Purpose of Social Networking Use and Victimisation:

Are there any differences between University Students and those not in HE?

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Abstract

Current literature widely reports successful uses of social media as a source of information, collaborative and learning tool for students in Higher Education. Although universities increasingly promote the use of Social Network Services (SNS) little is known about how students use them. Also the adverse effects of social media activity, such as cybercrime victimisation in HE, are under explored. Concerns over informal leisure use of SNS by students leading to cyber victimisation may help explain slow adoption of social media in education. This paper shows, however, that students use SNS in a similar way to those users who are not in education, with more that 60% using SNS for both socialising and gathering information. We find that students are less likely to be victims of cybercrime than non-students suggesting that SNS activity is less risky within the university lifespan. The implications of this study are significant for policy and practice for universities and educational authorities.

Keywords: Social networking; cybercrime; victimisation; adoption of technology; technology usage; online behaviour.

1. Introduction

To any University student the world before Facebook is hard to imagine. Social media has become second to none communication and collaboration medium for the young (Office of National Statistics, 2013). Its ease of use, straightforward interface and endless capabilities have earned it a deserved place in the current technological landscape. Being the default collaborative choice by students, it was only a matter of time until universities felt pressured or led by technology-inquisitive lecturers to put social technology into educational use (Moran, et al., 2011). Capabilities of social media are so vast that its applications in educational settings are difficult to enumerate. Yet, student body of social media users, parents and university staff alike are concerned about the dangers of information disclosure and cyber-threats, which users are exposed to via social technology.

Information vulnerabilities, threats and roles of benign and malicious agents in online data transactions have been explored in depths in e-commerce settings (Dhillon & Backhouse, 2001). Personal information privacy model has been used as a recognised approach to explaining information disclosure behaviour and criminal activity threatening privacy in cyberspace and includes agents in information sharing transactions, bioth benighn and malicious (Conger, et al., 2013). The nature of social media interactions presents a set of idiosyncratic challenges in education. Many online applications are specifically developed for academic use, such as Learning Management Systems, and restrict access to university resources to authorised users. On the contrary, social media applications are provided by third party and most students use their existing accounts for interactions at university, often forgetting to enforce privacy constraints. While accounts of academic applications of social media are emerging in recent publications (Baran, 2010; Moran et al., 2011; Benson & Morgan, 2014), studies suggesting solutions to privacy concerns in educational uses of social technologies are lacking. This paper aims to shed more light on this matter by investigating the why and how individuals use SNS and whether their usage patterns have consequences for possible victimisation. We also draw the comparison between those users who are currently enrolled at university and those who are not in Higher Education. To do this, we undertook a survey of social networking users to gain a better insight into the barriers, which are significant and prevent wider adoption of social technologies in education.

This paper has the following structure. Having discussed uses of social networks by students and instructors in universities, we draw readers' attention to the concerns of social technologies. Further, we explore Conger's (2013) PIP model and propose its extension for social media information flow in educational settings. We then describe our dataset, the online survey of active social media users, followed by the discussion of findings. We conclude the paper with an empirically tested model of student behaviour on social networks and discuss the implications for education institutions wishing to adopt social networks as a collaboration, communication and learning medium.

2. Literature review and hypotheses development

2.1 Student use of social networking

Social networking is a relatively a new phenomenon and opened unparalleled opportunities for individuals to engage online (Sharma & Crossler, 2014). These unprecedented levels of engagement include the use of social networking sites (SNS) in educational settings. But are students ready to equally embrace academic and social uses of social media? Do their preferences of collaborative tools for socialising and learning differ? Are social media applications for learning imposed onto students by instructors or are an organic extension of social networking into education? Recent studies investigating uses of social media by teaching faculty report multifaceted applications of the new technology in education. Academic staff actively integrate social elements in their teaching, as (Moran et al., 2011) show almost two-thirds of all teaching staff turned to social media in their class sessions, including assigning students "to read or view social media as part of course assignments, assigning students to comment on or post to social media sites" (Moran et al., 2011:11) . In another study by Roblyer et al. (2010:134) it was found that SNS have enabled students to collaborate with faculty, thus facilitating educational communications. Researchers concur that since social interactions are an integral part of education, social media is a useful tool to foster social exchange (Vollum, 2014).

