

Academics' Intention to Adopt SNS for Engagement Within Academia

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Abstract: Although Social Networking Sites (SNS) have become popular among scholars as tools for engagement within academia, there is still a need to examine the motives behind academics' intentions to adopt SNS. This study proposes and tests a research model based on the Decomposed Theory of Planned Behaviour and Gratifications Theory with a sample of 370 academics around the world in order to address the objective set. Our findings suggest that while attitude and perceived behavioural control are the main drivers of academics' intentions to adopt SNS for engagement, the effect of social norms on intentions is not significant. In addition, networking needs, perceived usefulness, image, and perceived reciprocity affect attitude, while self-efficacy affects perceived behavioural control. Implications for SNS providers and universities that want to promote and encourage online engagement within their faculties are discussed.

1 INTRODUCTION

Online or internet technologies have long been established as communication and collaboration tools in academia (Veletsianos and Kimmons, 2012). More specifically, when it comes to networking and information sharing, a specific type of online technology has prevailed over the past few years: Social Networking Sites (SNS). SNS have been defined as “*web-based services that allow individuals to (1) construct a public or semi-public profile within a bounded system, (2) articulate a list of other users with whom they share a connection, and (3) view and traverse their list of connections and those made by others within the system*” (Boyd and Ellison, 2007). Although many of them have not been created for professional purposes, research has shown that scholars employ them as professional tools that can be used beyond instructional purposes (Veletsianos, 2012). SNS can facilitate the creation of social capital in academia (Madhusudhan, 2012; Richter, 2011) and make Networked Participatory Scholarship feasible, which is “*the practice of scholars' use of participatory technologies and online social networks to share, reflect upon, critique, improve, validate, and further their scholarship*” (Veletsianos and Kimmons, 2012). Most importantly, SNS can help both academics and institutions increase community outreach, and facilitate their efforts to

create impact on society and their effectiveness in accomplishing their goals (Forkosh-Baruch and Hershkovitz, 2012; Veletsianos and Kimmons, 2013).

Due to the significant benefits that SNS can potentially offer in an academic context, scholars have begun to examine the use of SNS for academic purposes more systematically (e.g. Gruzd, Staves, & Wilk, 2012; Veletsianos and Kimmons, 2012). However, so far research has focused exclusively on answering “how” SNS can change academic practice and “what” the academics' usage patterns are (Forkosh-Baruch and Hershkovitz, 2012; Madhusudhan, 2012; Van Noorden, 2014; Veletsianos, 2012; Veletsianos and Kimmons, 2012; Veletsianos and Kimmons, 2013). Our work builds on this emerging body of research, extending it by focusing on “why” scholars participate in SNS. To the best of our knowledge this is the first scholarly article that attempts to understand the motivating factors that drive academics to adopt SNS by following a quantitative approach. Related literature has been of an exploratory nature so far, using qualitative approaches (Gruzd, Staves, & Wilk, 2012; Lupton, 2014). In addition, current research is based entirely upon the views of the actual users of SNS, ignoring the attitudes of a great number of academics that do not use SNS. Based on the above, the overall objective of this paper is to study the academic use of SNS for engagement, taking into consideration both

users and non-users of SNS. In order to address our objective, we synthesise and apply the Decomposed Theory of Planned Behaviour (Decomposed TPB) and Uses and Gratifications Theory, proposing a conceptual model that aims to determine the factors that affect academics' intention to use SNS in order to disseminate their research and engage with their colleagues.

This paper is organised in the following way: Firstly, we review the related literature and build our research model. Then, we present our methodology and the results of our data analysis. Discussion of the results follows and the paper concludes with a summary of our results and their implications, the limitations of our study and directions for future research.

2 LITERATURE REVIEW

2.1 Theoretical Framework

The Decomposed TPB is an alternative version of the TPB model proposed by Ajzen (1991). According to the TPB model, human behaviour is affected by three factors: a) attitude towards behaviour, b) subjective or social norm, which is the perceived social pressure, and c) perceived behavioural control, which is "*the perceived ease or difficulty of performing the behaviour*". These three factors lead to the development of behavioural intention (Ajzen, 2002b). In the Decomposed TPB, the three factors are analysed further by taking apart the various dimensions that comprise them. Consequently, the Decomposed TPB provides a more holistic understanding of behavioural intentions, since the analysis of the factors renders the relationships among them clearer and easier to understand and interpret (Taylor and Todd, 1995).

While the Decomposed TPB is a suitable model for examining Information Technology (IT) usage (Taylor and Todd, 1995), it is not specialised on new media, such as SNS. Hence, the Uses and Gratifications Theory, which is considered more appropriate for understanding the uses of new media by individuals (Foregger, 2008), is also adopted. The theory sheds light on how individuals use communications among other resources in order to meet their needs and accomplish their goals. It is based on five basic assumptions: a) the audience is conceived of as active, b) the audience takes a great deal of initiative in linking "need gratification" and media choice, c) media compete with other sources of need satisfaction, d) as far as methodology is

concerned, many of the goals related to mass media use can be derived from data provided by the audience itself, and e) judging the cultural significance of mass communication should be avoided while audience orientations are separately explored (Katz et al., 1973).

