associated with heavy drinking. Research assistants and investigators then voted to select the top 3 alcohol glamourizing vignettes (i.e., a group of girls all dressed up pre-gaming before going out, a group of students dressed up sipping champagne at a trendy restaurant, and a group of fraternity brothers posing in front of their fully-stocked bar before their house party) and the top 3 consequential vignettes (i.e., a friend vomiting out of the window of an Uber on the way home from a party, the first friend to pass out after a long day of drinking, and a drunk fight at a party). Vignettes were designed to tap the cognitive aspects of SMS platform selection for an alcohol-related post given situational characteristics.

2.2.2 Alcohol-Related Photo Posts—Following the same process, undergraduate research assistants aided investigators in developing 6 typical college student photos glamourizing alcohol use and depicting negative consequences associated with heavy drinking. Photo posts were designed to emphasize aesthetic qualities and mimic the content college students often see their peers post on SMS. Thus, in contrast to the vignettes, the photos were intended to tap recognition and automatic processing related to the types of photos students typically see on the three SMS platforms. Investigators Photoshopped the images to create different versions consistent with the exact specifications (i.e., size, dimensions, caption positioning) of actual photo posts on Facebook, Instagram, and Snapchat (See Figure 1 for examples). Research assistants and investigators then voted to determine the 3 most realistic alcohol glamourizing photos and the 3 most realistic alcohol consequential photo posts.

3. Results

Individual Generalized Bradley-Terry Models (Bradley & Terry, 1952; Rau & Kupper, 1967; Agresti, 1996) were conducted on the pairwise platform comparison selections made by participants for each vignette and photo stimulus. The first six models are summarized in Table 1 and focus on the vignettes ($N=3$) and photos ($N=3$) intended to glamorize alcohol use. The model for each glamorous alcohol situation and photo examined the probabilities that participants selected either Facebook, Instagram, or Snapchat as the most likely destination for the post when it was matched up against each of the other platforms (Table 1). The second set of models summarized in Table 2 focused on vignettes ($N=3$) and photos ($N=3$) intended to portray negative consequences of alcohol use. Similarly, each model examined the probabilities that participants selected either Facebook, Instagram, or Snapchat as the most likely destination for that post when pitted against the two other platforms (Table 2). As indicated by the parameter estimates and pairwise probabilities in Table 1, Instagram was selected as the most probable destination for all vignettes and photo stimuli glamourizing alcohol use. With few exceptions, Facebook was selected as the least likely destination for stimuli glamorizing alcohol use. For the vignette and photo stimuli portraying

negative consequences associated with alcohol misuse, the parameter estimates and probabilities in Table 2 indicate that Snapchat was uniformly selected as the most probable destination for this type of post while Facebook was selected as the least likely destination.

4. Discussion

In line with anecdotal evidence from our prior focus groups, participants in the current study selected Instagram as by far the most probable destination for posts depicting alcohol use as attractive and glamorous and Snapchat as the most probable destination for posts portraying negative consequences associated with alcohol misuse. Facebook, in contrast, was the least probable platform destination for the majority of posts of both types. These findings, while important in differentiating among SMS sites' impacts, are not surprising when the features of these social media platforms are examined. Instagram's privacy, focus on beautiful images, attractive photographic filters, and dramatic effects make it particularly easy to "air-brush" (Niland et al., 2014) and glamorize any behavior, including alcohol use. Meanwhile, Snapchat posts can only be played once and disappear in a matter of seconds, assuring students that there will be no lasting proof of their alcohol misuse and embarrassing negative consequences. Moreover, unlike Facebook, where each account is tied to the user's first and last name, Instagram and Snapchat accounts do not require any identity or age verification, minimizing potential legal and social consequences associated with posting images of underage drinking.

