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Perceived Value of Social Networking Sites (SNS) in Students' Expressive Participation in Social Movements

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ABSTRACT

Purpose – The purpose of this study is to determine the beliefs that influence university students to use Social Networking Sites (SNS) for expressive participation in social movements.

Design/methodology/approach – The original technology acceptance model (TAM), a quantitative methodological approach, and a survey were used to collect responses from 214 university students in Spain. Structural equation modelling was used to test the proposed relationships.

Findings – Results confirm that the perceived ease of use (PEU) and perceived usefulness (PU) of SNS significantly affect a student's intention to use SNS for expressive social participation in social movements, with use intention significantly affecting actual participation. There was no significant moderating effect of students' gender on these relationships.

Research limitations/implications – The study focuses on the parsimonious TAM model and its applicability to SNS's usability perceptions and participation. The size and profile of the sample limits generalizability beyond the student population. While we explore SNS' use of expressive social participation only at one point in time and only for a group of students in Spain, our findings provide evidence for SNS use for social activism and civic engagement in terms of how people communicate, interact and organize civic and social groups today.

Practical implications – The findings suggest that social activist organisations must take into account that the gender-gap in SNS usage between males and females is disappearing. Positive perceptions regarding the usefulness and ease of use of SNS can be leveraged by using SNS as a global tool to spread social messages and to appeal to collective action.

Originality/value – Although there is much discussion in the popular press about how people use SNS, there is no published empirical research on the determinants that contribute to a person's intention to use and actual use of SNS in the context of social movements. This paper is one of the first studies to investigate young people's perception of the SNS usefulness and ease of use for participation in social movements.

Keywords Social networking sites, Facebook, Computer-mediated communication, Structural Equation Modeling, younger internet users

Article Classification Research paper

1. Introduction

> *"With 20% unemployment (40% among the youth) and the looming possibility that the country's finances might have to face an intervention, things in Spain these days are anything but normal. Enter the Spanish indignados, or, as they are also known here, the 15-M movement (the protest was launched with a gathering on 15 May, one week before local elections). Five months into the long "Spanish spring" of 2011, we've seen how what started as a small, inarticulate and youth-centred movement has transformed itself into what some here call the most interesting political development since the death of Franco in 1975. A hybrid and novel experiment of online and offline activism that has steered clear of the traditional and weary avenues of political engagement, the 15-M movement was the harbinger of the massive Israeli protests in the summer and the Occupy Wall Street movement taking shape in the US."* (An account of the new networked activists rising in Spain, reported by Diego Beas, October 2011, for The Guardian).

The rise in public participation in social media services is facilitating participation in social movements, where individuals collectively generate 'pressure for action' through mediated social contexts like Facebook, Twitter and YouTube (Rolfe, 2005). Examples of such movements include the Arab Spring demonstrations that began in December 2010), the 15-M movement in Spain that began in May 2011, the Israeli border demonstrations that began in May 2011) and the Occupy Wall Street movement in the US that began in September 2011. Social media services have served as an important communication context in these social movements[1], providing opportunities for communication and organization not previously available to activists (Owens and Palmer, 2003).This change is contributing to a shift in the balance of power between traditional actors (Castells, 2009) and providing structural accessibility to young people

[1] Della Porta and Diani (1999, p. 16) defined social movements as '(1) informal networks, based on (2) shared beliefs and solidarity, which mobilize about (3) conflictual issues, through (4) the frequent use of various forms of protests.' Diani (2000, p. 387) later refined social movements as 'networks of informal relationships between a multiplicity of individuals and organizations, who share a distinctive collective identity, and mobilize resources on conflictual issues.'

to engage in civic and social activities (Chadwick, 2006; Dahlgren, 2007; Jugert *et al.,* 2013).

A class of social media service that is playing a central role in the rise of online participation in social movements is social networking sites ('SNS' hereafter). SNS are grounded in a multiplicity of information and technology network systems interlaced with social human systems that enable users to develop peer and interest networks and mediated communities (Wang *et al.,* 2011). The Center for the Digital Future (2011) reports the number of participants in SNS and mediated communities has doubled in recent years, with 79 per cent of members surveyed indicating that they participated in a new cause for social change because of their involvement in SNS. Activists have traditionally been the primary participants in social movements; however, today, citizens who may not consider themselves activists are also actively participating in the mobilisation of social movements through SNS (Hara, 2008).While scholars generally agree that social media services—SNS in particular—are mediating social and political change through online expressions of participation (Gueorguieva, 2008), participants' beliefs about the usefulness and ease of use of SNS for participation in social movements is not well understood. Most studies describe only the functionality and characteristics of SNS and the challenges and opportunities that activists and citizens face when implementing collective action programs online (e.g., Wellman, 2001; Kane *et al.,* 2009; Kaplan and Haenlien, 2010), but a theoretical framework that lays a solid foundation for the underlying beliefs about the use of SNS for expressive participation in social movements is missing. The present study aims to fill this gap.

Another gap in the literature relates to our understanding of the beliefs that influence how one very important civic group, young adults, uses SNS to express its participation in and commitment to social movements. While existing research has compared adolescents' and young adults' offline and online civic participation through social media (Dahlgren, 2007; Jugert *et al.,* 2013), findings about SNS use specifically are absent. In addition to young adults being important civic members in society, they are also heavy users of SNS (Ellison *et al.,* 2007). Such 'hyper-users' of SNS provide interesting implications for younger adults' use of social media for civic engagement. For example, Facebook, initially launched as a network for students to keep in touch with friends at university, now has more than 1.11 billion members (Facebook, 2013),

with students in higher education remaining one of the most intensive user groups of the SNS. Anywhere between 85 per cent and 99 per cent of college or university students use Facebook to support their social and peer interactions (Jones and Fox, 2009; Roblyer *et al.,* 2010). The extent of student adoption of Facebook and peer social engagement through related (and often synced) social media services like YouTube and Pinterest has brought to the forefront of social movement discussions the need to consider how young people use SNS and how it influences their participation in social movements (Martins and Soares, 2011). Our study examines the relationships between the usability beliefs about SNS of a group of young adults who are students in higher education and how these beliefs affect their use intentions and actual participation in social movements.

