Internet Trolling Victimization: An Empirical Examination of Incidence in Undergraduate Business Students

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ABSTRACT

Internet trolling has been found to be a source of frustration and problematic for social media site users. Given that there have been few, if any, research studies examining the incidence and behavior of business undergraduates, the social media users and leaders of the future, this study was conducted. Findings suggest that students are active users and utilize a variety of social media providers. Importantly, gender and time spent at social media sites were found to be factors with regard to trolling volume victimization. Academic class, which could be used as a proxy for age, was not found to be significantly correlated with trolling. Results further imply that the undergraduate student troll victim is different than the general population victim.

Keywords: Internet troll, empirical study, undergraduate students
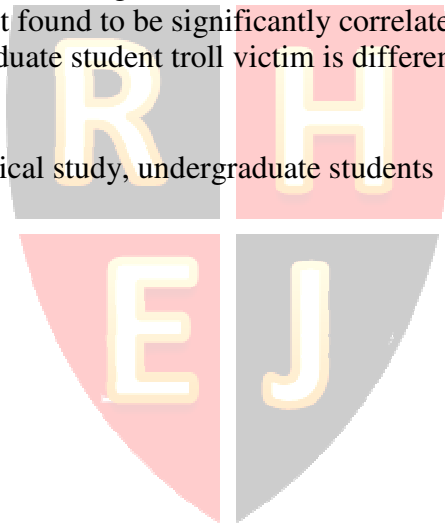
INTRODUCTION

Online trolling can be defined as "a repetitive, disruptive online deviant behavior by an individual toward other individuals or groups" (Fichman and Sanfilippo, 2016). This perpetrator, the Internet troll, can be described as a member of an online social community who deliberately tries to disrupt, attack, offend or generally cause trouble within the community by posting certain comments, photos, videos, or other form of online content (Moreau, 2017). Trolls have been categorized as insult trolls, persistent debate trolls, profanity trolls, all-caps trolls, show-off trolls, and so on. One of the newest and more disturbing facets of trolling is the emergence of revenge porn. In 2016, for example, a Data & Society Research Institute study found that one in 25 Americans were harassed through revenge porn (della Cava, 2017). The poll found that individuals age 15-29 are the most likely to report being threatened with the sharing of nude or nearly nude images, a 7% occurrence. For those age 30 and older, the incidence was 2%. Another troubling aspect of trolling of late is that bots are now being used to automate trolling or the spreading of opinion. Of the 314,000 accounts tweeted two weeks prior to the UK referendum on European membership, 15% were heavily or entirely automated.

Frustration with trolling is evident in the results of Google's Calico Labs Twitter vote poll that found that banning trolls was the most common response, 43%, as to how to tame abuse in online communities (2017). In terms of incidence, a Pew Research Center survey published in 2014 found that 70% of individuals age 18-24 that use the Internet had experienced harassment, with 26% of women that age range indicating that they had been stalked online (Stein, 2016). In addition, a 2015 survey of more than 1,500 individuals age 13-18 in the UK found that "24% had been targeted due to their gender, sexual orientation, race, religion, disability or transgender identity." In addition, "one in 25 said they were singled out for abuse all or most of the time." Moreover, the survey found "four in five adolescents had seen or heard online hate during the previous 12 months." The researcher defined "such abuse as offensive, mean or threatening, and either targeted directly at a person or group or generally shared online." Of note, "teenagers with disabilities and those from African, Caribbean, Asian, Middle Eastern and other minority ethnic groups were more likely to encounter cyberbullying" (Gani, 2016).

Moreover, a study of 134,000 offensive social media posts founds that 88% of these posts occur on Twitter (Fearn, 2017). According to NSPCC, a children's charity in the U.K., one in four youth have been through an upsetting experience on social media. Twitter general counsel, Vijaya Gadde, admitted that Twitter is too slow when it comes to tackling trolls.

As a result of these negative occurrences, social media providers have begun to implement changes. In 2010, Twitter introduced a new default profile picture for users that had not uploaded their photo to the social media platform (Williams, 2017). The avatar was an egg on a colored background, a reference to the site's familiar bird symbol. Over time, however, Internet trolls and other online abusers began to adopt the anonymity of the default egg in order to harass other users. In 2017, Twitter changed the default picture, a new default avatar that is a minimalist, gray outline of a genderless human head and torso. This effort was made to encourage new users to upload their own photo and distance themselves from the egg's negative history.