Educational activities conducted on SNS vary depending on the nature of the SNS used by students. For example, Yahoo groups and wikis are used to discuss schoolwork while SNS capable of hosing video podcasts are being used for engagement, enhancing student attitudes and motivation (Andrews et al., 2010). SNS, such as Facebook, is easily accessible and easy to navigate and is used by students to ask questions related to their studies and for

interactive learning (Greenhow & Robelia, 2009; Polsgrove & Frimming, 2013). In a recent experimental study, Facebook was used as an instructional network to enhance mathematics education at undergraduate level and found that students actively participating in discussions via Facebook performed better and had higher satisfaction rates (GreGory et al., 2014). Many educational institutions have successfully integrated SNS to support students upon arrival on campus after admission and help them adjust to the new collage environment, get to know their peer and create a sense of belonging by promoting socialising by building a support network via SNS (Selwyn, 2007; Yu *et al*., 2010; DeAndrea *et al*., 2012). Others have used SNS such as Twitter to "give students a low-stress way to ask questions, for book discussions, send class and campus reminders, and organise study groups" (Junco *et al*., 2011: 4).

Even though the above evidence suggests that students effectively use social technologies for 'cyber-hangouts' enriching their learning (Howard *et al*., 2014:9), some argue that students shy away from using SNS for educational purposes and are not too keen on blurring the boundaries between informal socialising and academic learning (Roblyer et al., 2010; Baran, 2010). Madge et al. (2009) found that while undergraduate students generally use Facebook for socialising and sometimes for informal learning, they do not consider SNS such as Facebook formal learning. Similarly, Selwyn (2009) found that students use Facebook for informal, cultural learning but overall content related to education that is posted on social media is minor. There is a clear delineation between students' acceptance of social media as an instructional tool and socialising means. Hence, we hypothesise that:

H1: *Use of social media for learning and as a source for information is less favoured by students in comparison to informal social purposes.*

2. 2 Online Victimisation and Social media use: Why students make easy targets?

According to data from Pew Research Internet Project, 89% of social media users are between the ages of 18-29[1]. Another industry survey reveals that 96% of students with

[1] http://www.pewinternet.org/fact-sheets/social-networking-fact-sheet/. Further information about what percentage of the 18-29 group are students is not available for this research.

Internet access use social media and 59% of them use it for educational purposes[2]. However, given the increasing number of young adults using SNS, opponents of social media warn that SNS are 'not secure environments for young people and expose younger generation to cyberstalking and offensive contacts' (Tynes, 2007: 575).

Some researchers argue that SNS are distracting and students should not be encouraged to use them in the classroom (Bugeja, 2006). This brings about logistical issues such as bandwidth limitation on campus when more students use SNS at any one time some of which might get distracted and use SNS for entertainment purposes rather than educational (Bosch, 2009:192). There is also the concern regarding language barriers in using popular SNS such as Facebook and Twitter since English is the predominantly used language on such sites. Even though, page translation options are available in some instances, it is limited to few languages and the translations might not be highly accurate (Bosch, 2009).

Compared to traditional learning management systems, social networks provide a 'personal learning environment' and this creates a challenge when it comes to institutional and learner control (Dabbagh & Kitsantas, 2012: 2). In other words, in traditional systems, the educational institution, faculty and administration had more control over the system than the learners as oppose to social learning spaces where students can personalise and manage their learning activities (Valjataga et al., 2011; van Harmelen, 2006). Cain and Fink (2010) points out that there are legal and ethical repercussion in the absence of control over social learning environments. For example, issues of liability are a concern for faculty and administrators in situations where information is posted on SNS that are harmful or damaging (offensive or threatening posts) to students and others, especially when it is "virtually impossible to monitor all of the content" posted on SNS (Cain & Fink, 2010:1).

In addition to the above concerns, Cain and Fink (2010) point out several other legal issues such as copyright violations on social learning platforms, where students could plagiarise electronic information posted on these sites, defamation, libel, fraud, and identity theft. The lack of self-regulation and peer-pressure on SNS could influence negative behaviours such as Internet addiction (Facebook depression) (O'Keeffe & Clarke-Pearson, 2011), cyberbullying and harassment (Patchin & Hinduja, 2006), and concurrent sleep deprivation (Christakis & Moreno, 2009).

[2] http://www.mediabistro.com/alltwitter/schools-social-media-stats_b46620.