4.2 Implications

Between February 2012 and 2016 over 20 published studies have examined alcohol-related content posted by college students on Facebook either in relation to students' own drinking behavior (e.g., Westgate, Neighbors, Heppner, Jahn, & Lindgren, 2014; Rodriguez, Litt, Neighbors, & Lewis, 2016), as a potential source of influence on the drinking behavior of peers (e.g., Fournier et al., 2013;) or as a potential medium for alcohol prevention efforts (Ridout & Campbell, 2014). Meanwhile, findings from the present study suggest that Facebook may actually be far less relevant to college drinking culture than Instagram and Snapchat, two popular image-based SMS platforms. Undergraduates consistently judged Instagram to be the more likely destination for glamorous depictions of alcohol use, and Snapchat to be the more likely home for posts depicting negative consequences associated with heavy drinking. Such differences in alcohol-related content may explain previous findings suggesting that alcohol-related content viewed on Instagram and Snapchat is more likely to influence students' own drinking behavior than content viewed on Facebook (Boyle et al., 2016). Further, in the current study nearly 90% of students reported checking Instagram and Snapchat at least once a day while only 79% checked Facebook as frequently. Results from these two studies together suggest researchers aiming to mitigate the potential influence of alcohol-related images on social media would be wise to shift their focus to now include Instagram and Snapchat in addition to Facebook. Further, given the constantly-evolving social media landscape, as new SMS platforms emerge it may be important to monitor the extent to which these platforms are seen as desirable destinations for alcohol-related content. The current study suggests that privacy and photo filters may be SMS features that invite alcohol-related content, although more research is needed to confirm this.

4.3. Limitations and Directions for Future Research

This preliminary study is not without limitations. First, this study assessed only the most probable SMS platform for alcohol-related SMS images. Media Richness Theory (Daft & Lengel, 1984) and recent social media marketing findings (Strekalova, & Krieger, 2015) suggest that image-based SMS posts may be more influential than text-based posts, and thus photos containing alcohol-related content may leave a larger imprint on young-adult viewers than posts containing only text. However, platforms focusing on text-based status updates like Facebook and Twitter may remain popular destinations for text-based posts referencing alcohol. Future research should examine both the prevalence and influence of text-versus image-based alcohol-related posts on these various platforms. Findings from the current are also specific to a small sample of undergraduate psychology students at a single west-coast university (notably the same University population sampled by Boyle et al, 2016) and suggest the need for further study on Instagram and Snapchat in relation to college drinking with larger and more diverse cohorts of college students. Further, findings yielded by the paired comparison method employed in this study should also be investigated via content analyses of alcohol-related posts by college students on Facebook, Instagram, and Snapchat. Additionally, while a number of studies have focused on the potential risks associated with viewing peers' glamorized alcohol-related content on social media, findings from this study raise the question of what the impact might be of posts depicting the non-glamorous, consequential aspects of college drinking. For instance, do the potential risks (e.g., inflated drinking norms and the normalization of consequences) outweigh the protective influences (e.g. negative alcohol expectancies) of these posts? What is the net impact on drinking behavior?

4.4 Conclusions

The present investigation, the first to examine differences in the types of alcohol-related images posted by college students on Facebook, Instagram, and Snapchat, found that Instagram was rated as the most likely destination for photos glamorizing alcohol use while Snapchat was selected as the top destination for photos portraying the negative consequences associated with alcohol misuse. Facebook was consistently rated as the least likely network for both types of alcohol-related content. These results suggest that, among the three top SMS, Facebook, despite continued empirical attention, may actually be the least relevant with respect to college students' risky drinking behaviors. Future research and SMS-based college drinking prevention efforts should shift focus from Facebook to also examine Instagram and Snapchat, especially given that the latter two networks are predicted to eclipse the former in popularity during the coming years.

