A CONTENT ANALYSIS OF SOCIAL MEDIA POSTS RELATED TO ALCOHOL USE:

2018-2019

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A Senior Honors Project Presented to the

Honors College

East Carolina University

In Partial Fulfillment of the

Requirements for

Graduation with Honors

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May, 2020

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Introduction

This project analyzed social media data, posted on the popular Instagram platform from August 2018 through December 2018, and compared with data posted from August 2019 through December 2019. Instagram users who posted images with a specific ECU hashtag during the time frame mentioned, were pulled from the collective sample and analyzed for specific variables related to promotion and use of alcohol. The goal of the study was to document the percentage of alcohol-related posts on Instagram from individuals living in Greenville, North Carolina or attending school at East Carolina University. The collection from two time frames was critical to determine whether a change in state policy to allow for the sale of alcohol at university sporting events had an impact on the frequency alcohol was displayed on social media.

Binge drinking is the most common, costly, and deadly pattern of excessive alcohol use in the United States (Sacks et al, 2010). Binge drinking occurs when individuals consume too much alcohol in too little time, roughly five drinks in two hours. This poses a huge public health concern, specifically when the issue is preventable. Binge or excessive drinking is not only an issue on a personal level; social factors can be attributed as well. Individuals are nested within their micro system (family, work, and school environments), which is nested in an even larger macro system. Macro level factors include marketing and policy change related to alcohol. Macro level factors influence microsystem networks such as school attitudes and norms, which ultimately affect personal attitudes and behaviors (Sudhinaraset et al., 2016). With the introduction of House Bill 389, which allows beer and wine sales at sporting events at institutions of higher education in North Carolina, there is concern that binge drinking could

potentially become a norm on East Carolina's campus. This change in a macro level factor may impact student behaviors and the amount that individuals drink and post alcohol related images on social media.

Background

In the United States, roughly 40% of college students reported binge drinking (5 or more drinks during an occasion) within a given month and more than 50% are consuming alcohol. Some epidemiological studies show an increased pattern of binge drinking amongst young adults, specifically university students (Kypri et al., 2009). Additional research suggests that an individual's peers are influential to introducing, providing, and pressuring risky behaviors, such as binge drinking or drug use (Kinard & Webster, 2010). While binge drinking can lead to an increase of risky behaviors, it also poses both acute and chronic effects on individuals' health (Farke & Anderson, 2007). Alcohol use and patterns of binge drinking have an increased risk of negative social consequences as well as an increased risk to individuals other than the drinker (i.e. third party) (Anderson & Baumberg, 2006).

Through modeling of certain behaviors, college students are more likely to view consuming alcohol as a positive or socially acceptable behavior (Kinard & Webster, 2010). The goal of this study was to examine the percentage of alcohol related posts on Instagram and the social context behind what is being posted and modeled to fellow peers. If an individual is posting images on a social networking site while consuming alcohol in a positive light, it encourages others that this is socially acceptable on East Carolina University's campus.

Individuals, specifically college students, consuming alcohol are more often influenced indirectly through modeling and perceived drinking norms. Modeling involves the immediate

imitation of a peer's action while a perceived norm is a social pressure to either perform or not perform a behavior. Individuals in an environment centered around heavy drinking are more likely to drink heavily. These indirect influences are often based on an individual's perception of their peer's approval of drinking (Borsari & Carey, 2003). Given that research indicates alcohol assumption on college campuses is positively correlated with social acceptance, this project aimed to determine what role social media plays in displaying social norms.

Within the last decade, social media use has grown exponentially, from nearly 1 billion users in 2010, to roughly 2.95 billion users as of 2019 (Clement, 2020), and with that, growth has followed a new dependence on social media. The intensity of social media use has been demonstrated to facilitate perceived social support (Oh et al., 2014). Unlike individual's social groups offline, which often have distinctions between best friends, close friends, acquaintances, etc., social groups online using social media rarely make a distinction and thus users are interacting with a larger scale of people. Some studies indicated that frequent posting on social media led users to feel a greater sense of connectedness to their community (Köbler et al., 2010). This sense of individuals feeling socially connected online and the prevalence of binge drinking among university students has led to the questions posed in this study.

For this study, the goal was to document the amount of Instagram posts that are related to alcohol during August 2018-December 2018, and August 2019-December 2019 using ECU related hashtags. This included images with alcohol present or images with no alcohol present but captions that included words related to alcohol consumption (i.e beers, wasted, drinking, etc.). Three overarching ideas were assessed including (i) whether a change in policy allowing the sale of alcohol during sporting events had an effect on the amount of posts related to alcohol,

(ii) what overall message is being displayed in alcohol related posts, whether positive, negative, or neutral and (iii) the social demographics related to the posts (i.e. gender, type of alcohol, and interactions with the post). The collection of these parameters allows a better understanding of the norms that East Carolina portrays regarding alcohol and will enable future discussions on ways to better prevent high risk alcohol behaviors.