Based on the Decomposed TPB (Taylor and Todd, 1995) and Uses and Gratifications Theory (Katz et al., 1973), we propose a research model that investigates how academics' intention to use SNS in order to engage with their peers and create impact within academia is formed. The section that follows examines the various factors that may affect attitude towards behaviour, social norms, perceived behaviour control and lastly intention.

2.2 Research Model and Development of Hypotheses

Self- Promotion and Image: One of the needs related to the use of media, as proposed by the Uses and Gratifications Theory, is the need to gain insights into one's personal identity (Flanagin and Metzger, 2001). Web sites are regularly used for implementing impression management strategies (i.e. strategies that aim to control information about a person, an object, an entity or idea) (Connolly-Ahern and Broadway, 2007). Participation in online communities has also been connected with self- interest motives, like seeking to enhance one's reputation (Faraj and Johnson, 2010). In the academic context, blogs are often used as tools for sharing thoughts about academic work conditions and policies and even promoting one's expertise by providing advice (Mewburn and Thomson, 2013), activities that eventually result in the creation of a virtual academic identity. Likewise, SNS have been found to be used by academics as tools for forming digital identity and engaging in impression management (Veletsianos, 2012). Many academics seem to use social media in order to increase the visibility of their research and discuss their ideas with their colleagues (Lupton, 2014; Menendez, Angeli, & Menestrina, 2012). We suggest that academics' need for self-promotion, which is the manifestation of one's abilities or accomplishments in order to be seen as competent by others (Bolino and Turnley, 1999), and enhancement of professional identity affect their attitude towards using online technologies for engagement in a positive way.

H1. The motive of self- promotion positively affects academics' attitude towards using SNS for academic engagement.

H2. The motive of maintaining a positive image

positively affects academics' attitude towards using SNS for academic engagement.

Information Sharing and Seeking: Knowledge management, including information seeking and sharing is a common motive for using online services. According to Papacharissi and Rubin (2000), information seeking is the most salient use of the Internet. This is especially true for virtual communities, with online users stating that the main reason they visit them is the opportunity to exchange information (Ridings and Gefen, 2004). A more recent study has found that information seeking is a motive for using SNS too, as users regard social relationships as useful sources for information (Kim et al., 2011). This is in agreement with previous findings suggesting that information seeking is one of the four gratifications derived from using SNS (Ku, Chu, & Tseng, 2013). Interpersonal utility, which takes the form of information sharing among peers, is also considered as a motive for Internet use (Papacharissi and Rubin, 2000). The use of SNS for information dissemination seems to be the case in academia, too (Lupton, 2014; Menendez et al., 2012). More specifically, many academics use SNS in order to keep in touch with new developments and events and provide access to new or unpublished articles in their research field (Lupton, 2014). Therefore, we propose:

H3. The motive of information sharing positively affects academics' attitude towards using SNS for academic engagement.

H4. The motive of information seeking positively affects academics' attitude towards using SNS for academic engagement.

Networking: Studies about the use of online communities have shown that many of the ways that people use to communicate during face-to-face interactions are replicated in online environments, with online members seeking social support or friendships by joining an online community (Maloney-Krichmar & Preece, 2005; Ridings and Gefen, 2004). Not surprisingly, one of the main uses of SNS is networking in the form of maintaining old ties and creating new ones with peers that share the same interests (Foregger, 2008; Kim et al., 2011; Ku et al., 2013). Academics also use SNS for connecting and establishing networks and sometimes they even use SNS as platforms for multi-disciplinary collaborations (Gruzd et al., 2012; Jung and Wei, 2011; Lupton, 2014). We expect that:

H5. The motive of maintaining old contacts positively affects academics' attitude towards using SNS for academic engagement.

H6. The motive of creating new contacts positively

affects academics' attitude towards using SNS for academic engagement.

Perceived Usefulness: Perceived usefulness has been defined as “*the degree to which a person believes that using a particular system would enhance his or her job performance*” (Davis, 1989). According to Taylor and Todd (1995), who tested the predictive power of the Decomposed TPB, perceived usefulness is significantly related to attitude. Research that examines participation in virtual communities (Lin, 2006) has also found that the path from perceived usefulness to attitude is significant. Online tools are often considered useful by scholars for organising their work and increasing their efficiency (Lupton, 2014). The above lead us to the following hypothesis:

H7. Perceived usefulness of SNS positively affects academics' attitude towards using SNS for academic engagement.

Perceived Trust: In this study, perceived trust refers to the trust an individual has in the benevolence and integrity of other online users (Lin, 2006). Trust has been considered as a factor influencing participation in virtual communities and social interactions that take place in them (Chiu et al., 2006). Lin (2006) found that perceived trust is one of the determinants of member intentions to participate in virtual communities. In fact, the prosperity of an online community is based on members' sense of trust that the other members will treat them with respect and care (Maloney-Krichmar and Preece, 2005). Moreover, trust has been found to play an important role in using SNS for online political participation. In the study of Himelboim et al. (2012), people who reported trusting others were more likely to use SNS for political interaction and search of political information. Absence of trust could discourage participation in SNS, especially when academics are concerned about being vulnerable to various types of attack online, including outright aggression, hate speech or harassment (Lupton, 2014). For these reasons we propose that:

H8. Perceived trust among SNS members positively affects academics' attitude towards using SNS for academic engagement.