Online privacy is one of the key concerns in using SNS. Depending on the type of SNS used, users may have varying levels of control over their information privacy. For example, Facebook has controls in place to limit who can view a person's profile (friends, friends of friends etc.) (Tynes, 2007). However, Kosik (2007) found that students have little concerns about what they post on SNS and very few change their privacy settings (Govani & Pashley, 2006). Dwyer et al. (2007) found that trust is not essential in online interactions compared to face-to-face interactions, while Acquisti and Gross (2006) reveal that Facebook users are less concerned about privacy and personal information disclosure. In a 2009 study involving students using Facebook it was found that even though they disclose more information on Facebook than in general, control over information and privacy are important aspects to students (Christofides et al., 2009). Moreover, in recent years Universities have stepped up their IT awareness programmes, provide qualified IT support staff and are doing more to increase safety of social media use in HE. Also, peer -to-peer knowledge exchange of information security skills between students, although does not take a form of formal instruction, is a helpful way to bridge the gap of skills for safeguarding individual information privacy and preventing incidents of online harassment, etc. But are these approaches enough to prevent common types of online crime? We hypothesise that:

H2: *Students are less likely to become victims of cybercrime such as harassment and offensive content*

Hypothesis 1 and 2 link online behaviour, social media uses and victimisation, the comparison between university students and those not currently in HE will help shed some light on the effectiveness of University efforts to safeguard students and facilitate social media adoption for academic purposes.

3. Data and Method

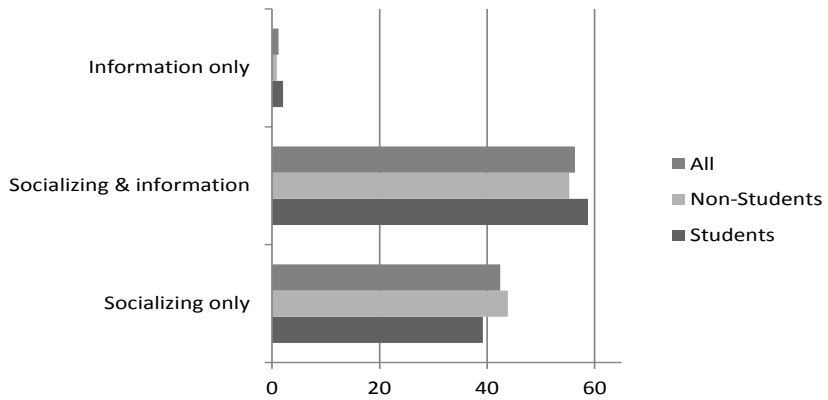
The research population for this study consisted of active online social media users including both students and non-students. Purposeful (non-probability) sampling or volunteer panels of online users are employed to collect our data. A web-based questionnaire was developed

using Qualtrics software, and then administered to the target sample through posting on social media (e.g. on popular SNS like Facebook, LinkedIn, Twitter, etc.) and through universities to increase the representativeness of our sample (see Bhutta, 2012). The survey was only accessible to either members of a particular group (e.g., academics having profiles on Method Space) or posted on personal websites that can only be accessed by contacts of the site owner (e.g. the researcher's Facebook, LinkedIn and Twitter pages). In the survey invitation, a criterion was imposed to eliminate any non-social media users who might come across the survey bypassing restrictions. The criteria specified that only those using social media sites are eligible to take part in the survey. Our sample consists of 514 individuals, which is in line with the sample size recommended by Krejcie & Morgan (1970) and Isaac & Michael (1981). From the 514 individuals, 150 were students (about 29% of our sample).

3.1 Purpose of SNS use

The survey asked respondents to indicate the purpose(s) of their use of SNSs. Most of the users reported that they mainly use SNS for keeping in touch with friends (93%), instant messaging (66%) and to seek information. When the sample is restricted to students, we find similar patterns in our data (86%, 69% and 60% respectively). Taking into consideration all answers provided by the users we create an order response variable (use_i) taking the value of 1 if SNS are used for social purposes only (42.45%), 2 if the SNS are for both social and information purposes (56.34%), and 3 if SNS are used for information purposes only (1.21%). Figure 1 shows the distribution between students and non-students. The raw data suggests trivial differences among the groups as figure 1 shows.

Figure 1. Purpose of SNS use by students and non-students.



We further conduct an ordered probit analysis (see Wooldridge, 2002) to formally test whether students are more likely to use SNS for socialising and non-academic purposes than non-students (*Hypothesis 1*). The ordered probit model for use_i can be derived from a latent variable model as follows:

$$use_i^* = b_1 Stud_i + b_2' X_i + u_i \quad (1)$$

where use_i^* represented the latent variable, $Stud_i$ takes the value of 1 if students and 0 otherwise, and X_i is a row vector of controls (e.g. gender, age, qualification).

