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What drives social integration in the domain of Social Network Sites? Examining the influences of relationship quality and stable and dynamic individual differences

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STRUCTURED ABSTRACT:

Purpose. The objective of this study is twofold. First, the study aims to investigate the effects of personal innovativeness and familiarity on social integration in the domain of Social Network Site innovation. Second, the study seeks to examine the influences of satisfaction and trust on social integration.

Design/methodology/approach. Structural equation modelling is proposed to assess the relationships between the constructs, along with the predictive power of the model.

Findings. The results demonstrate that increasing satisfaction, trust, and familiarity and assisting members' personal innovativeness are important initiatives that promote social integration, reduce competition between *my Social Network Site* and others, and consequently, inhibit opportunistic behaviour.

Research limitations/implications. The model does not include all the relevant variables. The sample is not random and thus it is not necessarily representative of the population.

Practical implications. Managers must take familiarity and innovativeness into account to customise their social strategies in order to ensure enduring enthusiasm for Social Network Sites. Likewise, fostering members' satisfaction through more gratifying and easier interactions is an effective strategy to promote social integration. Furthermore, Social Network Sites should prioritise their initiatives for enhancing perceived control by making clear rules and management procedures available, as well as the required legal aspects and seals of approval that will increase levels of trust.

Originality/value. A review of the literature reveals that very few studies analyse the effects of personal differences and relationship quality on social integration. This work therefore improves the explanatory power of existing theoretical frameworks.

KEYWORDS:

Social Integration, Social Network Sites, Familiarity, Personal Innovativeness, Satisfaction, Trust.

1 Introduction

Social Network Sites (SNSs) offer tools to their members for the creation and maintenance of social integration reflected in community participation and a sense of connection to their community (Chen *et al.*, 2013; Herrero and Gracia, 2007). Although previous research emphasises the benefits of community integration and participation in SNSs as an effective route towards well-being, further study is required to identify the main drivers associated with them. In this vein, our study designs a research model to aid in predicting social integration based on high levels of relationship quality and on individual differences which influence this loyalty-based process, since not every individual is prone to be loyal *per se*.

Relationship quality arises from research in the field of relationship marketing in which the key goal is to strengthen already strong relationships and to convert indifferent individuals into loyal ones (*e.g.*, Chen and Ku, 2013; Hennig-Thurau and Klee, 1997). Relationship quality is here assumed to be a higher-order construct reflected in customers' trust and satisfaction (*e.g.*, Dwyer *et al.*, 1987). Nevertheless, a permanent increase in individuals' satisfaction, trust and loyalty is becoming increasingly difficult to achieve. Community managers should, consequently, search for alternative ways to foster members' social integration. While the adoption-acceptance models measure numerous variables, they fail to investigate personal traits to explain the process of long-lasting SNS use, and to account for both the limited explanatory power of and the inconsistencies among previous studies (*e.g.*, Lu and Hsiao, 2010).

In particular, few studies have analysed the potential effects of differences in innovativeness in the context of the enduring usage of social applications (Zhong *et al.*, 2011). Personal innovativeness towards Information Technologies (PIIT; see Agarwal and Prasad, 1998; Jackson *et al.*, 2013) is conceptualised here as a stable, IT-specific descriptor, which exerts a significant influence on behaviours within a narrow domain of activity (Hwang, 2014). Furthermore, as the benefits of participation and integration might be evaluated differently by short-term and long-term members, our research suggests examining members' familiarity. Integrating familiarity described as "an understanding based on previous interactions, experiences, and learning of what, why, where and when others do what they do" (Gefen, 2000, p.727), brings about a richer understanding of social integration.

In sum, the following questions are relevant. What are the main drivers that members recognise as helpful in the social integration process? In particular, what form does the relationship between personal differences, relationship quality and social integration approach take? The paper's structure is as follows: Section 2 provides the theoretical background. Section 3 proposes the conceptual model and hypotheses. Section 4 describes the research method adopted in this study. Section 5 presents the main research findings, and Section 6 and 7 offer the implications and limitations of this study for its use in research and practice.

2 Theoretical framework

Despite the fact that SNSs have significant values (*e.g.*, seeking information or fostering feelings of attachment towards one another) half of all new members have abandoned their SNSs soon after the creation of their accounts (Li, 2011). It is thus essential for managers to understand the dimensions that drive the continuance of interaction at a deeper level.