Perceived Reciprocity: Reciprocity is a “give and take” exchange relationship that can appear in online environments, with the users helping each other and rewarding kind actions. Chiu et al. (2006) have found that there is a positive and significant relationship between reciprocity and the quantity of knowledge sharing in virtual communities. Likewise, Jeon et al. (2011) have found that reciprocity has a positive effect on members' attitudes toward knowledge sharing in communities of practice. Long-

lasting sustainable online communities are characterised by strong group norms of support and reciprocity that make even externally driven governance unnecessary (Faraj and Johnson, 2010; Maloney-Krichmar and Preece, 2005). Giving and receiving support is one of the perceived benefits academics may gain by joining SNS (Lupton, 2014). We postulate that:

H9. Perceived reciprocity in SNS positively affects academics' attitude towards using SNS for academic engagement.

Peer and External Influence: As the Decomposed TPB suggests, social norms are affected by peer influence, which takes the form of encouragement or opposition towards using the IT in question (Taylor and Todd, 1995). Hsu and Chiu (2004) have added an additional factor, namely "external influence", which is the influence by mass media, experts and any other non-personal information that could affect individuals' considerations about performing the behaviour. The research of Bhattacharjee (2000) confirms that external influence is an important determinant of social norms in IT related contexts. Academics seem to take into consideration their colleagues' opinion about SNS, even if these opinions come from academics outside their home organisation or from a different discipline (Gruzd et al., 2012). Based on the above, the following hypotheses are put forward:

H10. Peer influence positively affects the social norms of academics.

H11. External influence positively affects the social norms of academics.

Privacy Control: Privacy control involves the ability of academics to control information about themselves and their research in online environments. For example, as far as SNS are concerned, privacy control could be influenced by the privacy policy of SNS, the awareness that information is being collected, the voluntary character of the information submission, and the openness of information usage by the SNS (Xu et al., 2013). So far, privacy control has been associated with the alleviation of privacy concerns in SNS (Xu et al., 2013) and Internet use (Dinev and Hart, 2003). In the case of academics, these concerns are about privacy in general, inability to control the content posted on social media and copyright issues (Gruzd et al., 2012; Lupton, 2014). Ajzen (2002b) has introduced the general notion of controllability as the second factor that, along with self-efficacy, comprises the perceived behavioural control in the TPB model. We hypothesise that:

H12. Privacy control in SNS positively affects the perceived behavioural control of academics.

Self-efficacy: In the context of online technologies, self-efficacy refers to users' beliefs in their capabilities to use online technologies. Lack of technological proficiency can be an important barrier to knowledge sharing in online communities (Ardichvili, 2008). The Decomposed TPB suggests that self-efficacy is one of the determinants of perceived behavioural control (Taylor and Todd, 1995). This notion is also supported by research in the e-commerce field that found that self-efficacy influences perceived behavioural control significantly (Hung et al., 2003). Although academics are sufficiently technologically competent since they have to use the Internet in their academic practice (e.g. getting access to academic journals, submitting manuscripts through journals' online systems etc.), they still may feel that they have difficulties in managing personal and professional information when they use new online tools like SNS (Gruzd et al., 2012). We therefore expect that:

H13. Self-efficacy related to the use of SNS positively affects the perceived behavioural control of academics.

Attitude, Social Norms and Perceived Behaviour Control: According to the Decomposed TPB (Taylor and Todd, 1995) and the original TPB (Ajzen, 1991), behaviour is a direct function of behavioural intention. One of the main factors that affects behavioural intention according to Ajzen (1991) is the attitude towards behaviour, or in other words, whether a person is in favour of or against the behaviour in question. Research on social networking has shown that attitude toward social networking is positively associated with intention to use social networking (Peslak et al., 2011). Similarly, social (or subjective) norms, which is the second factor that affects behavioural intention in TPB, is found to be positively correlated to intention in an SNS context (Peslak et al., 2011). Finally, perceived behavioural control has also been found to have a positive relationship with intention in a similar context, that of participating in virtual communities (Lin, 2006). Based on the above, the following hypotheses are formulated:

H14. Attitude of academics towards using SNS for academic engagement positively affects intention to use SNS for this purpose.

H15. Social norms of academics related to using SNS for academic engagement positively affect intention to use SNS for this purpose.

H16. Perceived behavioural control of academics related to using SNS for academic engagement positively affects intention to use SNS for this purpose.

3 METHODOLOGY

For the purposes of the study a purposeful sample that covers academics (including doctoral students) from different disciplines, career stages and countries was employed. In order to achieve this we used different sampling techniques: a) we distributed the survey's link via social networking sites, by posting it on groups with an academic focus and using our personal profiles on Twitter, Academia.edu etc. b) we created a random sample of 3000 academics and we sent the survey's link through email invitations. Since there is no list of academics around the world, we chose universities at random from the list of universities around the world provided by Webometrics (www.webometrics.info) and we retrieved contact information about random academics from universities' webpages. A total of 711 respondents started the survey. After discarding the incomplete responses and outliers, the remaining 370 valid responses were used for our analysis. Table 1 shows the profiles of the participants.