Our study advances the existing literature in several ways. First, this study employs an extensively validated decision-making model as an appropriate framework, the Technology Acceptance Model (TAM), for the purpose of understanding and modeling students' use of SNS in a social movement context. The TAM has been used to predict the performance of a wide range of adoption behaviours across a variety of technological contexts, ranging from software packages to online services (*anonymized_1*, date; *anonymized_2*, date) and social media (Lin and Lu, 2011; Lorenzo-Romero *et al.,* 2011; Martins and Soares, 2011). Benbasat and Barki (2007) criticised researchers for extending the TAM by continually adding new constructs to it to explain the acceptance of new technologies, resulting in difficulties in ascertaining the definitive version of the model. Advances in understanding technology-acceptance models like TAM can be made by focusing on the use context across different technologies instead of adding more determinants (Van der Heijden, 2004). We contribute to this position by using the original TAM framework to test the role user beliefs play in the adoption of SNS for participation in social movements and by using gender as a moderator of the hypothesised relationships. To our knowledge, this is the first empirical study to test the moderating role of gender on the relationships between university students' beliefs about the usefulness and ease of use of SNS and their intention to use SNS for expressive participation in social movements.

2. Literature review

2.1. Social Network Sites (SNS) and Social Movements

SNS are web-based network services that enable individuals to construct a public or semi-public profile within a bounded system, to articulate lists of users with whom they share a connection, and to build online relationships by means of collecting and sharing information with others in the system (boyd and Ellison, 2007; Kwon and Wen, 2010). The mediated service enables individual members to construct their profiles; to share text, images and photos; and to link with other members of the site by means of applications and groups provided on the Internet (boyd and Ellison, 2007; Tapscott, 2008; Pfeil *et al.,* 2009; Powell, 2009). It is through these mediated social communication practices that members present themselves, connect to their social networks, and develop and maintain social relationships with others (Ellison *et al.,* 2007; Kane *et al.,* 2009). With the rise in the number of SNS and the number of members subscribing to their services, SNS have become an important means of communication for many, especially young adults like university students ('students' hereafter). SNS have emerged as an important social platform that is a critical part of many a young person's daily life (Tapscott, 2008; Powell, 2009; Correa *et al.*, 2010).

Limited empirical research has examined members' usability perception of SNS and SNS' use for participation in social movements. Prior research has focused primarily on defining SNS, online and mediated communities; discussing their functionality (Wellman, 2001; Kane *et al.,* 2009), their social affordances (Mynatt *et al.,* 1998; Ruhleder, 2002), their design and evaluation (Kim, 2000; Preece, 2001; Shneiderman, 2002), their adoption (Lorenzo-Romero *et al.,* 2011; Martins and Soares, 2011), and strategies for attracting new user groups (Ren *et al.,* 2007); and profiling member types based on their participation (Tedjamulia *et al.,* 2005; Bishop, 2007). However, little research has empirically examined the value of SNS for civic engagement and participation in social movements, especially by young people.

The structural accessibility of SNS for disseminating information has had a significant impact on socio-political participation around the world (Gil de Zúñiga *et al.,* 2009; Howard and Hussain, 2011). Through their functionality in facilitating social interactions, popular SNS have become important contexts in facilitating connective action (Bennett and Segerberg, 2012) and the subsequent creation, organization and implementation of social movements, also known as 'cyberactivism', around the world

(Della Porta and Mosca, 2005; Langman, 2005). Examples of prominent social movement activities include anti-war movements (Vasi, 2006; Benett *et al.,* 2008; Gillan, 2009), anti-globalisation movements (Kahn and Kellner, 2004) and campaigns for global justice (Agarwal *et al.,* 2012). Other prominent examples are seen in the increasing social participation by young people that has spearheaded political change in Arab countries (Morozov, 2009; Smeltzer and Keddy, 2010; Attia *et al.,* 2011; Lotan *et al.,* 2011; Tufekci and Wilson, 2012) and facilitated presidential elections in the US (Baumgartner and Morris, 2010; Wattal *et al.,* 2010; Conroy *et al.,* 2012).

Communication and discussion are integral to feelings of efficacy and can increase rates of political and social activity (Delli Carpini *et al.,* 2004; Andersen and Hansen, 2007; Cho *et al.,* 2009). In this study we examine the effect of the perceived usability of mediated communication through SNS. We do not expect SNS to have a disproportionate socio-political use, but we assert that they have potentially substantial value that effects participation in social activism. SNS facilitate the expression of social goals, needs and identity within a group of members by serving as the social glue through which members share messages and express their socio-political views. The development of social media and our adoption and of it is laying the foundation for complex, mediated contexts rich with diverse information and people. This enables people to connect easily and without the structural accessibility restrictions of time and space, adding value, such as mobility, to social movements such as, facilitating the development of social bonds within activist groups, and ensuring that movement information and messages are shared in order to gain support.