2.1 Social integration

To tap the two aspects of social integration in SNSs our study uses both measures of participation as well as measures of members' feelings of membership, identity, belongingness, and attachment to a group (Blanchard, 2007; Herrero and Gracia, 2007). On the one hand, the success of community support settings

depends on the active participation of a significant proportion of the members (Blanchard and Markus, 2002). Community participation is here associated with the degree to which individuals are active members of the SNS and are involved in its social activities. On the other hand, a key dimension that distinguishes SNSs from mere virtual groups is their community integration. Community integration is conceptualised as “the commitment and belief that members have shared and will share history, common places, time, and similar experiences together” (Chen *et al.*, 2013, p.7).

By using these constructs our research draws on two aspects of social integration: “social-psychological or emotional integration which involves introspective social experiences or perceived depth of connectedness, and structural integration which refers to concrete involvement in activities” (Gracia and Herrero, 2004, p.7), aiming to capture the construct of social integration in its broader sense.

2.2 Personal drivers

Although personal differences play important roles in their decisions to accept innovations (Roehrich, 2002; Rogers, 2003), there remains a lack of research focusing on the individual-level antecedents of social integration. First, as Davis and Yi (2012) proposed, PIIT emerges as exhibiting consistent relationships with various user behaviours in the IT domain. PIIT has a stable influence across situations involving IT, it being an important individual trait for examining the acceptance of IT innovations (Agarwal and Prasad, 1998). Second, familiarity (as a dynamic, situation-specific individual difference) is considered to be one of the main drivers of individuals’ behaviour. It is defined as “an individual’s knowledge regarding other community members and their activities within the community” (Shen *et al.*, 2010, p.52).

2.3 Relationship quality

Our study analyses relationship quality defined as the degree of appropriateness of a relationship to fulfil the needs of the customer associated with that relationship (Hennig-Thurau and Klee, 1997). Relationship quality is here reflected in customers’ trust and satisfaction. First, our research focuses on the non-economic aspects of satisfaction. Satisfaction is thus conceptualised as an affective customer condition that results from a global evaluation of all the aspects that make up the consumer relationship (Severt, 2002). Satisfaction is associated with the favourable affective responses of members who find cumulative mutual interactions rewarding. Second, members who do not trust an SNS will not be loyal to it even though they are satisfied with it. A certain level of trust may exist (Lu *et al.*, 2010). In particular, trust is characterised by the feelings of security and perceived strength of the relationship and is decidedly more confined to personal experiences with the focal partner (Johnson and Grayson, 2005). Trust is thus assumed as confidence in an exchange partner's integrity and benevolence (*i.e.*, affective trust).

3 Development of hypotheses

Drawing upon the theoretical framework discussed in the previous section, our study develops a research model that emphasises the integration and the fulfilment of needs as essential cues for the enduring existence of SNSs. Figure 1 outlines the conceptual model.

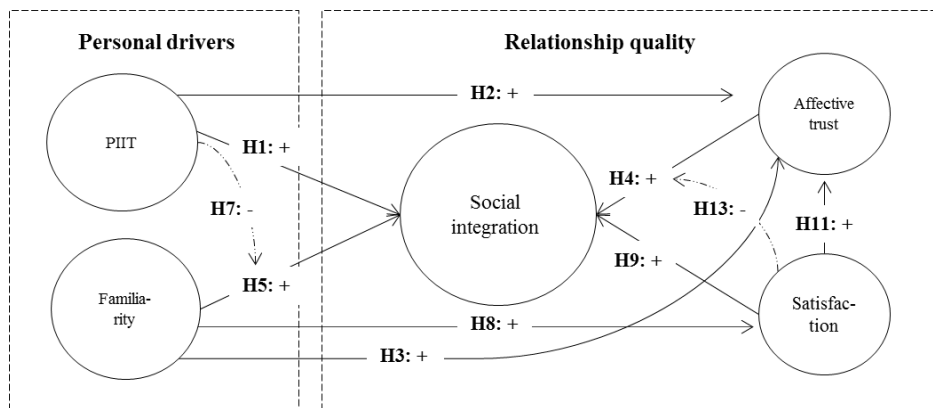


Fig.1.Conceptual model.