The online questionnaire that was used in the study was constructed by following the main

premises of the two main theories suggested (Ajzen, 2002a; Francis et al., 2004; Katz et al., 1973). Table 2 presents the sources from which items were adapted.

4 ANALYSIS AND RESULTS

4.1 Reliability and Validity

We ran both Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA) in order to assess the construct reliability and validity. The Kaiser–Meyer–Olkin (KMO) and principal component factor analysis were conducted to examine the adequacy of the study sample and the validity of the study instrument, respectively. After removing some items due to poor loadings or failure to load with the expected factor, we found that the value of KMO was 0.943 and all the items loaded on each distinct factor and explained 83.49% of the total variance. The reliability of the scales was also tested and the Cronbach's alphas of all scales ranged between 0.741 and 0.965 (Table 2), indicating very good

Table 1: Sample Demographics (N=370).

	Percent		Percent
Age		Area	
18 - 24	0.8	Europe	76.1
25 - 34	28.6	America	10.3
35 - 44	33.8	Asia	6.5
45 - 54	19.5	Australia/Oceania	6.8
55 - 64	14.6	Africa	0.3
Current Post		Discipline Group	
PhD student	17.5	STEM	24.6
Post Doc/Research Associate	8.1	Humanities	9.7
Lecturer	21.9	Social Sciences	58.1
Senior Lecturer/Assistant Prof.	27.6	Multidisciplinary	7.6
Reader/Associate Prof./Prof.	24.9	Gender	
Experience		Male	54.6
1 - 5	15.5	Female	45.4
6 - 10	30.5	SNS User	
11 - 20	35.1	Yes	82.2
21 - 30	12.1	No	17.8
31 and over	6.8	Engage via SNS	60.0
		Not engaging via SNS	40.0

Table 2: Cronbach's a.

Variable	Cronbach's a	Variable	Cronbach's a
Intention (Ajzen 2002b; Lin 2006)	0.965	Perc. Usefulness (Lin 2006)	0.939
Attitude (Peslak et al. 2011)	0.942	Image (Moore and Benbasat 1991)	0.937
Subj. Norms (Lin 2006; Taylor and Todd 1995)	0.943	Trust (Chiu et al. 2006)	0.917
PBC (Lin 2006; Taylor and Todd 1995)	0.741	Peer Influence(Taylor and Todd 1995)	0.945
Privacy Control (Xu et al. 2013)	0.930	External Influence(Hsu and Chiu 2004)	0.902
Old Ties (Foregger 2008)	0.896	Reciprocity (Chiu et al. 2006)	0.886
New Contacts (Kim et al. 2011)	0.911	Self-Efficacy (Lin 2006)	0.910
Info Seek (Kim et al. 2011)	0.918	Self-Promotion(Bolino and Turnley 1999)	0.925
Info Share (Papacharissi and Rubin 2000)	0.804		

reliability according to Fornell and Larcker (1981).

We further tested construct reliability and validity by conducting CFA using the AMOS software package. As can be seen in Figure 1, all the constructs have Composite Reliabilities (CR) above the recommended value of 0.70 and the Average Variance Extracted exceeds the threshold of 0.50 (Hair et al. 2014) and therefore reliability and convergent validity have been established. In addition, the square root of AVE is greater than inter-construct correlations for every construct; thus, there is discriminant validity among them.

According to Hair et al. (2014), when the number of observations is above 250 and the model contains more than 30 observed variables, significant p-values are expected for χ^2 and a good model fit has been established when CFI is above 0.90, SRMR is 0.08 or less and RMSEA is less than 0.07. Our measurement model meets all the above thresholds ($\chi^2/df = 1.683$, CFI = 0.95, SRMR = 0.0517, RMSEA = 0.043), demonstrating a good model fit.

4.2 Structural Model

After testing our full hybrid model ($\chi^2/df=1.794$, CFI = 0.94, SRMR = 0.0714, RMSEA = 0.046), we obtained the results that are presented in Figure 2.

According to the results, maintaining old contacts ($\beta = 0.180$, $p < 0.01$), creating new contacts ($\beta = 0.137$, $p < 0.1$), perceived usefulness ($\beta = 0.518$, $p < 0.01$), image ($\beta = 0.117$, $p < 0.05$), and reciprocity ($\beta = 0.142$, $p < 0.01$) had a positive effect on attitude towards using SNS for academic engagement and therefore H5, H6, H7, H2 and H9 were supported. Self-promotion, on the other hand, had a slightly negative effect ($\beta = -0.073$, $p < 0.1$) on attitude and thus H1 was rejected. Information seeking, information sharing and perceived trust had non-significant effects on attitude and therefore H4, H3 and H8 were rejected as well. Peer influence ($\beta = 0.485$, $p < 0.01$) and external influence ($\beta = 0.144$, $p < 0.05$) had positive effects on social norms, and thereby H10 and H11 were supported. While self-efficacy ($\beta = 0.747$, $p < 0.01$) had a significant positive effect on perceived behaviour control, the effect of privacy control ($\beta = -0.078$, $p < 0.1$) was slightly negative and therefore only H13 was supported, whereas H12 was rejected. Finally, H14 and H16 were supported as attitude ($\beta = 0.553$, $p < 0.01$) and perceived behaviour control ($\beta = 0.338$, $p < 0.01$) affected intention to use SNS for academic engagement positively. H15, however, was rejected as the effect of social norms on intention was not significant.