2.2. Technology Acceptance Model (TAM)

To grasp the characteristics of the application of SNS in the context of social movements, the present study builds on the nomological structure of the original TAM (Davis *et al.,* 1989). Over the last two decades, the TAM has emerged as a powerful and parsimonious model that has been successfully applied to explain diverse issues related to the adoption of the Internet-based technologies and services. (For a meta-analysis, see *anonymized_2*, date.) Drawing on prior research on SNS adoption and TAM (Lorenzo-Romero *et al.,* 2011; Martins and Soares, 2011; Lin and Lu, 2011), we use the

original TAM-based framework to explain the process underlying the use of SNS when people engage in social movements. Figure 1 presents the research framework.

---INSERT FIGURE 1 ABOUT HERE---

In our research framework, SNS use is a form of social participation in which a student expresses publicly his or her role and behaviour in social movements (Puig-i-Abril and Rojas, 2007). The usage context of the SNS is an important factor within which to explain user behaviour (Benbasat and Zmud, 2003), as determined by the two core TAM constructs of perceived usefulness (PU) and perceived ease of use (PEU). Van der Heijden (2004) and Lin and Bhattacherjee (2008) recommended that, when researchers investigate technologies of a hedonic nature, the operationalization of PU should reflect the utility derived from the IT artefact in question. In keeping with this recommendation, we use Davis' (1989) definition of the perceived usefulness (PU) of SNS as 'the degree to which individuals believe that using SNS for expressive participation in social movements would enhance their chances of attaining instrumental outcomes related to the social movement'. A belief that individuals develop about a particular technology can influence its use (Moon and Kim, 2001). For example, usability beliefs about blogging, SNS and instant messages have been found to influence blogging participation (Hsu and Lin, 2008), acceptance of SNS (Sledgianowski and Kulviwat, 2009) and instant messaging practices (Glass and Li, 2010). Many of these practices are voluntary acts of online social interaction. From a motivational perspective, besides the intrinsic motives of a technology's ease of use, individuals may be extrinsically motivated by a technology's utility. For example, SNS have utility in mediating social interactions, making new contacts and gathering information about the social movement, all of which may lead to forming a perception that using SNS for expressive participation in social movements is useful, a perception that will positively influence SNS members' intentions to use the SNS for these purposes.

Perceived ease of use (PEU) is second key construct of the TAM. Again following Davis *et al.* (1989), we define PU as 'the degree to which a person believes that the use of SNS for expressive participation in social movements will be free of effort'. Research

has consistently found that PEU is a significant and positive determinant of the intention to use a particular technology (Lee *et al.,* 2005; Ramayah, 2006; Kuo and Lee, 2009; *anonymized_1* date, date; *anonymized_2*, date).

On the basis of evidence from past research (Rojas and Puig-i-Abril, 2009), we hypothesize that, from a motivational perspective, the use of SNS to participate in social movements is motivated by both intrinsic and utilitarian factors. Therefore, we propose the following:

H1. *Students' intention to use SNS for expressive social participation significantly influences their use of SNS.*

H2. *Students' perceived ease of use of SNS positively influences their intention to use SNS for expressive social participation.*

H3. *Students' perceived usefulness of SNS positively influences their intention to use SNS for expressive social participation.*

2.3. The Moderating Influence of Gender

Gender is an important potential moderator of the relationship between one's beliefs about SNS usability and one's intention to use SNS for expressive participation in social movements. Research on both civic participation in social movements and the acceptance of technology (such as SNS) has independently documented the differences and similarities between men and women. On both an objective and a subjective level, the classification of 'being male or female' acts as an organizing principle in human and social life (Kuumba, 2001).

Social movement research informs us that not only have women and men long experienced differently the social realities that lead to the emergence of social movements, but they also have different experiences within social movements (Kuumba, 2001). Gender has been found to play a role in social movement recruitment and mobilisation, roles played, resistance strategies and organizational structures (Cable, 1992; McAdam, 1992; Neuhouser, 1995). Participation is also moderated by a difference in domestic responsibilities, resulting in an inequity in structural access and the availability of opportunity to participate in demonstrations and other offline forms of social mobilisation (Cable, 1992). As a result, women are more likely to participate in informal political action, such as volunteer work, and men more radical and

confrontational forms of social-political action (Wilson, 2000; Hooghe and Stolle, 2004). Studies of young people in Europe have been consistent in reporting the higher social and civic involvement of male adolescents than female adolescents (Albanesi *et al.*, 2007; Metzger and Smetana, 2009; Cicognani *et al.*, 2012). There is evidence to suggest that youth participation using emerging technology like SNS may continue to be structured by gender (Harris, 2008).

Technology acceptance research and usability research have long used gender as a variable to describe group differences in technology perceptions. In these studies females are often described as less frequent and less intense users of web technology than males, with their use driven by different motives. For example, females have been shown to be driven more by social motives and men more by search for information and entertainment (Garbarino and Strahilevitz, 2003; Gefen and Ridings, 2005; Simon and Peppas, 2005). In addition to profiling the differences between how males and females behave in a networked economy (Taylor, 2004; Wilson, 2004) and participate in its development (Robertson *et al.,* 2001), researchers have begun to treat gender as a boundary condition that moderates the technology belief-use-intention relationship (Venkatesh *et al.,* 2003) and web use (Hasan, 2010; Hwang, 2010; Muscanell, 2012; *anonymized_2*, date). For example, Venkatesh and Morris (2003) reported that men and women differ in their technology acceptance, particularly in terms of the influence of the subjective norm, but that this difference diminishes over time. *anonymized_1* (date) also reported differences between male and female web users, with gender as a moderator of the relationship between perceptions of web knowledge and usability. In the context of young people, Alemán and Wartman (2009) reported that, in terms of SNS use among student groups, men conform to traditional views of masculinity and women to traditional views of femininity.