PIIT relates to an individuals' willingness to try out a certain mode of IT, seeking out mentally or sensually stimulating experiences. Individuals who are innovative towards IT are expected to develop more positive perceptions about IT and have more positive intentions regarding opportunities to actively engage in them.

Limayem *et al.* (2000) argued that using Information Systems is an innovative behaviour, it being more likely to be adopted by innovators. Among the characteristics to show a positive relationship with the frequency of members' involvement in an SNS's activities is the desire for challenge (Kim *et al.*, 2009). People who exhibit signs of seeking out stimulating interactions tend to use an SNS more frequently than those who are reluctant to change their habits (Agarwal and Prasad, 1998). It is thus logical to expect that individuals having a trait of personal innovativeness and curiosity are more inclined to participate in them. Moreover, users may accept SNSs to promote positive feelings associated with the degree to which one is cared for, esteemed and valued, and is part of a social network of mutual assistance and obligations. Among innovative users, an SNS will not only be a tool to achieve any task, but also an end in and of itself for the intrinsic pleasures it provides. Finally, PIIT is positively related to users' perceived identity verification (Chou, 2010) —and, in the context of this study, to community integration. "Identity—both the establishment of their own reputation and the recognition of others—plays a vital role" (Donath, 1999, p.30). Building on previous research, members not only identify with the SNS —as an organisation— but also create their identities within the SNS.

Therefore,

H1: *PIIT positively influences social integration.*

Innovative individuals are less likely to report computer anxiety because they are more comfortable with technology risks and changes (Thatcher *et al.*, 2007). Agarwal *et al.* (2000) evidenced that PIIT influences beliefs about general and specific computer self-efficacy. In this vein, innovative individuals reflect optimism regarding the adoption of ideas or technologies, favourably affecting *optimistic expectations* that the trustee will protect the trustor's interests (*i.e.*, trust; see Hosmer, 1995).

Therefore,

H2: *PIIT positively influences trust.*

Customer familiarity is referred to as the knowledge people have of a product or service, based on their previous interactions, experience, and learning (Gefen, 2000; Lee and Kwon, 2011). Familiarised users believe that they know a social service well, displaying a judgment of their capability to use the service and more positive assessments about the SNS and, as a consequence, reducing the complexity related to social activities (Yoon and Rolland, 2012). In this regard, familiarity acts as a probable long-term uncertainty-reduction strategy, and promotes trusting beliefs (Gefen *et al.*, 2003).

Therefore,

H3: *Familiarity positively influences trust.*

Trust becomes a key dimension in fostering the voluntary online cooperation between strangers seen in virtual communities (Ridings *et al.*, 2002) because of virtual community activities lacking the face-to-face contact or the absence of workable rules that requires others to behave in a socially acceptable manner (Lin, 2008). Research in online settings indicates that trust in others is related to a desire to both give and receive information (Ridings *et al.*, 2002; Wasko *et al.*, 2004). A member is likely to be more willing to engage in cooperative interaction “where perceptions of honesty and expectations of behavioural reliability are high” (Usono *et al.*, 2007, p.204). Furthermore, trust reduces uncertainty, enhances the quality of exchange interactions and strengthens parties' commitment to the relationship (Moorman *et al.* 1992; Zhao *et al.*, 2012). It is difficult for a person to have a sense of belonging to a specific community if he/she does not trust the other members of the community.

Therefore,

H4: *Trust positively influences social integration.*

Members' positive judgments, feelings and past experiences towards their SNS lead to favourable expectations about the intentions and behaviour of others and a higher sense of belonging (Chen *et al.*, 2013). Familiarity has positive impacts on their voluntary participation in co-production and affective contribution to SNSs (Gefen, 2000). Members become more socially integrated once they understand and are familiar with the SNS' values, norms, and rules. Familiar virtual environments create a level of comfort, so members feel free to discuss and share experiences, beliefs and emotions (Tu and McIsaac, 2002).

Therefore,

H5: *Familiarity positively influences social integration.*

In accordance with our research model, our study explores mediation-based dynamics by considering that members' familiarity partly relates to social integration through trust. An increase of individuals' knowledge regarding other community members and their activities within the SNS can intensify the confidence placed in a partner on the basis of feelings generated by the level of care and concern the partner demonstrates, raising the likelihood of the intensification of members' social integration.