5 DISCUSSION

The aim of this study is to understand the factors that motivate academics to use SNS in order to engage with their peers and augment the impact of their research. Ten out of the sixteen hypotheses were supported based on the data analysis. Not surprisingly, attitude towards SNS use for engagement was found to have a strong and significant effect on the intention of academics to use such platforms for professional purposes. Similarly, perceived behaviour control of SNS use affects the intention to use them positively, a finding that is in line with the expectations of TPB. In addition, there were high levels of explained variance in these three constructs ($R_I^2 = 0.610$, $R_A^2 = 0.667$ and $R_{PBC}^2 = 0.533$). Social norms, on the other hand, do not have any significant effect on intention. This is not completely unexpected. Lin (2006), who looked into the intention to participate in virtual communities, found that social norms do not influence behavioural intention. In addition, according to Taylor and Todd (1995), it is not uncommon for studies using TAM and TPB theories to find no significant influence of social norms on behavioural intention. In fact, social norms have been found to be more influential in organisational settings and when respondents have little experience with the technology under examination. According to the demographics of our sample the vast majority of the respondents already use SNS for various reasons (82.2%), so they cannot be considered as inexperienced users.

Another interesting finding is that the effects of information sharing and information seeking on attitude are not significant. A possible explanation is that academics, being used to seeking and sharing information through more formal and reliable sources, such as journals and books, do not consider SNS as potential channels for information exchange, and therefore such motives do not affect their attitudes towards using SNS for engagement. Concerns about lack of credibility, the quality of posted content and copyright issues, which have been expressed in the study of Lupton (2014) regarding SNS use by scholars, could explain the reluctance of academics to consider SNS as important sources of academic information. This could also explain the non-significant effect of perceived trust on attitude. If academics believe that SNS are not appropriate environments for exchanging academic information, trust should not be of such importance since the risks associated with the concerns discussed above are not present. Another potential explanation could be that academics already know many of their peers in their

	CR	AVE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
InfoSeek	0.920	0.744	0.862																
Attitude	0.943	0.768	0.628	0.876															
SocialNorm	0.944	0.893	0.521	0.498	0.945														
PBC	0.772	0.638	0.577	0.733	0.466	0.799													
OldTies	0.898	0.640	0.567	0.582	0.411	0.556	0.800												
NewContac	0.912	0.776	0.781	0.646	0.460	0.551	0.617	0.881											
Usefulness	0.941	0.842	0.748	0.771	0.499	0.684	0.582	0.711	0.917										
Image	0.932	0.735	0.520	0.521	0.530	0.417	0.365	0.492	0.547	0.857									
SelfPromo	0.923	0.708	0.418	0.350	0.331	0.366	0.416	0.492	0.443	0.403	0.842								
Reciprocity	0.886	0.796	0.483	0.537	0.430	0.497	0.357	0.499	0.560	0.473	0.316	0.892							
Trust	0.914	0.682	0.343	0.320	0.310	0.261	0.316	0.368	0.343	0.484	0.272	0.544	0.826						
PeerInfluer	0.945	0.896	0.380	0.281	0.563	0.368	0.289	0.329	0.408	0.515	0.288	0.440	0.309	0.947					
ExternalInfl	0.905	0.706	0.396	0.282	0.412	0.357	0.303	0.362	0.370	0.500	0.232	0.489	0.427	0.584	0.840				
PrivacyCntr	0.927	0.761	0.180	0.208	0.216	0.126	0.230	0.243	0.193	0.199	0.156	0.207	0.440	0.145	0.279	0.873			
SelfEfficacy	0.896	0.684	0.588	0.677	0.393	0.676	0.494	0.576	0.695	0.473	0.394	0.721	0.461	0.411	0.400	0.266	0.827		
Intention	0.967	0.908	0.534	0.764	0.439	0.709	0.527	0.609	0.686	0.437	0.379	0.498	0.295	0.304	0.284	0.132	0.608	0.953	
InfoShare	0.810	0.682	0.820	0.636	0.421	0.513	0.568	0.751	0.740	0.488	0.382	0.509	0.391	0.350	0.362	0.158	0.620	0.518	0.826

Figure 1: Construct Correlation Matrix (Square root of AVE on the diagonal).