In February 2017, Twitter also began identifying individuals who have been banned for abusive behavior and created a safe search feature that removes tweets with potentially sensitive contents and tweets from blocked and muted accounts from search results (Ortutay and Kunzelman, 2017). Previously, in July 2016, an editor of the right-wing news site Breitbart

News was banned for participating in and inciting targeted abuse of individuals. GoFundMe removed a campaign because it violated the company's terms of service which includes rules against promoting hate, violence, harassment, discrimination, terrorism, or intolerance of any kind. And, Reddit banned a forum of white nationalists in February 2017 for a proliferation of personal and confidential information.

Fortunately, although there is no federal law in the U.S. prohibiting online harassment, 35 states and Washington, D.C. have enacted laws. In 2016, a jury awarded a Virginia man and his family a $1.4 million civil judgment, likely one of the largest penalties in an Internet trolling case in U.S. history (Jouvenal, 2016). The jury found an Internet troll liable for stalking, defamation, and intentionally inflicting emotional distress on the family during a period covering 2013 and 2014. The reign of terror even included a SWAT team being sent to the victim's home, false charges being filed against him, and he being accused online of molesting a girl.

In spite of these efforts, Internet trolling is increasingly problematic given both the volume and growth of social media users and accounts. In 2015, for example, Brandwatch, a marketing and media company, estimated that there were 2.3 billion active social media users, each with an average of 5.54 accounts (Smith, 2016). Moreover, in 2016, a new social media user was added every 12 seconds. And, Facebook claimed it added 500,000 new users each day and six new profiles every second.

Given that there have been few, if any, research studies examining the incidence and behavior of business undergraduates, the social media users and drivers of the future, the study was conducted. This empirical study examines several questions. How active are students in social media today and does activity vary by social media site? What is the level of student victimization by Internet trolls and how does this compare to the level of others that are trolled online? Finally, is there a relationship between factors such as gender, the time spent online at social media sites, and academic class with respect to the incidence of trolling? Results are important in better understanding the state of online trolling and determining if there is a need for further reactive and/or proactive efforts with respect to trolling.

PREVIOUS RESEARCH

Researchers have examined several facets related to Internet trolls. Studies have examined factors predicting perpetrators and victims, innate and situational factors, incident reporting, and student trolling of teachers.

In an effort to predict individuals' perpetration and "victimization in cyberbullying, a meta-analysis of 77 studies containing 418 primary effect sizes was conducted to exam the relative magnitude of demographic, individual, and contextual predictors." Study characteristics "(i.e., sample age, sample gender, study location, publication status, and publication year) were further analyzed as moderators." The meta-analysis demonstrated that the two strongest predictors "of cyberbullying perpetration were variables related to prior experience about bullying others offline and committing problem behaviors." In contrast, "prior offline victimization and long-term psychological problems were the strongest predictors of cyberbullying victimization." This analysis found that "the typical cyberbully is likely to be an older male; be involved in prior offline bullying behaviors; exhibit noticeable behavioral problems; perceive aggression as appropriate, profitable, or even morally justified; engage in frequent online activities; experience offline victimization; report a variety of internalizing symptoms; have anti-social personality such as narcissism, impulsivity, callous unemotional

traits, or other psychopathic traits; lack moral values, remorse, or empathy toward others; come from a family with high parental conflict or low parental supervision; be in a negative school climate; and have poor peer relationships, with a susceptibility to deviant or violent peers." On the other hand, "the typical cybervictim is one who is likely to be female; experience offline victimization; demonstrate high levels of depression, helplessness, stress, or loneliness; engage in frequent Internet activities; bully others offline; be involved in a series of problem behaviors; possess antisocial personality traits; have low levels of self-satisfaction, self-concept, or self-esteem; possess relatively positive beliefs or attitudes about aggression; live in a family with a negative environment; have less school commitment; and be noticeably rejected and isolated by peers" (Guo, 2016).