Methodology

This study involved collecting data already present on the social media app, Instagram. All methods were approved by ECU's Institutional Review Board (IRB). In order to abide by IRB regulations, only public accounts were included in the study. The total number of posts using the specific hashtags were recorded but only images pertaining to alcohol were analyzed. No posts were excluded based on race, gender, nationality, or any other demographic. Two key investigators collected the data separately, coded individually, and then came together to form a consensus on the total number of posts before analyzing the content.

The data were collected in two samples; the first being from August 1st, 2018- December 8th, 2018, and the second sample was collected from August 1st, 2019- December 8th 2019. Two samples were collected in order to test the main research question, which regarded whether there would be an increase of alcohol-related posts after the introduction of House Bill 389. The dates were selected to include all of the ECU football games and remain a constant between the two samples. The data was collected using four hashtags related to ECU college football games per collection cycle.Those hashtags were: #ecufootball, #ecugameday, #ecutailgate, and #rollpirates. Each hashtag produced a main sample of posts, and alcohol-related posts/pictures were pulled from the sample and recorded. In order to assess interrater reliability of the data, two individuals

interpreted the data and came to a consensus. The individuals coded the posts based on the alcohol presentation, type of alcohol, type of account, account owner's gender, caption, context, likes, and comments present.

Once the alcohol-related posts were collected from each specific hashtag, they were downloaded, given a corresponding number, and placed into a Microsoft Excel document. Additionally, each post had a corresponding letter, dictating which hashtag and year the post belonged to (i.e posts from #ecugameday 2018, were given letter 'A'). This study based the coding scheme off a study previously done using the social media platform Facebook (Hendricks et al., 2018).

Coding Procedure

A coding scheme was created by three investigators and recorded in a document for reference. Two coders recorded the posts related to alcohol, coded individually based on the coding scheme, and came to a consensus to determine if any posts were inaccurate and should be coded differently. Data excel sheets were used to code data. The coding scheme dictated specific numbers for each variable response.

Coding Variables

Occurrence

An "alcohol related post" was determined to be any post visually displaying alcohol or mentioning alcohol use in the corresponding caption. Coders would identify how the alcohol was displayed and/or who was holding the alcohol (1:The main profile user, 2: tagged individuals, 3:

Both the user and tagged individuals, 4: untagged individuals in the background, 5: no one,

alcohol is present in the background, 6: an image of only alcohol, and 7: no alcohol in image).

The coders also identified whether the caption mentioned or insinuated alcohol use (1:yes, 2:no).

With the study being conducted using ECU related hashtags, and the primary subjects being

university aged students (18-24), we decided to code what type of alcohol was present in the

posts. Beer was the primary type of alcohol observed, which was coded with a 1. Other types

were coded as follows: 2: wine, 3: liquor, 4: mixed drinks 5: other, 6: none, and 7 being multiple

types of alcohol present.

Social Context

The overall context of the posts were recorded as well (whether they were 1:positive,

2:negative, or 3:neutral). Positive images were based on expressions of happiness or laughing,

negative being if disapproving looks were given or consequences of alcohol were displayed (i.e

someone passed out), and neutral context displayed people emotionless or disengaged. In

addition to the overall context of the post, the context of captions was coded as well (1:positive,

2:negative, 3:neutral, and 4: N/A if no comments were present).

Users

Given the social media platform used, Instagram, another variable recorded was the type

of account. The coders evaluated whether the account was personal (1) or business (2). Looking

further into which demographic is posting more, personal accounts were coded based on the

gender the account identified as (1:male, 2:female, 3:NA- business account). Business accounts

were further coded based on whether they were an alcohol-related business (2) or were not (1). Alcohol-related businesses were defined as any infrastructure that serves or sells alcohol (i.e. bar, club, restaurant) and non alcohol-related businesses were any that did not sell or serve alcohol (i.e. radio station, clothing store, etc.)

Reactions to Posts

Based on the studies that show individuals use social media as a way to connect, support, and often influence others, it was decided to code the number of likes and comments present on each post. The overall context of the comments were coded, as previously mentioned under Social Context subsection. These were the only two quantitative variables recorded.

Data Analysis

Using the Statistical Package for Social Sciences (SPSS) v25, descriptive statistics were computed to summarize sample characteristics, frequency statistics for context of posts, alcohol-related information for each post, and the type of Instagram account. Chi-square and t-test analyses were used to assess differences between year of posts (2018, 2019) and alcohol related information, and significance testing was conducted on these differences. Frequency tables are presented to summarize the sample characteristics.

Results

The entire sample of posts using all four hashtags between both the 2018 and 2019 samples included 2,726 total posts. After the inclusion criteria were employed, 256 posts were included in the sample for data analysis.

In regards to the main research question, whether the House Bill 389 directly affected the

percentage of alcohol related posts on Instagram, t-test analyses were used to assess significance.