Against this backdrop, we consider gender as having an important role in moderating the effect of a student's beliefs about the ease of use and usefulness of SNS for expressive participation in social movements and his or her intention to use SNS's in this way. Drawing upon previous research (Bozionelos, 1996; Venkatesh and Morris, 2000; Venkatesh *et al.,* 2003; *anonymized_1*, date), we propose that the effect of PEU and PU on behavioural intention is more salient for women than for men. Hence:

H4. *The belief-intention relationships proposed in H2 and H3 is moderated by gender.*

3. Methodology

3.1.Measurement scales

To test the hypothesized relationships, we drew on past research for the measurement of TAM constructs. These constructs have consistently reported reliability and validity when applied across technological contexts and cultures. We use the measurement instrument for the TAM constructs (i.e., PEU, PU, and Behavioural Intention) from Davis *et al.* (1989), and Venkatesh and Davis (2000) (Table III). All items were measured using a seven-point Likert scale, with the anchors '1 = strongly disagree' and '7 = strongly agree.' Age was measured in years. Gender was coded using a dummy variable where 1 represented female and 2 male. Students' expressive social participation in social movements through SNS was adapted from Rojas and Puig-i-Abril (2009) (Table III) and measured by asking participants how frequently they participated in five activities in an average week, with the response format on a 7-point interval scale (1 = never to 7 = frequently).

We created a questionnaire in English that was reviewed for content validity by five academic university staff. The English questionnaire was translated into Spanish and back into English to ensure translation equivalence (Brislin, 1970), and the questionnaire was administered online in Spanish. The first draft of the survey instrument was validated through a pre-test and a pilot test. The pre-test involved seven participants, each with more than two years' experience using SNS. Participants were asked to comment on the length, the format, and the wording of the scale statements. After several rounds of discussion and revision to ensure that the meanings were clear and to clarify ambiguous questions, the instrument was pilot-tested with a sample of eighteen participants selected from the *Democracia Real Ya* (Real Democracy NOW) Facebook community, one of the reported origins of the 15-M demonstrations in Spain in May, 2011. Based on participants' feedback from the pre-test and the pilot test, several items were modified, with some items revised after the initial reliability and validity check in the pilot sample.

3.2.Sample and data collection

The population of interest in this study is young adults studying at university in Spain. Spain was deemed a suitable country context, as it is ranked third in the world in terms of the number of active users of SNS, with 77 per cent of the Spain's population having membership in SNS (Nielsen, 2010).

The survey was administered online to a sample of 246 Spanish undergraduate students at a public university in Huelva, Spain, all of whom were SNS users, during the first week of the winter quarter of 2012, 18 months after the start of 15-M movement. Of the 214 participants who submitted valid surveys 62 per cent were female, 75 per cent were18-25 years old, and 91 per cent were single. Thirty per cent of the students surveyed were business students, 24 per cent were majoring in sciences and engineering, and 47 percent in social studies and languages. Thirty-three per cent of the sample had SNS access at home, and 48 per cent accessed SNS through their smartphones. Twenty per cent spent an average of more than seven hours on SNS, with less than 5 per cent spending less than one hour. The sample had high Internet use experience, with 79 per cent of the sample having used the Internet for more than five years and 23 per cent having used SNS for more than five years. Table I summarizes the profile of the participants sampled.

---INSERT TABLE I ABOUT HERE---

The sample is not homogenous on key demographic variables and is easily comparable to the wider student university population at similar European state universities; although we do not claim that the findings are generalizable to a wider population of Internet users. We can infer from the descriptive participation statistics that the sample of students surveyed are hyper-users of SNS.

4. Findings

4.1. Assessment of measures

Exploratory factor analysis (EFA) and confirmatory factor analyses (CFA) were conducted to assess the convergent and discriminant validity, reliability and unidimensionality of factor structures of the TAM constructs. We used SPSS 19.0 for the EFA. Structural equation modelling (M-Plus 5.21 version) was employed for the

CFA and multi-group invariance analysis using the maximum likelihood estimation procedure.

Table II shows that the mean scores of all constructs ranged from 3.44 to 3.75, which indicates an overall positive response to the constructs. The standard deviations for all variables were less than 1, indicating that the item scores were around the mean scores.

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4.2. Discriminant validity

Discriminant validity measures the extent to which constructs differ from each other. Discriminant validity is considered adequate when the variance shared between a construct and any other construct in the model (AVE) is less than the variance that the construct shares with its measures (Fornell and Larker, 1981). The variance shared by any two constructs is obtained by squaring the correlation between the two constructs. For discriminant validity to be judged adequate, the square root of the AVE for a given construct should be greater than the off-diagonal elements in the corresponding rows and columns. Table II suggests that each construct shared more variance with its items than it did with other constructs.

4.3. Convergent validity

As Table III shows, all items loaded significantly on their respective constructs, with factor loadings range from 0.54 to 0.84, thus meeting the threshold of 0.50 set by Hair *et al.* (2006) and demonstrating convergent validity at the item level. In addition, at the construct level, the reliability coefficients (Cronbach's alpha) and composite reliability (CR) for all constructs were well above the threshold level of 0.70 (Nunnally and Bernstein, 1994). The final indicator of convergent validity is the average variance extracted (AVE), which were higher than the 0.50 that Fornell and Larcker (1981) estimated as being adequate.

---INSERT TABLE III ABOUT HERE---

Finally, a test was performed to determine the presence or absence of common method variance. The initial EFA with oblique rotation produced seven factors with eigenvalues larger than 1, which collectively accounted for 64 per cent of the variance. The first factor accounted for 25 per cent of the variance, which suggested that common method bias may not be a major concern (Podsakoff *et al.,* 2003).