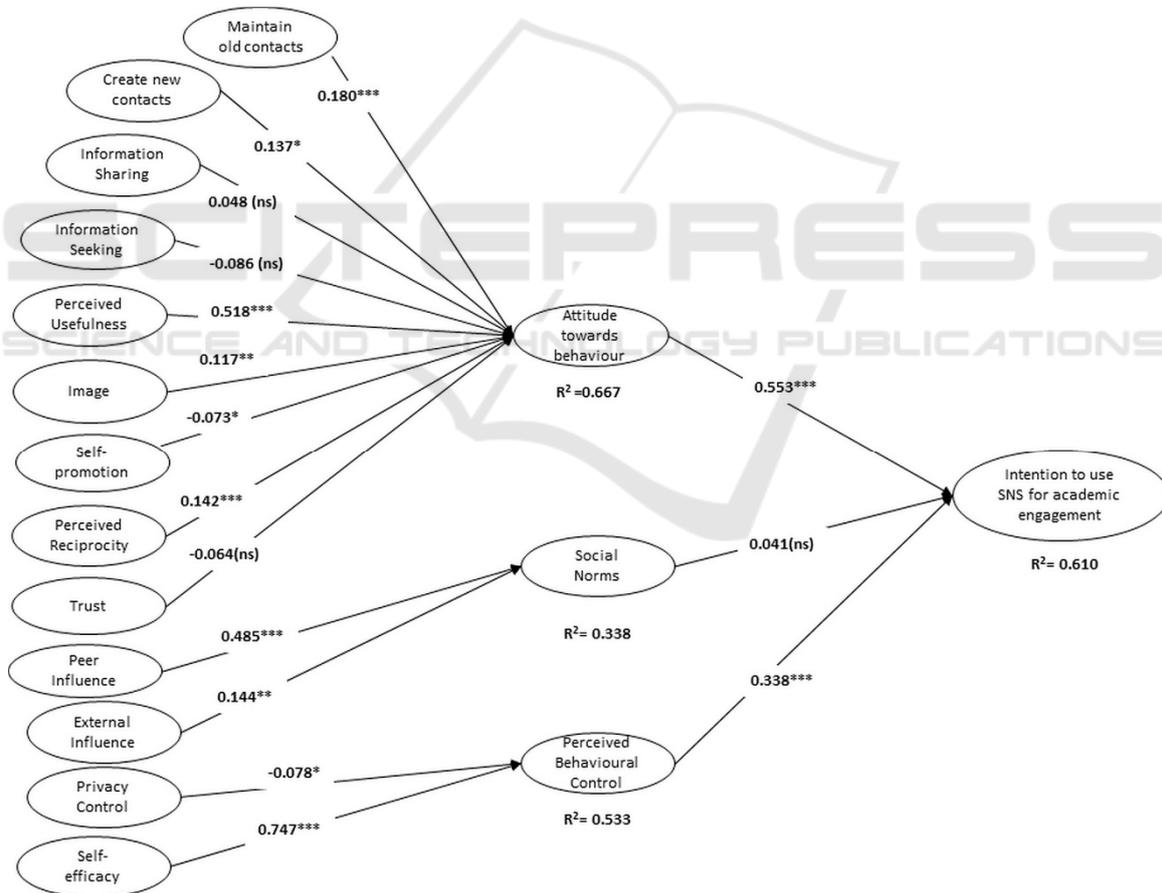


Figure 2: Results of SEM analysis (Note: * p<0.1, **p<0.05, ***p<0.01, ns= not significant).

subject area prior to connecting to them online, thus trust is taken for granted and does not affect their attitudes towards SNS use for engagement within

academia.

A limited information exchange among academics on SNS could also justify the fact that

privacy control has a slight negative effect on perceived behaviour control. Indeed, it has been found that privacy concerns and information sharing on SNS are related, with privacy concerns having a negative effect on self-disclosure of personal information (Xu et al., 2013). It would be normal for academics to consider privacy control as a relatively unimportant factor of the overall control they believe they have over their SNS use, if they do not disclose any sensitive or significant information.

Finally, the self-promotion motive has a small but negative effect on attitude towards SNS use for academic engagement. This could be attributed to the different attitudes that male and female academics hold about self-promotion. Female academics have been found to be reluctant to engage in self-promotion activities, in contrast to their male counterparts (Bagilhole and Goode, 2001; Coate and Howson, 2014). If this is true, female respondents are expected to hold an indifferent or even negative stance towards using SNS for self-promotion. Further research could also investigate whether there are differences in academics' attitudes towards self-promotion based on the discipline.

6 CONCLUSIONS

The present study contributes to the body of knowledge about engagement and impact in academia by examining the factors that affect academics' intentions to use SNS as a part of their academic practice. We found that academics' attitude and perceived behavioural control regarding SNS use for academic engagement are the main drivers of academics' intentions to adopt SNS for this purpose. Attitude is mainly influenced by the perceived usefulness of SNS and secondarily, by a sense of reciprocity that characterises connections on SNS and needs for networking and enhancing one's professional image. Self-efficacy regarding the use of SNS for professional reasons is the main driver of perceived behavioural control. Contrary to what was expected based on the Decomposed Theory of Planned Behaviour, social norms do not have significant effects on academics' intention to adopt SNS.

One of the main implications of our study is that our findings can help academic SNS providers, such as Academia.edu and ResearchGate understand the needs of their members and design more efficient services. As networking and collaboration among members are the main factors that influence academics' attitude towards SNS, they could focus on

the creation of new innovative online services that enhance the networking experience on their platforms. In addition, marketing approaches that stress the actual benefits that an academic can gain by using SNS could prove to be more efficient in the recruitment of new members than approaches that encourage academics to join a social network because their peers are already members.

An equally important implication is that universities can use the results of the study to design more successful online engagement campaigns. As academics are the ones that undertake research and create impact it is important that they get involved in the general process of their institution's engagement attempts with other researchers and the public. Providing training and support on SNS use could be really helpful since self-efficacy has been found to play a crucial role in academics' perceived behaviour control. In addition, associating the use of SNS for academic engagement with a professional image that is desirable in academia and recognising online engagement activities as a part of the formal academic practice would probably result in more academics adopting social media for professional reasons.