Therefore,

H6: *The relationship between familiarity and social integration is partially mediated by trust.*

Personal innovativeness is characterised as one individual tending to cope with higher levels of uncertainty than others and showing a negative relationship with perceived risk (Agarwal and Prasad, 1998). Innovative users assess the technology due to their curiosity and risk-taking nature and do not base their decision on a specific activity-based cognisance based on previous experience or learning of how to use the particular interface (Gefen, 2000). They require less knowledge based on their previous interactions to participate in and integrate into SNSs. It may then be easier to persuade innovative individuals who have no prior cognitive structure to try stimulating technologies.

Therefore,

H7: *PIIT weakens the relationship between familiarity and social integration.*

Zajonc and Markus (1982) proposed that familiarity may lead to positive assessments of a service. Following Tam (2008), a small discrepancy between expectations and performance perceptions is not noticed among high familiarity customers. Rephrasing Yoon's (2002) proposals, familiarity required for the successful execution of SNSs causes a positive reception to the idea of social interactions conducted online, positively affecting the satisfaction.

Accordingly, individuals with high familiarity are especially keen to experience satisfaction with SNSs because different levels of familiarity provide individuals with a different framework of reference for evaluations. A high level of knowledge about the service tends to enable users to evaluate service quality based on previous experiences, make better future decisions and save considerable effort in searching and information processing. This increases their level of satisfaction (Yang *et al.*, 2006).

Therefore,

H8: *Familiarity positively influences satisfaction.*

Satisfaction reinforces the users' decision to participate in the process of the service being offered, committing themselves progressively. When members are satisfied with their SNSs, they are likely to actively participate in community events, and maintain affective ties with other members. Nambisan and Baron (2009) evidence a positive effect between satisfaction and customer participation in a community context. It is logical to expect that if a user is not satisfied with an SNS, "he/she can freely decrease his/her community participation or terminate his/her membership and switch to another SNS" (Zheng *et al.*, 2013, p.516). Likewise, community integration is a situation in which a user demonstrates an affective and emotional attachment to content creation behaviours in an SNS. Users satisfied by their relationship with an SNS are more likely to sense a strong psychological bond with it.

Therefore,

H9: *Satisfaction positively influences social integration.*

A mediating effect of satisfaction on the relationship between familiarity and social integration may here be proposed. Our research posits limited direct effects of familiarity on social integration (see H5), and explores the mediating relationships between familiarity, satisfaction, and social integration. H8 and H9 indicate that familiarity impacts on social integration via satisfaction and, consequently, the development of familiarity and satisfaction improves social integration.

Therefore,

H10: *The relationship between familiarity and social integration is partially mediated by satisfaction.*

Satisfaction leads to a perception of equity in the exchange process, "which enhances confidence that a partner will continue to meet his/her obligations in the future" (Johnson and Grayson, 2005, p.502). Satisfaction leads to the belief that members continue to receive the same quality of service. If expectations are met, members are satisfied and, hence, confident.

Therefore,

H11: *Satisfaction positively influences trust.*

Our research shows a mediating effect of the dimensions of trust in the satisfaction-social integration link. If a customer is satisfied with the performance of an SNS, this implies that the SNS successfully performs the service delivery and is also reliable in terms of the feelings generated by the level of care and concern the partner demonstrates (*cf.* H11), and, as a consequence, increasing trust provides a good motive for the members to obtain and share experiences and to maintain a relationship (*cf.* H4).

Therefore,

H12: *The relationship between satisfaction and social integration is partially mediated by trust.*

Through the satisfactory repetition of social interactions, individuals may learn that there is an association between such online behaviours and satisfaction –mitigating the impact of trust due to the non-necessity for a conscious consideration of uncertainty (Chiu *et al.*, 2012). When members progressively perceive the strength of a relationship which meets their needs and expectations, the leading favourable effects of affective trust on the members' social integration decrease. Satisfied members are more likely to become accustomed to the SNS' norms, language and the identities of other members, thus reducing the relevance of trust in social integration.

Therefore,

H13: *Satisfaction weakens the relationship between trust and social integration.*

4 Methodology

4.1 Participants

The participants are students enrolled in social studies courses at a public University in southern Spain. The undergraduate students are asked if they are members of *Tuenti* (a popular SNS among the Spanish college student population). All participating members are offered a chance to win an iPod Nano in an *ad hoc* raffle. The exclusion of invalid questionnaires due to duplicate submissions or an excess of empty data fields results in a final convenience sample of 278 users, 42.8% of whom are male. The average age is 21.04 (SD:2.403).