Another study explored "personality traits and social motivations associated with individuals who engage in online trolling, specifically on Facebook." Specifically, "the Dark Tetrad personality traits (i.e., narcissism, Machiavellianism, psychopathy, and sadism) and social reward (negative social potency) were examined for their predictive utility of trolling behaviours on Facebook." The researchers utilized a sample of 396 adults to complete "the Global Assessment of Facebook Trolling (GAFT), The Dirty Dozen, The Short Sadistic Impulse Scale, and The Social Rewards Questionnaire." They found that "trait psychopathy and sadism predict Facebook trolling behaviours; however, negative social potency had the strongest predictive utility." In addition, these results show that "individual trolling behaviour may be better explained by negative social reward motivation than negative personality traits" (Craker and March, 2016).

A similar study explored trolling on Location-Based Real-Time Dating applications (i.e., LBRTD apps) such as Tinder using an online sample of 357 Australians sourced from the community (March, et.al, 2017). Specifically, the role of participant's gender and of the personality traits of narcissism, Machiavellianism, psychopathy, sadism, and impulsivity was examined in predicting perpetration of trolling behavior on LBRTD apps. Although there were no gender differences, the traits of psychopathy, sadism, and dysfunctional impulsivity were significantly associated with trolling behavior. Additional moderation analysis revealed that dysfunctional impulsivity predicts perpetration of trolling, but only if the individual has medium or high levels of trait psychopathy.

Moreover, an experiment was performed with 667 subjects recruited via a crowdsourcing platform "to investigate whether trolling is an innate character flaw or if situational factors can influence people to act like trolls." First, subjects "were given a test, which was either very easy or very difficult." Second, their mood was assessed and "those who took the hard test were in a worse mood than those who took the easy one." Third, "subjects were asked to read an article and engage in the comment section." Finally, "they were instructed to leave at least one comment." Thirty-five percent "who completed the easy test and saw neutral posts then posted troll comments." The trolling percentage increased to 50% when "the subject either took the hard test or saw trolling comments." Moreover, "people exposed to the difficult test and the troll posts trolled approximately 68% of the time." Results suggest that "bad moods breed trolling and that trolling leads to more trolling" (Moscaritolo, 2017).

In terms of incident reporting, the Cybervictims Scale for Adolescents and Children and the Perceived School Climate Scale were applied to 3525 Portuguese students, 218 of whom were cybervictims attending 6th, 8th, and 11th grades (Veiga, et.al, 2017). Results demonstrated that even though adolescent cybervictims reported cybervictimization more to friends and parents, those who told teachers about their experience tended to report more positive

perceptions of their school climate. Moreover, gender and age did not have a significant role in the relationship between cybervictimization and perceived school climate.

Finally, the increasing incidence "in the cyberbullying of teachers in schools by their students" was explored. One aspect "is the posting of visual recordings of teachers and teacher–student interaction on websites such as YouTube." The study examined one illustrative example of bullying of a teacher in Brazil, Portugal and England. "The analysis of these three recordings indicates that we need to develop a new conceptual framework in order to understand the cyberbullying of teachers by students." Results suggest that "there appears to have been a radical shift in the way students can challenge teacher authority through the use of digital media." The researchers further suggest that "combating this phenomenon needs to be seen in the context of developing an anti-cyberbullying policy for the whole school" (Kyriacou and Zuin, 2016).

RESEARCH DESIGN

This study employs a survey research design. The research was conducted at a private, northeastern U.S. university. A Student Internet Troll instrument was developed by the authors and administered to undergraduate students enrolled in a School of Business course. The courses included a variety of subjects such as Business Information Systems, Introduction to Financial Accounting, Introduction to Managerial Accounting, Macroeconomics, and Business Policy. A convenience sample of class sections and faculty members was selected. The surveys were collected during the Fall 2016 and Spring 2017 academic semesters.

The survey instrument was utilized to collect student demographic data such as gender and academic class. In addition, the survey examined student Internet behavior regarding online social media sites. Students were asked to estimate the average number of minutes spent daily on fourteen social media sites and list any other social networking sites used by the student. Moreover, students were prompted to estimate the number of times that he/she had been trolled on each site during the past six months and the number of times that he/she had seen others trolled on each site during the past six months. Results were summarized by social media site and correlations were calculated to determine potential relationships between study factors (i.e., gender, academic class, and social media usage minutes) and the quantity of trolling incidences.

All surveys were anonymous and completed in an academic classroom. The response rate was 100 percent. Students were also informed that results would have no effect on their course grade.