The study has presented our early findings based on our preliminary analysis. Further analysis could explore whether there are differences among personal and professional attributes (for instance gender or the stage at which one is, e.g. comparing early academics vs. established academics). It will be also of interest to explore whether there are any significant differences between those users already engaged on social media and how satisfied they are overall and those who are not. With regard to this study's limitations, due to the specific context on which our research focuses, asking questions that capture actual use was deemed unfeasible. Although we were able to capture the general actual use of SNS by asking respondents to self-report the time they spend on them, specific questions about the time spent on SNS solely for engaging with other academics were considered too complicated. This is due to the fact that most academics do not consciously separate the time they spend on SNS for engagement purposes from the time they spend on SNS for other reasons. Consequently, our model accounts only for intentions and not for actual use.

Finally, the generalisability of our findings may be limited due to the demographics of our sample. Although special attention has been paid to including academics from different countries, levels of experience and disciplines, the majority of our respondents work in universities in Europe and

almost half our sample comes from the social sciences. Using the results of this study to understand academics' motives from other disciplines and/or geographical areas should be done with caution.

REFERENCES

- Ajzen, I., 1991. The theory of planned behaviour. *Organizational Behavior and Human Decision Processes*. 50(2). p. 179-211.
- Ajzen, I., 2002a. Constructing a TPB questionnaire: Conceptual and methodological considerations. In Working paper.
- Ajzen, I., 2002b. Perceived Behavioral Control, Self-Efficacy, Locus of Control, and the Theory of Planned Behavior. *Journal of Applied Social Psychology*. 32(4). p. 665-683.
- Ardichvili, A., 2008. Learning and Knowledge Sharing in Virtual Communities of Practice: Motivators, Barriers, and Enablers. *Advances in Developing Human Resources*. 10(4). p. 541-554.
- Bagilhole, B., & Goode, J., 2001. The Contradiction of the Myth of Individual Merit, and the Reality of a Patriarchal Support System in Academic Careers: A Feminist Investigation. *European Journal of Women's Studies*. 8(2), p. 161-180.
- Bhattacharjee, A., 2000. Acceptance of e-commerce services: the case of electronic brokerages. *Systems, Man and Cybernetics, Part A: Systems and Humans, IEEE Transactions on*. 30(4). p. 411-420.
- Bolino, M. C. and Turnley, W. H., 1999. Measuring Impression Management in Organizations: A Scale Development Based on the Jones and Pittman Taxonomy. *Organizational Research Methods*. 2(2). p. 187-206.
- Boyd, D. M. and Ellison, N. B., 2007. Social Network Sites: Definition, History, and Scholarship. *Journal of Computer-Mediated Communication*. 13(1). p. 210-230.
- Chiu, C.-M., Hsu, M.-H. and Wang, E. T. G., 2006. Understanding knowledge sharing in virtual communities: An integration of social capital and social cognitive theories. *Decision Support Systems*. 42(3). p. 1872-1888.
- Coate, K., & Howson, C. K., 2014. Indicators of esteem: gender and prestige in academic work. *British Journal of Sociology of Education*. pp. 1-19.
- Connolly-Ahern, C. and Broadway, S. C., 2007. The importance of appearing competent: An analysis of corporate impression management strategies on the World Wide Web. *Public Relations Review*. 33(3). p. 343-345.
- Davis, F. D., 1989. Perceived Usefulness, Perceived Ease of Use, and User Acceptance of Information Technology. *MIS Quarterly*. 13(3). p. 319-340.
- Dinev, T. and Hart, P., 2003. Privacy Concerns and Internet Use- A Model of Trade-Off Factors. *Academy of Management Proceedings*. 2003(1). p. D1-D6.
- Faraj, S., Johnson, S.L., 2010. Network Exchange Patterns in Online Communities. *Organization Science*. 22(6). p. 1464-1480.
- Flanagin, A. J. and Metzger, M. J., 2001. Internet use in the contemporary media environment. *Human Communication Research*. 27(1). p. 153-181.
- Foregger, S. K., 2008. *Uses and Gratifications of Facebook.com*. Unpublished thesis (PhD). Michigan State University.
- Forkosh-Baruch, A. and Hershkovitz, A., 2012. A case study of Israeli higher-education institutes sharing scholarly information with the community via social networks. *The Internet and Higher Education*. 15(1). p. 58-68.
- Fornell, C., Larcker, D.F., 1981. Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research*. 18(1). p. 39-50.
- Francis, J., Eccles, M. P., Johnston, M., Walker, A. E., Grimshaw, J. M., Foy, R., ... and Bonetti, D., 2004. *Constructing questionnaires based on the theory of planned behaviour: A manual for health services researchers*. Newcastle upon Tyne, UK: University of Newcastle upon Tyne.
- Gruzd, A., Staves, K., Wilk, A., 2012. Connected scholars: Examining the role of social media in research practices of faculty using the UTAUT model. *Computers in Human Behavior*. 28(6). p. 2340-2350.
- Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E., 2014. *Multivariate Data Analysis*. Essex, UK: Pearson, 7th edition.
- Himmelboim, I., Lariscy, R. W., Tinkham, S. F., & Sweetser, K. D., 2012. Social Media and Online Political Communication: The Role of Interpersonal Informational Trust and Openness. *Journal of Broadcasting & Electronic Media*. 56(1). p. 92-115.
- Hsu, M.-H. and Chiu, C.-M., 2004. Predicting electronic service continuance with a decomposed theory of planned behaviour. *Behaviour & Information Technology*. 23(5). p. 359-373.
- Hung, S.-Y., Ku, C.-Y. and Chang, C.-M., 2003. Critical factors of WAP services adoption: an empirical study. *Electronic Commerce Research and Applications*. 2(1). p. 42-60.
- Jeon, S., Kim, Y. G. and Koh, J., 2011. An integrative model for knowledge sharing in communities-of-practice. *Journal of Knowledge Management*. 15(2). p. 251-269.
- Jung, S.O., Wei, J., 2011. Groups in academic social networking services: An exploration of their potential as a platform for multi-disciplinary collaboration. In *Proceedings of 2011 IEEE International Conference on Privacy, Security, Risk and Trust and IEEE International Conference on Social Computing, PASSAT/SocialCom 2011*. p. 545-548.
- Katz, E., Blumler, J. G. and Gurevitch, M., 1973. Uses and Gratifications Research. *The Public Opinion Quarterly*. 37(4). p. 509-523.
- Kim, Y., Sohn, D. and Choi, S. M., 2011. Cultural difference in motivations for using social network sites:

- A comparative study of American and Korean college students. *Computers in Human Behavior*. 27(1). p. 365-372.
- Ku, Y.-C., Chu, T.-H., Tseng, C.-H., 2013. Gratifications for using CMC technologies: A comparison among SNS, IM, and e-mail. *Computers in Human Behavior*. 29(1). p. 226-234.
- Lin, H. F., 2006. Understanding behavioral intention to participate in virtual communities. *Cyberpsychology Behavior*. 9(5). p. 540-547.
- Lupton, D., 2014. *Feeling Better Connected: Academics' Use of Social Media*, Canberra: News & Media Research Centre, University of Canberra.
- Madhusudhan, M., 2012. Use of social networking sites by research scholars of the University of Delhi: A study. *The International Information & Library Review*. 44(2). p. 100-113.
- Maloney-Krichmar, D., Preece, J., 2005. A multilevel analysis of sociability, usability, and community dynamics in an online health community. *ACM Transactions on Computer-Human Interaction*. 12(2). p. 201-232.
- Menendez, M., Angeli, A. de, Menestrina, Z., 2012. Exploring the Virtual Space of Academia. In: Dugdale, J., Masclet, C., Grasso, M.A., Boujut, J.-F., Hassanaly, P. (Eds.), *From Research to Practice in the Design of Cooperative Systems: Results and Open Challenges*. Springer London. p. 49-63.
- Mewburn, I., Thomson, P., 2013. Why do academics blog? An analysis of audiences, purposes and challenges. *Studies in Higher Education*. 38(8). p. 1105-1119.
- Moore, G.C., Benbasat, I., 1991. Development of an Instrument to Measure the Perceptions of Adopting an Information Technology Innovation. *Information Systems Research*. 2(3). p. 192-222.
- Papacharissi, Z. and Rubin, A. M., 2000. Predictors of Internet Use. *Journal of Broadcasting & Electronic Media*. 44(2). p. 175-196.
- Peslak, A., Ceccucci, W. and Sendall, P., 2011. An Empirical Study of Social Networking Behavior Using Theory of Reasoned Action. In *Proceedings of 2011 CONISAR: Conference for Information Systems Applied Research*, Wilmington North Carolina, USA.
- Richter, D., 2011. Supporting virtual research teams - How social network sites could contribute to the emergence of necessary social capital. In *Proceedings of 15th Pacific Asia Conference on Information Systems: Quality Research in Pacific, PACIS 2011*, paper156.
- Ridings, C.M., Gefen, D., 2004. Virtual Community Attraction: Why People Hang Out Online. *Journal of Computer-Mediated Communication*. 10(1).
- Taylor, S. and Todd, P. A., 1995. Understanding Information Technology Usage: A Test of Competing Models. *Information Systems Research*. 6(2). p. 144-176.
- Van Noorden, R., 2014. Online collaboration: Scientists and the social network. *Nature News*. p. 126-129.
- Veletsianos, G., 2012. Higher education scholars' participation and practices on Twitter. *Journal of Computer Assisted Learning*. 28(4). p. 336-349.
- Veletsianos, G. and Kimmons, R., 2012. Networked Participatory Scholarship: Emergent techno-cultural pressures toward open and digital scholarship in online networks. *Computers & Education*. 58(2). p. 766-774.
- Veletsianos, G. and Kimmons, R., 2013. Scholars and faculty members' lived experiences in online social networks. *The Internet and Higher Education*. 16(0). p. 43-50.
- Xu, F., Michael, K. and Chen, X., 2013. Factors affecting privacy disclosure on social network sites: an integrated model. *Electronic Commerce Research*. 13(2). p. 151-168.