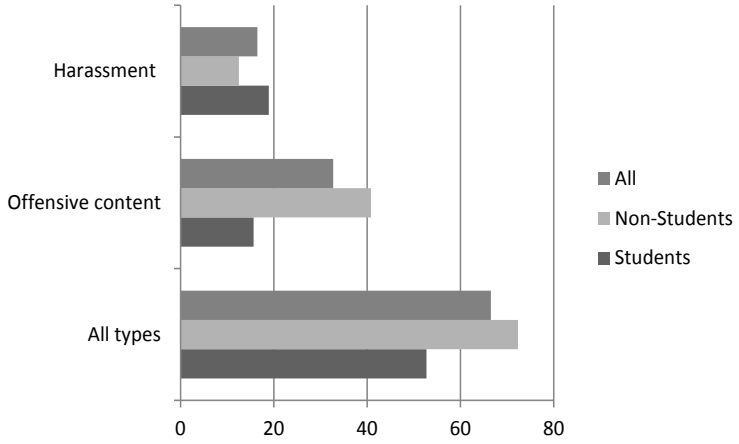
3.2 Victimisation

The survey asked respondents whether they had been victims of cybercrime, providing them with a number of options to describe the nature of victimisation. The options included 'I have been a victim of cyber-crime' such as 'Spam'; 'Fraud (e.g. bank fraud, identity theft)'; 'Offensive content'; 'Harassment (e.g. Cyber-stalking, cyber-bullying)' and 'never experience any forms of victimisation'. Hence, we can construct the dependent binary indicator variable ($vsns_i$), which takes the value of one if the individual has been victim of cybercrime (66.53%), and the value of zero if the individual has not experienced any form of victimisation (33.47%).[3] Studies show that young adults are more likely to fall victims of harassment and being targets of offensive content postings (Tynes, 2007). These forms of cyber-victimisation are also likely to leave lasting psychological damage to the victim. While the nature of spam and heightened attention to its awareness from e-commerce make it more recognisable for users, the effects and widespread of cyber harassment on SNS make it one of the most serious forms of victimisation. From the overall victimisation variable, we create two additional variables to capture particularly offensive content and harassment victimization only. [4] Figure 2 presents victimisation rates (%) by type of victimisation and educational status (i.e. still in education and non-students). The data suggests (see figure 2) that non-students are more likely to be victims of cybercrime.

[3] Data limitations, however, do not allow us to measure victimisation in terms of repetition and severity.

[4] Since most of users in our sample report being a victim of spam (55.38%) and only a small proportion of individuals report being a victim of more serious crimes such as offensive content (84 individuals) and harassment (34 individuals), we excluded from the sample other types of victimization and allow only non-victims to enter the base category. Thus, 32% reported being a victim of offensive content and 16% of harassment.

Figure 2. Online victimization between students and non-students.



We then define a latent variable, *von**, that represents the propensity of an individual to be a victim of cybercrime (i.e. takes the value of 1 if a victim of online crime and 0 otherwise). This drives the observed binary indicator of whether an individual has experienced victimisation through the following measurement equation:

$$von_i^* = a_1 Stud_i + a_2' X_i + v_i \quad (1)$$

$$von_i = \begin{cases} 1 \text{if } von_i^* > 0 \\ 0 \text{ otherwise} \end{cases} \quad (2)$$

where X_i is a row vector of explanatory variables (see Greene, 2000). To test our hypothesis 2, we estimate the above model for the whole sample but also for two sub-samples: those experienced only two forms of victimisation harassment and offensive content compared to those who have never being victim of cybercrime.

4. Empirical Findings

At the outset of the study we aimed to investigate the barriers to social media adoption in University as a new medium for collaborative learning and communication. We explored the purpose of uses for social media amongst university students and individuals outside of HE. As extant literature shows academic applications of social networks are on the rise (Benson & Morgan, 2014). Technology savvy instructors explore the new medium (e.g. Junco et al., 2011; Vallum, 2014; Yu et al., 2010) in search for a new level of student engagement with university and meet the student expectations of adopting popular technologies for

collaborative use. However, some studies draw our attention to students' disengagement and resentment when social networks are used for formal learning (Moran et al., 2009). Researchers warn that SNS adoption for academic purposes is hindered by the overwhelming preference of students to use SNS for socialising, and SNS use for academic purposes may suffer from distraction. While many studies of social media use to date (e.g. GreGory et al., 2014; Dabbagh & Kitsantas, 2012; Bosch, 2009; Selwyn, 2009 and many others) employ students as their sample, it was of interest to our study to draw the comparison between the use of social media by students at University and those not in HE. Our results are unexpected and important.