4.4. Main effects from the structural model analysis

The goodness-of-fit indices suggested that the main effects model fits the data reasonably well (χ^2 / (*df*) = 1.894; CFI = .93; TLI = .92; RMSEA = .059). Following Venkatesh and Davis (2000), PU and PEU are considered to have direct effects on the intention to use innovations. In the present study, positive relationships were observed for perceived usefulness → intention (β = .559, t = 6.277, p<.01), perceived ease of use → intention (β = .226, t = 2.617, p<.01), and intention → use of SNS for expressive participation (β = .454, t = 5.079, p<.01). That is, H1, H2, and H3 were supported by the data.

4.5. Structural equation modelling and multi-group invariance analyses for gender

To compare the findings on the basis of gender, we performed measurement and structural invariance multi-group analyses based on a covariance matrix using M-Plus 5.21 and the maximum likelihood estimation procedure. We followed Byrne *et al.*'s (1989) and Vandenberg and Lance's (2000) distinction by referring to the first two tests (configural and metric invariance) as tests of aspects of measurement invariance (as they concern tests of relationships between measured variables and latent constructs), versus the final test, which tests aspects of structural invariance (as it refers to tests concerning the latent variables themselves).

Measurement invariance analysis is conducted to verify that the factor loadings of indicator variables on their respective latent factors do not differ significantly across groups. In testing for multi-group invariance, the one-sample models are tested separately first to provide an overview of the model results' consistency; if consistency is found, then multi-group testing proceeds. We performed the measurement invariance tests using the following hierarchical ordering of nested models: configural invariance and metric invariance.

In a multi-group analysis of invariance, we tested the measurement invariance through configural and metric invariance test first. We derived a baseline χ^2 value by computing the model fit for the pooled sample. We evaluated this baseline model, also known as the *configural model,* based on its goodness-of-fit indices to determine whether the model was a good representation of the hypothesized relationships. The configural invariance model is important because it provides the basis for comparison with all subsequent models in the invariance hierarchy, so if the data does not support identical patterns of fixed and non-fixed parameters across the groups (configural invariance), then the data will not support more restrictive models. The goodness of fit indices reported in Table IV for the configural model for gender indicated that configural invariance was attained and provided support for the assumption that the pattern of fixed and non-fixed parameters in the research model was identical across all the groups.

In the second step, we tested for *metric invariance* to ensure that different groups respond to the items in the same way so we may compare ratings obtained from different groups in a meaningful way (Steenkamp and Baumgartner, 1998). To test for metric invariance, the factor pattern coefficients were constrained to be equal across groups, and the model was fitted, yielding a χ^2 value for the constrained model. These constraints increased the χ^2 value from 410.88 (248 *df*) to 419.52 (263 *df*), gaining fifteen degrees of freedom each. Because this metric invariance model (constrained model) was nested within the baseline model, a χ^2 difference test was performed. Given that $\Delta\chi^2(\Delta df)$ [8.638 (15 *df*)] were not statistically significant at $p = 0.05$, metric invariance was supported (Table IV), suggesting that the different scores on the item can be meaningfully compared across groups; that is, observed item differences indicate group differences in the underlying latent construct (Steenkamp and Baumgartner, 1998). Given these findings, we felt confident that all measures were operating in the same way for both male and female participants, so we could proceed with testing the equality of the structural parameters.

The final step was the *structural invariance* test, which involves increasingly restrictive models tested by imposing equality constraints on the factor loadings, measurement intercepts, and structural covariance across the two groups: male and female students. The interest focuses on the hypothesized underlying factors and their

inter-relational structure. The results shown in Table IV from the estimation of structural invariance model yielded an increase in the χ^2 value from 410.88 (248 *df*) to 423.28 (267 *df*). Given that $\Delta\chi^2$ (Δdf) [12.401 (19 *df*)] was not statistically significant at $p = 0.05$, structural invariance was supported, leading to the conclusion that the model did not vary across groups. This finding did not support our hypothesis of the moderating effect of a student's gender on the TAM relationships proposed in H4.

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5. Discussion and Implications

This study examines the effect of students' perceptions of SNS usability on the use of SNS for expressive participation in social movements, a relationship we propose to be moderated by gender. The relationships proposed in the TAM model (Figure 1) were validated in this study, corroborating numerous studies that have tested TAM in a variety of computer and information technologies (e.g., Bozionelos, 1996; Venkatesh and Morris, 2000; Venkatesh *et al.,* 2003; *anonymized_1*, date). Although social practices through SNS are complex and multifaceted, the finding that perceptions of usefulness and ease of use are relevant in understanding the determinants of SNS use contributes to our understanding of why students engage in SNS for participating in social movements. Our analysis revealed that students' perception of the ease of use of SNS for the purpose of participating in social movements will facilitate their intention to use SNS for this purpose and that they are likely to carry on using SNS for this purpose in the future. From a theoretical perspective, this study reinforces the role of PEU and PU as determinants of a positive intention toward SNS adoption.

Although there is much discussion in the popular press about how people use SNS, there is no published empirical research on the determinants that contribute to a person's intention to use and actual use of this technology in the context of expressive participation in social movements. This paper is one of the first studies to investigate this issue. A criticism of TAM is that researchers keep extending the model by adding factors to it to explain new iterations of technology (Benbasat and Barki, 2007), so our main purpose in using the original model and constructs of TAM (Davis, 1989) is not to extend the model using a new technology but to use the model to help us identify the

factors that most influence the adoption of SNS in the field of civic and social engagement. The results suggest that the TAM is a robust research model with excellent ability to predict behavioral intention and usage, as it performed almost exactly as predicted by previous literature (e.g., Alarcon-del-Amo *et al.,* 2012).