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Highlights

- Instagram was the most likely destination for posts glamorizing college drinking
- Snapchat was the most likely destination for posts showing negative consequences
- Facebook was judged to be the least likely destination for both post types
- College drinking prevention researchers should shift focus to Instagram and Snapchat

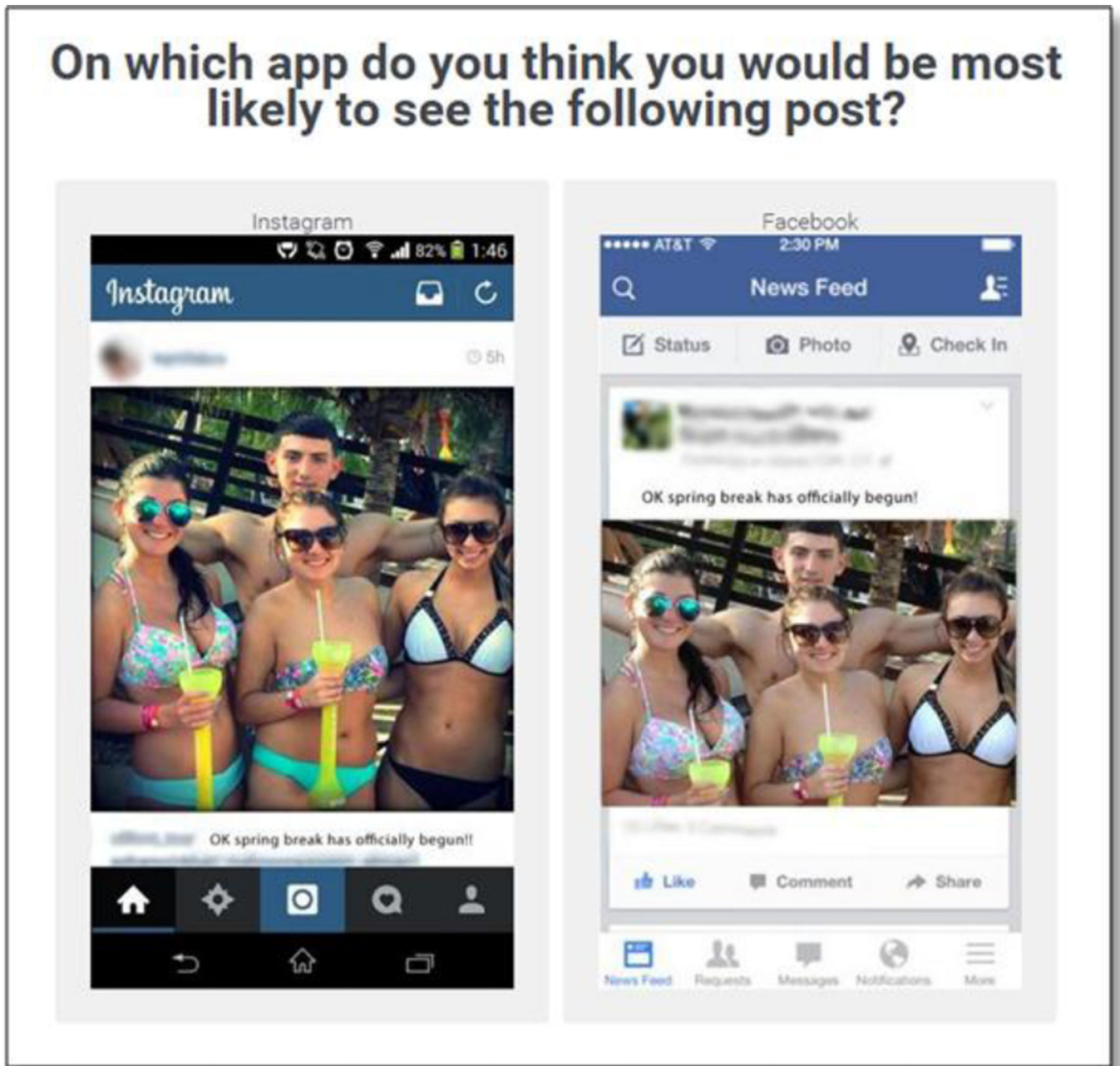


Figure 1.