Table 1 presents the ordered probit and probit results. The results in the first column show that there are no differences in the purpose of use of SNS between those in higher education and those who left higher education. Hence, hypothesis 1 is not supported. The implications of our results are significant. We find that student use of social networks falls in line with other active users. This means that fears of students preferring social media for informal leisure activity are unsubstantiated. This opens up further opportunities for universities to integrate social media into the teaching and learning process and harvest the benefits of this new exciting and effective collaborative tool for enhancing instruction. With this insight we overturn earlier conclusions of studies from several years ago (e.g. Moran et al., 2009) providing a less favourable outlook on the educational potential of SNS. Students' perception of social technology is now mature enough to rationalise their activity between socialising and academic use of SNS.

[TABLE 1 GOES ABOUT HERE]

Another barrier to HE adoption of social technologies was focussed on the potential of student victimisation on social networking sites. Statistics suggests that the cybercrime offences on social media are on the rise (ONS, 2014). Naturally, Universities are concerned with issues surrounding privacy and well being of their students. Studies investing cyber bullying and information privacy breaches on SNS show undesirable consequences of victimisation on SNS (e.g. Patchin & Hinduja, 2006). Psychological consequences of such serious cyber offences as harassment and offensive content posting carry long lasting effects on youth (O'Keeffe & Clarke-Pearson, 2011). We investigated the position of students and non-students in terms of victimisation. Table 1 columns 2-4 we find that individuals who are

studying are less likely to be victim of cybercrime and specifically for serious types of online crime such as offensive content and harassment. The significance of this finding is twofold. Firstly, the conclusion that students' activity on social networks is safety-conscious and results in victimisation avoidance shows that students are better educated about safety online. The universities should be commended for stepping up the cyber safety awareness amongst students, expanding curriculum on social technology, offering qualified IT support and cyber security measures on campus. Secondly, peer-to-peer communication and heightened awareness of possible privacy breaches may play a part in making students more resilient towards cyber victimisation. Overall, the findings of this study are unexpected but reassuring. In the view of the study results, HE institutions should be encouraged to embrace the new social networking medium and harness opportunities for collaborative learning.

5. Conclusions

We address the concerns Universities are facing regarding social media usage by students for learning and collaboration. This paper uses a survey of SNS to examine potential differences in the purpose of use and victimization experience by university students and those who left higher education. The results show that there are no differences in the purpose of SNS between the groups, with both groups using SNS for both socialising ad information purposes. Importantly the results show that university students are less likely to be victims of cybercrime and specifically for serious online crimes, such as offensive content and harassment. This suggests that Universities are going in the right direction with the cyber security awareness programmes. Our conclusions suggest that those at universities are better off than those not in HE, they develop the appropriate skill set helping them avoid victimisation. Furthermore, the myth that students mostly use social networks to draw hedonistic and social values (Yang & Lin , 2014), i.e. for informal socialising, should not deter academics from adopting social technologies for learning and teaching. Our study shows that students are open to academic use of social technologies and universities should encourage their staff to explore new social pedagogical opportunities, including collaborative learning.

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Table 1. Ordered probit and probit results.

Model:	Ordered probit		Probit		Probit		Probit	
Dep. Variable:	use_i		von_i (total)		von_i (offensive content)		von_i (harassment)	
	Coeff.	Std. error	Coeff.	Std. error	Coeff.	Std. error	Coeff.	Std. error
Students	0.043	0.147	-0.235**	0.597	-0.267**	0.064	-0.136*	0.054
Controls	yes		Yes		yes		yes	
cut point_1	-0.614	0.384						
cut point_2	1.897	0.407						
Log likelihood	-360.735		-307.295		-152.29		-86.343	
Obs.	497		502		257		203	

**Significant at the 1% level. *Significant at the 5% level. Robust standard errors are reported.
use_i: purpose of SNS use (1: SNS are used for social purposes only; 2: SNS are for both social and information purposes; 3: SNS are used for information purposes only).
von_i: 1 if a victim of online crime and 0 otherwise.