One of the most interesting findings, and one that contrasts with the findings from prior studies on SNS usage, was the lack of gender differences. Previous research has shown significant differences between males' and females' usage of SNS. For example, females are more likely to use SNS to keep in touch with friends, while males are more likely to use them to form new relationships (Thelwall, 2008; Tüfekci, 2008). These findings suggest that social activist organisations must take into account the dynamic nature of the relationship between gender and Internet usage. However, our findings are in line with the most recent studies, especially those from Western countries (see the University of Southern California's Annenberg School Center for the Digital Future, 2013) that show a decrease in the differences between genders with regard to Internet usage, with some authors announcing that the 'gender gap' has vanished with respect to use of new media (e.g., Hu *et al*., 2009; Thayer and Aray, 2006) and even that women are more likely to use SNS than their male counterparts are (Hargittai, 2008).

The findings of the present research are significant to the study of civic engagement for three reasons. Firstly, our findings provide evidence for SNS use for social activism and civic engagement in terms of how people communicate, interact and organize civic and social groups today. While we explore SNS' use of expressive social participation only at one point in time and only for a group of students in Spain, we show that our participants perceived SNS as both useful and easy to use and that they are used for social civic participation. We believe this finding is just a preliminary step toward understanding the potential of SNS for this group of young people to influence the organization processes of both mediated and unmediated mobilisation for social activism. SNS should serve not only for maintaining relationships (Ellison et al., 2007) but also for promoting social change through collective (socio-political) action in both the online and offline domains. We note that, in Iran and Egypt, the hegemony remains unchanged. Many questions remains answered. For example, can SNS trigger social change? Can SNS bring people together? How is SNS used by civil society, especially younger people, to facilitate collective action, and who participates in online social

movements? How do SNS build social capital when no previous ties exist? Is this the problem with action that is initiated online? Answering these research questions should be the next steps.

The second reason that the findings of the present research are significant to the study of civic engagement is that they provide empirical support for the applicability of TAM to the context of understanding influencers of expressive social participation. Our results confirm that students' perceptions of SNS' ease of use and usefulness significantly affect students' intentions to use SNS for expressive social participation. Social activist organisations must take advantage of SNS' usefulness and ease of use to spread social messages and appeal to collective action. In connection with the degree to which SNS are perceived as easy and useful, SNS support connective action wherein individuals can reduce the cost of social organizing and improve inefficiencies that can arise due to the lack of co-presence (Earl and Kimport, 2011). The significantly lower costs of participating in SNS override the threat of individuals' free-riding (Olson, 1965).

The third implication of our findings is that we found that gender did not moderate the relationship between a student's perceptions of SNS' ease of use and usefulness and the intention to use SNS for expressive participation in social movements. The relationship between a student's perceptions of SNS' usability, his or her intention to use SNS, and his or her actual participation in expressive social participation on SNS did not differ between male and female students. This finding is at odds with the findings of early studies of Internet use, wherein male and female users did differ (Clegg and Trayhurn, 2000; Venkatesh *et al.,* 2003; *anonymized_1*, date), and with the findings of extant research on differences in participation in social movements between young male and young female students (Albanesi *et al.,* 2007; Metzger and Smetana, 2009; Cicognani *et al.*, 2012). This inconsistency indicates that, because of social affordances, hyper-usage and these sites' popularity, student users of SNS are socialized differently than earlier generations of users of Internet-based technologies.

6. Limitations and future research

Although our work provides empirical insights, it is not without limitations that provide several avenues for future research. First, while they were the focus of interest in this

study, nearly 90 per cent of our participants were between 18 and 35 years old and were commonly described as hyper-users of SNS, a key market for Internet-based social and mobile technologies. Since the aim of the present research was to investigate active engagement with SNS, the method of data collection was appropriate, but we recommend that future research use a more diverse sample of SNS users in terms of their socio-demographic profiles (e.g., age, education, culture). Second, rather than using constructs that were specific for this user group, the present study employed well-established constructs from prior literature. Hence, some contextual characteristics may not have been noted. To overcome this issue, an alternative research strategy could involve using more context-specific measures. It would also be useful to employ the Unified Theory of Acceptance and Use of Technology (UTAUT) (Venkatesh *et al.,* 2003) in order to clarify students' expectations about SNS use (performance expectancy and effort expectancy), social acceptance (social influence), and their perceptions about resource availability (facilitating conditions) in the use of SNS for expressive participation. Similarly, our study focuses on one type of social media service, SNS. In order to add the richness that is representative of the social media landscape for expressive social participation, future research should consider other mediated social practices with and through other social media applications, services and platform contexts.

Third, our participants are hyper-users of SNS in Spain and are likely to have had more exposure to social media services and to be more socially active than other age or geographic cohorts. Although they are likely representative of the population of young adult SNS users in Spain, we suggest using caution in generalizing our results to other groups whose cultural and lifestyle habits may differ. Incorporating more countries into the investigation would lead to a more comprehensive illustration of the impact of national culture on SNS use in the context of social movements. Specifically, the sample should represent a diversity of European nationalities in order to form a more comprehensive idea as to the adoption of SNS in Europe. Future research can analyse the data through multi-group analysis to identify the differences and similarities between nationalities with respect to their adoption of SNS (Murovec and Prodan, 2009).

Fourth, we examined only gender as a moderator of the effect of perceptions of SNS' usability on the intention to use SNS. Additional factors, such as perceptions of network externalities and system quality, trust, perceived risk of privacy theft, and playfulness, may also affect users' intention to use SNS.