RESULTS

A sample of 445 usable surveys was obtained. As indicated in Table 1 (Appendix), 64% of the respondents were male and 36% were female. These percentages were fairly consistent with the study university's School of Business student population.

The response rate by academic class was relatively equally distributed. As indicated in Table 2 (Appendix), 20% of respondents were freshmen, 29% were sophomores, 24% were juniors, and 27% were seniors.

Responses were first examined with regard to activity level per social media site. Although 14 sites were provided on the survey instrument, each respondent was prompted to list any "other" social media sites that he/she utilizes. The "other" sites named included WhatsApp, Barstool, Wall Street Oasis, Tinder, and VSCO. As indicated in Table 3 (Appendix), there are

five sites that are used by most students. These include Snapchat (92% of students), Instagram (88% of students), Facebook (80% of students), Twitter (73% of students), and YouTube (69% of students). LinkedIn and Pinterest are used by considerably less students, 29% and 20%, respectively. The remaining sites were not commonly used by undergraduates. The least utilized social media sites are Google+ (11% of students), Reddit (7% of students), Tumblr (4% of students), YikYak (2% of students), other (2% of students), 4chan (1% of students), 8chan (0% of students), and Voat (0% of students). In terms of usage, users of Snapchat spend the most minutes per day (45 minutes).   Moreover, users of Twitter spend 44 minutes per day, YouTube spend 43 minutes per day, Instagram spend 41 minutes per day, other spend 37 minutes per day, Facebook spend 34 minutes per day, Reddit spend 30 minutes per day, Google+ spend 30 minutes per day, 4chan spend 27 minutes per day, and Pinterest spend 26 minutes per day using the given social media site. The least active users include Tumblr (17 minutes), YikYak (13 minutes), LinkedIn (11 minutes), 8chan (no users), and Voat (no users). Overall, nearly all respondents indicated using at least one social media site with the average undergraduate spending 183 minutes (over 3 hours) per day on social media sites.

Relative to trolling, the highest percentage of site users being trolled includes YikYak (82% of users) and 4chan (67% of users). Lesser trolled sites include other (44% of users), Twitter (29% of users), Instagram (17% of users), Reddit (16% of users), Facebook (15% of users), and Snapchat (13% of users). The least trolled users include Google+ (6% of users), Tumblr (6% of users), YouTube (5% of users), LinkedIn (3% of users), and Pinterest (3% of users). All other users reported not being trolled. Finally, users of each site were prompted to estimate the incidence of others that they have seen being trolled on the site. The social media sites that other individuals were most actively trolled include 4chan (133 incidences per user), YikYak (109 incidences per user), Twitter (68 incidences per user), Reddit (68 incidences per user), other (67 incidences per user), Facebook (64 incidences per user), Tumblr (50 incidences per user), and Instagram (47 incidences per user). The least trolled include YouTube (32 incidences per user), Snapchat (24 incidences per user), Google+ (15 incidences per user), Pinterest (7 incidences per user), LinkedIn (2 incidences per user), 8chan (no incidences per user), and Voat (no incidences per user). Overall, 38% of students reported being trolled and respondents noticed 74 others being trolled at least once during the past six months.

Trolling volume was next examined to determine the degree of trolling during the past six months. As indicated in Table 4 (Appendix), with respect to those utilizing the given social media site, the largest troll quantity per user includes 4chan (33.3 per users), other (11.3 per user), and YikYak (10.7 per user). Lesser incidences include Twitter (1.9 per user), Facebook (1.3 per user), Instagram (1.0 per user), and Snapchat (1.0 per user). All other sites had incidences of less than one time per user. With respect to others being trolled on the given social media site, the largest troll quantity observed per user includes Twitter (111.6 per respondent), Reddit (90.5 per respondent), Facebook (45.6 per respondent), Instagram (41.6 per respondent), and 4chan (41.0 per respondent). The lesser trolled sites include YouTube (19.8 per respondent), Snapchat (19.5 per respondent), YikYak (19.1 per respondent), and other (18.3 per respondent). The least trolled sites include Tumblr (11.6 per respondent), Google+ (6.8 per respondent), Pinterest (1.1 per respondent), and LinkedIn (.1 per respondent). Next, the quantity of trolls per student trolled was calculated. For those trolled, the highest volume sites include 4chan (50.0 per victim), other (25.5 per victim), Pinterest (18.0 per victim), YikYak (13.1 per victim), YouTube (11.4 per victim), Facebook (9.0 per victim), Snapchat (7.7 per victim), Twitter (6.5 per victim), and Instagram (6.0 per victim). All other sites were less than five incidences per

victim. Overall, there were 8.2 trolls per student for users, 199.7 observed trolls per user, and 21.7 trolls for victims of social media sites during the past six months.