4.2 Measures

A self-administered questionnaire adapted to the SNS-based context is used to collect opinions about social integration, familiarity, PIIT, satisfaction, and trust.

To measure social integration a self-report questionnaire based on the definition of perceived community support proposed by Herrero and Gracia (2007) is constructed. In particular, our instrument is a revised version and composed of nine items taken from Casaló *et al.* (2007), Herrero and Gracia (2007) and Geyskens *et al.* (1996) to measure community integration and participation.

Three items are employed to measure familiarity (Dick *et al.*, 1995; Flavián *et al.*, 2006; Gursoy, 2001). Our scale of familiarity is consistent with members' familiarity with an SNS because it reflects their direct and indirect self-assessed knowledge of an SNS, avoiding being confounded by some other, underlying factors such as motivation or interest in the service class.

PIIT is operationalised using the four-item scale developed by Agarwal and Prasad (1998). Building upon Rogers' theory, Agarwal and Prasad (1998) address, however, some of the problems identified in the innovation diffusion theory, and appropriately shift the focus from observed adoption behaviour to an implicit personal trait operating in differing technology acceptance realms.

The satisfaction measure is adapted from Flavián *et al.* (2006), Janda *et al.* (2002), and Smith and Barclay (1997). The affective trust scale is taken from by Kumar *et al.* (1995), and McKnight *et al.* (2002).

Finally, the questionnaire is pretested with four e-business professors. They assess the suitability of the wording and format, and the extent to which measures represent all the facets of the constructs. Suggestions are incorporated into a second version that is then tested by two other e-business professors. No additional suggestions are made. See Appendix 1.

All items use seven-point Likert-type scales ranging from 1, "strongly disagree", to 7, "strongly agree".

4.3 Data analysis

We propose a structural equation model with Partial Least Squares (PLS) estimation to assess the relationships between the constructs, along with the predictive power of the research model (SmartPLS 2.0.M3; Ringle *et al.*, 2008). PLS is most suitable during the early stage of theory development, being adequate for causal hypothesis applications whose purpose is prediction or theory building.

5 Results

5.1 Measurement model

Satisfaction, familiarity and PIIT are modelled as first-order constructs. Social integration and trust are conceptualised as second-order latent constructs, which are operationalised by their underlying first-order dimensions. All factors in our model are reflective constructs.

For the trust and social integration variables, we follow a two-step approach (Chin, 2010). Items for each dimension are optimally weighted and combined using the PLS algorithm in order to create latent variable scores. In this regard, a model containing only the first-order constructs of the conceptual framework is run in order to validate the measurement model and to obtain construct scores for the dimensions of social integration and trust. Individual reflective-item reliabilities are above the recommended acceptable cut-off level of 0.7. The composite reliabilities (ρ_c) for the multiple reflective indicators are well above the recommended level of 0.7. We check the significance of the loadings with a bootstrap procedure (5,000 sub-samples) to obtain t-statistic values. All t values are significant ($p < 0.001$). See Appendix 1. Convergent and discriminant validities are assessed by stipulating that the square root of the average variance extracted (AVE) ought to be at least 0.7, and should be greater than that construct's correlation with other constructs. All latent constructs satisfy these conditions. See Appendix 2.

Next, a second measurement model containing the second-order constructs is run in order to validate the measurement model. Individual reflective-item reliabilities are over the acceptable cut-off level of 0.7. The composite reliabilities are well over the recommended acceptable 0.7 level. The loadings are significant ($p < 0.001$). AVE measures for latent constructs exceed 0.5. The square root of the AVE is larger than all other cross-correlations. See Figure 2 and Appendix 3.

5.2 Structural model

The research model appears to have an appropriate predictive power for endogenous constructs, exceeding the required amount of 0.10 (coefficient R-square) (Chin, 1998). See Figure 2. A measure of the predictive relevance of the dependent variables in the proposed model is the Q^2 test (*i.e.*, the *Stone-Geisser Criterion* Q^2). The results confirm that the main effects model offers satisfactory predictive relevance: social integration (0.315 > 0), satisfaction (0.321 > 0) and trust (0.120 > 0).