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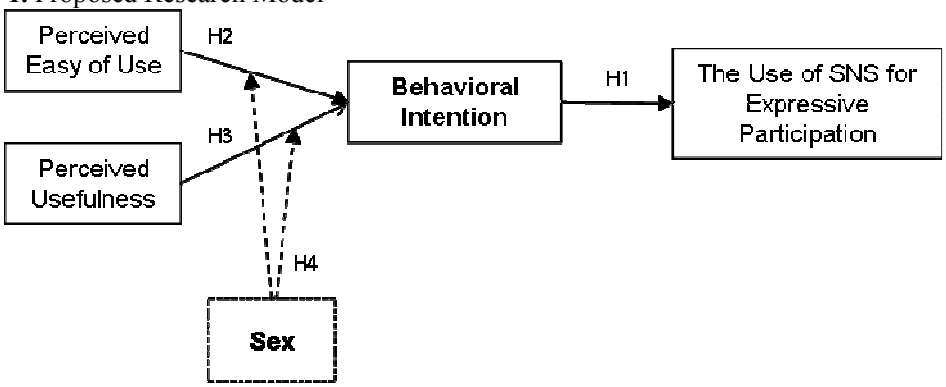
Figure 1. Proposed Research Model



Source: Adapted from Davis *et al.* (1989)

Table I. Sociographic data of the participants studied

Variables	N (%)
Gender	
Female	131 (61.79%)
Male	81 (38.21%)
Missing values	2
Age (years)	
<18	9 (4.27%)
18-24	158 (74.88%)
25-34	32 (15.17%)
35-44	9 (4.27%)
45-54	3 (1.42%)
55-64	0
>=65	0
Missing values	3
Civil Status	
Single	192 (90.57%)
Married	11 (45.19%)
Living together (unmarried)	6 (2.83%)
Separated	0
Divorced	2 (0.94%)
Widowed	1 (0.47%)
Missing values	2
Subject	
Business	68 (29.57%)
Engineering	55 (23.91%)
Social Studies	107 (46.52%)
Access	
Home	204 (95.33%)
Work	8 (3.74%)
Study Center	20 (9.35%)
Public Terminal	0
Smartphone	16 (7.48%)
*Current issues related social causes**	
Family	122 (59.80%)
Neighbors	17 (8.67%)
Fellows students	105 (51.98%)
Friends	126 (60.00%)
*Social interest**	
Local	131 (63.59%)
National	127 (61.95%)
International	95 (46.34%)
*Experience with Internet**	
Less than a year	1 (0.48%)
1-2	8 (3.81%)
3-5	35 (16.67%)
6-10	85 (40.48%)
Over 10 years	81 (38.57%)
*Experience with SNS**	
Less than a year	22 (10.84%)
1-2	33 (16.26%)
3-5	101 (49.75%)

6-10	31 (15.76%)
Over 10 years	15 (7.39%)
*Use SNS in a typical week**	
Less than 1 hour	10 (4.76%)
1-7	157 (74.76%)
7 hours or more	43 (20.48%)

* Most frequently tried

Table II. Descriptive statistics, correlation matrix, and square root of AVE

	1	2	3	4
1. Expressive Social Participation	*0.707*			
2. Behavioral Intention	0.436*	*0.714*		
3. Perceived Usefulness	0.415*	0.692*	*0.728*	
4. Perceived Ease of Use	0.397*	0.565*	0.616*	*0.721*
Mean	3.51	3.75	3.60	3.44
Standard deviation	0.24	0.28	0.28	0.07

*Significant at $p \leq .01$

Diagonal values represented in italics are square root of AVE; off-diagonal values are correlations between constructs.

Table III. Internal consistency and convergent validity of the theoretical construct measures

Constructs and Items	*Factor Loadings*[a]
The use of SNS for expressive social participation (α = 0.81; CR = 0.82, AVE = 0.50)	
How often do you engage in the following activities on a SNS?	
Use email to comment on social causes current affairs known through SNS.	.63[b]
Send SNS private messages with social information.	.54 (8.50)
Sharing video content, photo content or commenting SNS practices.	.73 (7.12)
Post comments to social blogs linked to SNS.	.60 (6.22)
Express your opinions on current issues related to social causes to your SNS.	.72 (7.33)
Behavioural Intention (α = 0.89; *CR* = 0.85; *AVE* = 0.51)	
In the next 8 weeks…	
I have the intention to continue using SNS for expressive social participation.	.83[b]
I will tell others about the positive aspects of using SNS for expressive social participation.	.82 (13.80)
I will recommend others to use SNS for expressive social participation.	.84 (14.17)
I would prefer to use SNS for expressive social participation rather than traditional methods.	.69 (10.69)
I have the intention to use SNS for expressive social participation as much as possible.	.79 (13.00)
Perceived Usefulness (α = 0.92; *CR* = 0.91; *AVE* = 0.53)	
I believe that using SNS for expressive social participation could be useful for. . .	
. . . my life.	.67 (10.02)
. . . information acquisition and exchange.	.77 (11.83)
. . .relationship development or maintenance.	.70 (10.51)
. . .social and emotional support.	.69 (10.40)
. . .diffusion of ideas.	.79 (12.33)
. . .creating and developing social movements.	.79 (12.14)
. . .mobilising people with respect to social causes.	.76 (13.06)
. . .inducing offline civic participation.	.79[b]
Perceived Ease of Use (α = 0.82; *CR* = 0.84; *AVE* = 0.52)	
I believe that, in the context of expressive social participation, …	
…my interaction with SNS is clear and understandable.	.68[b]
…participating in SNS doesn't require a lot of mental effort.	.78 (7.33)
…it is easy for me to participate in SNS.	.82 (7.86)
…It is simple for me to navigate in SNS.	.57 (7.40)
…I find it easy to get SNS to do what I want it to do.	.57 (7.41)

Note: The goodness-of-fit indices were: $\chi^2/(df)$ = 1.894; CFI = 0.93; TLI = 0.92; RMSEA = 0.059; α = Cronbach's alpha; *CR* = composite reliability; *AVE* = average variance extracted.