Finally, Spearman Rho correlations were calculated to determine if there are correlations between study factors (i.e., gender, academic class, and social media usage minutes) and the quantity of student trolls or the quantity of other trolls per user. As indicated in Table 5 (Appendix), gender had a statistically significant correlation (significant at the .01 level) to the quantity of trolls that one receives. In addition, user minutes spent using social media had a statistically significant correlation (significant at the .05 level) to the quantity of trolls with others. In other words, males were more likely to receive trolls and the more time spent on social media increased the likelihood of seeing others being trolled. There were no significant correlations with regard to user gender, academic class, or time spent on social media and trolling volume.

CONCLUSIONS AND FUTURE RESEARCH

Results demonstrate that in terms of social media use, Snapchat has become the most common choice for undergraduate business students. Snapchat is used by the highest percentage of students, 92%, and for the most minutes per day, 45 minutes. Although Twitter is used by less than three-quarters of the students, it ranks second in minutes at 44 minutes per day. The other most utilized sites are Instagram (86% of students, 41 minutes per day), Facebook (80% of students, 34 minutes per day), and YouTube (69% of students, 43 minutes per day). Interestingly, LinkedIn, the premier business social media site, is considerable less popular (29% of students) and less utilized (11 minutes per day). Overall, 99.6% of undergraduates indicate using social media with an average of 183 minutes (3+ hours) per day per student.

With regard to trolling, there is a wide range of occurrence. The highest percentage of students that are trolled utilize three sites, YikYak, Other, and 4chan with 82%, 44%, and 67%, respectively, of the student users trolled. These sites also had nearly the highest reported quantity of others that were trolled. However, it should be noted that only 2% of students reported using YikYak, 2% reported using other, and 1% reported using 4chan. In contrast, the more mainstream social media sites had much lower percentages of students that were trolled. Twitter had the highest at 29%. Only 17% were trolled on Instagram, 15% were trolled on Facebook, 13% were trolled on Snapchat, and 5% were trolled on YouTube. Students did, on the other hand, report seeing several others being trolled on these sites. Respondents noticed an average of 68 other individuals being trolled on Twitter, 64 individuals on Facebook, 47 individuals on Instagram, 32 individuals on YouTube, and 24 individuals on Snapchat. Overall, 38% of students indicate being trolled and noticing an average of 74 other individuals being trolled during the past six months.

An analysis of trolling quantity shows that, on average, a student is trolled more than one time per month (8.2 times per student during the past six months). In addition, each student reported seeing an average of 33 trolls per month (199.7 during the past six months) of others being trolled. When examining the quantity of trolls per student for only those trolled at the given web site, the average rises to nearly four trolling incidences per month per user. The largest number of trolls per person for only those trolled during the six-month period of the most commonly utilized sites includes YouTube (11.4 trolls), Facebook (9.0 trolls), Snapchat (7.7 trolls), Twitter (6.5 trolls), and Instagram (6.0 trolls). The largest number of trolls per person of others was Twitter (111.6 trolls).

Finally, results indicate that although academic class is not a factor, gender and online social media usage time each have a relationship with regard to trolling. Gender had a significant positive correlation (at the .01 level) to the volume of trolls per student. Minutes using social media had a significant positive correlation (at the .05 level) to the volume of others being trolled. Thus, males indicated a higher volume of personal trolls than females and the more minutes the user spent on social media, the more incidences of others being trolled were seen. There were, however, no other statistically significant correlations found in the analysis.