Example of hypothetical alcohol-related social media photos edited to be consistent with the dimensions, appearance, and features of mobile newsfeed/story photos posted by peers on Facebook, Instagram, and Snapchat.

Selecting the most likely destination for glamorous alcohol-related content: generalized Bradley-Terry model results for pairwise platform comparisons

Table 1

Stimuli	Platform	Parameter Estimate	SD	Probabilities of winning		
				vs FB	vs IG	vs SC
Frat guys proudly posing in front of fully stocked bar vignette	Facebook (FB)	.52	.04	-	.27	.32
	Instagram (IG)	1.38** ^{FB}	.06	.73	-	.56
	Snapchat (SC)	1.08** ^{FB}	.06	.67	.43	-
Dressed up sipping champagne at a trendy restaurant vignette	Facebook (FB)	.45	.03	-	.21	.37
	Instagram (IG)	1.76** ^{FB, SC}	.06	.80	-	.69
	Snapchat (SC)	.78 ^{FB}	.03	.63	.31	-
Group of girls looking their best pre-gaming before a party vignette	Facebook (FB)	.28	.01	-	.08	.33
	Instagram (IG)	2.36** ^{FB, SC}	.09	.92	-	.84
	Snapchat (SC)	.36	.02	.67	.16	-
First drinks of spring break group photo	Facebook (FB)	.46	.02	-	.17	.56
	Instagram (IG)	2.19** ^{FB, SC}	.08	.83	-	.86
	Snapchat (SC)	.35	.03	.43	.14	-
Drinking girls in costumes at Halloween party photo	Facebook (FB)	.40	.03	-	.19	.31
	Instagram (IG)	1.71** ^{FB, SC}	.04	.81	-	.66
	Snapchat (SC)	.89 ^{FB}	.04	.69	.34	-
Beer and cigar at café abroad scenic photo	Facebook (FB)	.41	.04	-	.20	.30
	Instagram (IG)	1.62** ^{FB, SC}	.03	.80	-	.63
	Snapchat (SC)	.87 ^{FB}	.04	.70	.37	-

* $P < .01$;

** $P < .001$

Selecting the most likely destination for posts portraying negative alcohol-related consequences: generalized Bradley-Terry model results for pairwise platform comparisons

Table 2

Stimuli	Platform	Parameter Estimate	SD	Probabilities of winning vs FB	vs IG	vs SC
Punched out drunk at party vignette	Facebook (FB)	.08	.01	-	.26	.03
	Instagram (IG)	.21 ^{*FB}	.02	.74	-	.07
	Snapchat (SC)	2.71 ^{**FB,IG}	.02	.97	.92	-
Throwing up out the window of an Uber vignette	Facebook (FB)	.04	.01	-	.27	.02
	Instagram (IG)	.10 ^{*FB}	.01	.63	-	.03
First to get sick after drinking for hours vignette	Snapchat (SC)	2.86 ^{**FB,IG}	.01	.98	.97	-
	Facebook (FB)	.06	.01	-	.29	.02
	Instagram (IG)	.18 ^{*FB}	.01	.71	-	.05
Friend throwing up after a rough night photo	Snapchat (SC)	2.78 ^{**FB,IG}	.01	.98	.95	-
	Facebook (FB)	.09	.02	-	.36	.03
	Instagram (IG)	.18 ^{*FB}	.02	.64	-	.05
Passed out in yard with empty beer cans photo	Snapchat (SC)	2.75 ^{**FB,IG}	.01	.97	.95	-
	Facebook (FB)	.10	.02	-	.42	.04
	Instagram (IG)	.16	.02	.58	-	.06
Asleep on toilet rough night photo	Snapchat (SC)	2.73 ^{**FB,IG}	.02	.96	.94	-
	Facebook (FB)	.04	.02	-	.25	.02
	Instagram (IG)	.13 ^{*FB}	.01	.65	-	.04
Snapchat (SC)	2.82 ^{**FB,IG}	.01	.98	.96	-	

* $P < .01$;

** $P < .001$