[a] The t-statistic for each estimate is in parentheses.

[b] The reference category.

Table IV. Parameter estimates of structural model and test for measurement invariance

Hypothesized Path	Gender		
	Female	Male	z-scores
H2: Perceived Ease of Use →Intention	0.558**	0.489**	0.987
H3: Perceived Usefulness →Intention	0.203	0.313	-0.457
Configural Model = Unconstrained.	*Configural Model:* χ^2 (*df*) = 410.88** (248); CFI = 0.931; TLI = 0.915; RMSEA = 0.056		
Metric Invariance Model = Factor loadings constrained equal across groups. ***Result: measurement equivalence achieved***	*Metric Invariance Model:* χ^2 (*df*) = 419.52** (263) $\Delta\chi^2$ (Δdf) = 8.638 (15); $p > 0.05$ CFI = 0.934; TLI = 0.923; RMSEA = 0.053		
Structural Invariance Model = Factor loading, measurement intercepts, and structural covariance constrained equal across groups. ***Result: structural equivalence achieved***	*Structural Invariance Model:* χ^2 (*df*) = 423.28** (267) $\Delta\chi^2$ (Δdf) = 12.401 (19); $p > 0.05$ CFI = 0.934; TLI = 0.924; RMSEA = 0.053		

** Significant at 0.01 level; * Significant at 0.05 level

Note: $\Delta\chi^2$= difference in chi-square values between models; Δdf= difference in number of degrees of freedom between models.

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Second Revision

Letter to the Editor

Dear Professor Zahay,

Thank you for giving us the opportunity to re-revise and submit our manuscript, "PERCEIVED VALUE OF SOCIAL NETWORKING SITES (SNS) IN STUDENTS' EXPRESSIVE PARTICIPATION IN SOCIAL MOVEMENTS." We are grateful for your and the reviewers' efforts, as the comments were very helpful in our efforts to improve our manuscript.

The following pages explain our thoughts on each comment and show how we responded to them in the revised manuscript. Thank you again for your time and effort in the continuation of this review process.

Sincerely, The authors

RESPONSE TO REVIEWER 1

Comment 1: *The abstract needs to be re-written. Please reframe the purpose so it is not so specific at to state the context i.e Spanish university student - you are looking at student motivations and the context is within the Spanish University. Please discuss the practical implications for social activist organisations i.e. what should they be doing as a result of your findings. Please clearly state the originality of your work and not what other research has done. Please indicate why this is of value.*

Response 1: Thank you for pointing out this issue. Please compare the abstract in the revised manuscript. We have re-written the abstract according to your suggestions by adding statements on implications, originality, and modifying the purpose.

Comment 2: *Please remove the term sex and replace with gender. You make the point that you are examining biological sex but you do not do this you use a self-complete instrument so you in fact capture participants perceived gender orientation- you do not objectively test the biological sex of your participants. In fact on page 14 you do discuss gender.*

Response 2: Thank you for prompting us to reconsider our use of the term 'sex'. We agree that we were not consistent in the way we explained and measured this concept. We have now taken your recommendation and replaced the term 'sex' with gender throughout the paper and in the tables and figure.

Comment 2: *Please strengthen your discussion section. You state that this is a preliminary step but do not discuss to what. You need to outline the subsequent steps that your work suggests.*

Response 3: Thank you for this very helpful comment. Following from your comment, we have strengthened the discussion section according to what you suggested to us. We added more discussion on our findings on the lack of gender difference in SNS usage. We also elaborate on our research being a preliminary step by proposing five questions for future research to answer. Please compare the discussion in the revised manuscript.

Comment 4: *Please discuss in greater detail the implications of your findings for social activist organisations. what do they need to do as a result of your finding of no gender differences being present, what do the findings relating to PEU and PU mean for their practice?*

Response 4: We thank you for this useful comment. We have expanded the discussion of our findings in line with you have suggested. Please compare the discussion in the revised manuscript.

Comment 5: *The paper as whole still requires proof reading as there are several grammatical error remaining.*

Response 5: We completely agree with your comment. We hired the services of a professional copy-editor and the manuscript has been completely checked for any grammar and spelling mistakes.

Thank you again for your valuable and constructive comments, which we believe have made the paper considerably stronger. We hope that you will find that all your concerns have been adequately addressed.

RESPONSE TO REVIEWER 1 (Additional Questions)

Comment 1: *The originality needs to be clearly stated.*

Response 1: Thank you for your comment. We have clearly stated the originality of our work in the abstract. Please compare the abstract in the revised manuscript.

Comment 2: *Please change reference to sex to gender.*

Response 2: Thank you for prompting us to reconsider our use of the term 'sex'. We have now taken your recommendation and replaced the term 'sex' with gender throughout the paper and in the tables and figure.

Comment 3: *Please expand on the implications for research, practice and/or society*

Response 3: Thank you for your comment. We have expanded the implications of our findings.

Comment 4: *Please proof read.*

Response 4: We hired the services of a professional copy-editor and the manuscript has been completely checked for any grammar and spelling mistakes.

Thank you very much for all your comments. We hope you will find the paper strengthened as a result.