Figure 1 indicates there were no significant differences

between alcohol-related posts from 2018 to 2019 ($t(5)= -0.11$,

$p= 0.914$).

Figure 1

Figure 2

Who is holding the alcohol?					
	Frequency	Percent	Valid Percent	Cumulative Percent	
Valid	User	36	14.1	14.1	14.1
	tagged individual	67	26.2	26.2	40.2
	Both user and tagged individuals	67	26.2	26.2	66.4
	untagged individuals in background	10	3.9	3.9	70.3
	no one, alcohol in background	36	14.1	14.1	84.4
	image of only alcohol	33	12.9	12.9	97.3
	no alcohol in image	7	2.7	2.7	100.0
	Total	256	100.0	100.0	

Figure 2 displays the valid percents of the occurrence of alcohol in the images and how it was

presented in the posts. The majority of posts either displayed tagged individuals holding alcohol

(26.2%) or both the user (owner of the account) and tagged individuals holding alcohol (26.2%).

Figure 3 (below) displays the frequency of corresponding captions that insinuate alcohol use.

The results indicated that the majority of alcohol related posts (images) did not have an

accompanying caption related to alcohol use (77.3%).

Does the caption insinuate alcohol use?					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	yes	58	22.7	22.7	22.7
	no	198	77.3	77.3	100.0
	Total	256	100.0	100.0	

Figure 3

Another variable tested and frequency table analyzed was the type of alcohol presented in the

posts. The analysis shows that the majority of alcohol in the images is beer, at roughly 85%.

Figure 4 (below) indicates the total number of posts that displayed each specific type of alcohol.

	What type of alcohol is being shown?							multiple types of alcohol
Count		beer	wine	liquor	mixed drinks	other	none	
Year 2018 or 2019	2018	103	1	5	9	1	4	2
	2019	116	3	3	5	0	2	2
Total		219	4	8	14	1	6	4

Figure 4

When analyzing the social context of certain variables, frequency statistics displayed in the tables below were used. Coders indicated whether the context of the post was positive, negative, or neutral. Figure 5 displays percentages related to context, and the overwhelming majority of posts were associated positively to alcohol (99.2%).

What is the overall context of the image?					
	Frequency	Percent	Valid Percent	Cumulative Percent	
Valid	positive	254	99.2	99.2	99.2
	negative	1	0.4	0.4	99.6
	neutral	1	0.4	0.4	100.0
	Total	256	100.0	100.0	

Figure 5

The variables tested to determine the user frequency showed significant results. A t-test indicated a significant difference between means of alcohol posts and non-alcohol posts with account type (business or personal, with business accounts having higher means of alcohol posts). ($t(2) = 4.7$, $p < .009$). Additionally, frequency statistics displayed the main gender posting alcohol related images are women, at 56.3%.

ANOVA					
How many comments are present for the image?					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	974.342	2	487.171	4.777	0.009
Within Groups	25801.017	253	101.980		
Total	26775.359	255			

Figure 6

Account type: Personal - male or female user		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	male	51	19.9	19.9	19.9
	female	144	56.3	56.3	76.2
	N/A (business)	61	23.8	23.8	100.0
	Total	256	100.0	100.0	

Figure 7

While this was not in the main scope of research, an interesting finding was that non-alcohol related businesses posted more alcohol images as compared with their counterparts. Figure 8 displays the percentage of non-alcohol related businesses were coded over double the amount that alcohol related businesses were.

Account type Business		Frequency	Percent	Valid Percent	Cumulative Percent	
Valid	non-alcohol related	45	17.6	17.6	17.6	
	alcohol related	16	6.3	6.3	23.8	
	N/A (personal)	195	76.2	76.2	100.0	
	Total	256	100.0	100.0		

Figure 8

Lastly, the variables associated with reactions to posts indicated significance. A chi-square test of independence showed that there was significant association between comments posted in 2018 and 2019 and account type (Figure 7), $X^2(2, N = 256) = 10.39$, $p = .006$. There were more comments that were non-alcohol related with business accounts than with personal/ individual accounts.

Chi-Square Tests			
	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	10.389[a]	2	0.006
Likelihood Ratio	10.696	2	0.005
Linear-by-Linear Association	5.708	1	0.017
N of Valid Cases	256		

Figure 9

Conclusion

The research performed in this study will allow us to better assess the perception of alcohol in a social setting and the demographics being influenced through modeling and perceived drinking norms via popular social media outlets. Some of the key findings in this study were: (i) using only the four hashtags listed, there was no significant increase in images related to alcohol after the introduction of House Bill 389, (ii) alcohol related posts, using our specific hashtags, indicated alcohol is portrayed in a positive context, and (iii) the primary accounts posting alcohol content are women on personal accounts as well as non-alcohol related businesses in which the primary alcohol present is beer. This research will help create a better understanding of the social norms associated with drinking and enables future discussions on ways to better prevent high risk alcohol behaviors and promote responsible drinking behaviors.

Acknowledgements

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