There are three important implications from the study. One finding is that gender and social media time are factors in trolling volume. Males reported receiving more trolls than females. These results are contrary to the Guo (2016) meta-analysis of 77 studies that found victims were likely to be female. It is possible that undergraduate business students may not have been in the Guo studies' sample pools. In addition, because this study did not prompt the respondent to indicate if he/she trolled others, it cannot be determined if the higher volume for males was in retaliation to trolls being sent by the males. Moreover, females could have underreported incidence because of the embarrassment of being harassed. Relative to social media time, although the more minutes spent online did significantly correlate to the increased troll volume of others being trolled, it was not correlated to the volume for the user. This suggests that students may be employing better online behavior than the general population that is being trolled. More time online would infer a greater incidence of personal trolling but this is not the case for the business student.

A second implication is that social media user age, at least with regard to university students, is not a factor with regard to trolling if academic class is utilized as a proxy for age. The study population is a traditional age student body with few non-traditional age students. Results indicate no significant correlation between academic class and any trolling volume. Thus, freshmen are as likely to be trolled or observe trolling as seniors. This suggests that chronological age and, possibly, maturity, may not be strong factors in victimization.

A third implication is that the undergraduate student troll victim is different than the general population victim. While the NSPCC study of 134,000 offensive social media posts found that 88% of these posts occur on Twitter (Fearn, 2017), this study found only 55% of the troll volume occurred on Twitter. Moreover, while the Pew Research Center survey (Stein, 2016) found that 70% of individuals age 18-24 that use the Internet had experienced harassment, this study found that 38%, about one-half as many, of students were trolled. However, even though students were less likely to be trolled, if they were trolled, it is problematic in that each user would receive an average of almost four trolls per month. These findings imply that university students are either underreporting incidence or being better educated with regard to proper social media behavior.

The limitations of this study are primarily a function of the sample, sample distribution, and type of research. The use of additional universities and more equal distribution among gender would increase the robustness of results. Another limitation relates to the self-reported nature of the survey. Future research is needed to further explore how gender affects trolling incidence and to explore which measures may be implemented in the education process to bring about more positive change in behavior and response to victimization.

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APPENDIX

TABLE 1
Gender Response Rate

	Total
Male	64%
Female	36%
Count	445

TABLE 2
Academic Class Response Rate

	Total
Freshmen	20%
Sophomore	29%
Junior	24%
Senior	27%

TABLE 3
Social Media Activity and Trolling Percentages

Social Media Site	Percent of Students	Minutes Per Day	Percent of Students Trolled	Number of Others Trolled
Snapchat	92%	45	13%	24
Instagram	86%	41	17%	47
Facebook	80%	34	15%	64
Twitter	73%	44	29%	68
YouTube	69%	43	5%	32
LinkedIn	29%	11	3%	2
Pinterest	20%	26	3%	7
Google+	11%	30	6%	15
Reddit	7%	30	16%	68
Tumblr	4%	17	6%	50
YikYak	2%	13	82%	109
Other	2%	37	44%	67
4chan	1%	27	67%	133
8chan	0%	0	0%	0
Voat	0%	0	0%	0
Overall	99.6%	183	38%	74

TABLE 4
Trolling Volume Per Student During Last 6 Months

Social Media Site	Quantity of Student Trolls For Those Utilizing Site	Quantity of Other Person Trolls	Quantity For Only Students That Have Been Trolled
Snapchat	1.0	19.5	7.7
Instagram	1.0	41.6	6.0
Facebook	1.3	45.6	9.0
Twitter	1.9	111.6	6.5
YouTube	.6	19.8	11.4
LinkedIn	.1	.1	3.0

Social Media Site	Quantity of Student Trolls For Those Utilizing Site	Quantity of Other Person Trolls	Quantity For Only Students That Have Been Trolled
Pinterest	.6	1.1	18.0
Google+	.3	6.8	4.0
Reddit	.5	90.5	3.4
Tumblr	0	11.6	0
YikYak	10.7	19.1	13.1
Other	11.3	18.3	25.5
4chan	33.3	41.0	50.0
8chan	0	0	0
Voat	0	0	0
Overall	8.2	199.7	21.7

TABLE 5
Spearman Rho Correlations Between Study Factors and Troll Volume Per Student

Study Factor	Students Trolled	Others Trolled
Gender	.146**	.030
Academic Class	.015	.076
Minutes Using Social Media	.082	.110*

* Correlation is significant at .05 level (2-tailed).
** Correlation is significant at .01 level (2-tailed).