As indicated in the main effects model, the hypotheses, with the exception of H3, are supported on the basis of the empirical data. The bootstrap resampling procedure (5,000 sub-samples) is used to generate the standard errors and the t-statistic values. PIIT has a significant impact on trust and social integration, with path coefficients of 0.091 ($p < 0.05$) and 0.145 ($p < 0.001$). Likewise, familiarity has a significant impact on social integration and satisfaction, with coefficients of 0.469 ($p < 0.001$) and 0.560 ($p < 0.001$). Moreover, satisfaction has a significant impact on social integration and trust, with coefficients of 0.174 ($p < 0.01$) and 0.470 ($p < 0.001$), and trust has a significant impact on social integration, with a coefficient of 0.181 ($p < 0.001$). See Fig.2.

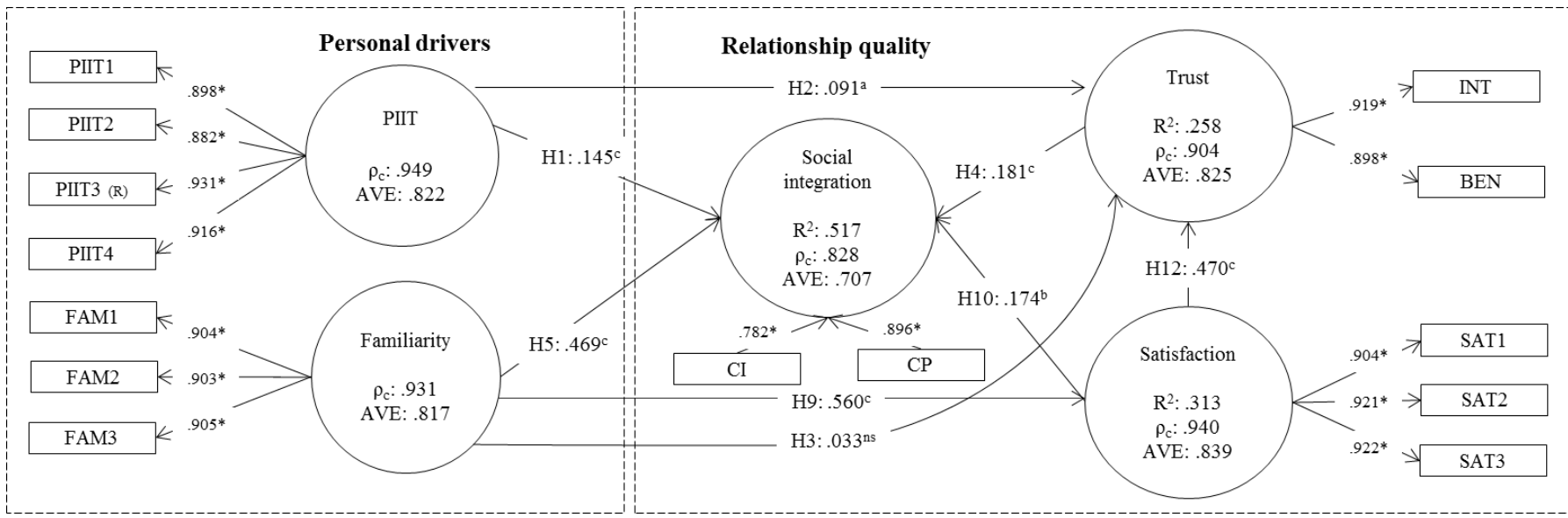
Second, the product-indicator approach (Henseler and Fassot, 2010) is employed to test H7 and H13. PLS path modelling is exempt of distributional requirements and hence our study was free from the need to estimate parameter standard errors. The correct estimation of the interaction term's path coefficient here takes priority over the estimation of its standard error. PLS path modelling therefore provides a more accurate estimation of the interaction effects when using this approach (*cf.* Chin *et al.*, 2003).

In our research, the interaction effect is 0.097 ($p < 0.01$) for familiarity*PIIT on social integration. The interaction effect is -0.158 ($p < 0.01$) for trust*satisfaction on social integration. In the case of standardised variables, the following interpretation is possible (Henseler and Fassot, 2010): If the moderator variable is one, *i.e.*, one standard deviation higher than its mean, the exogenous variable's influence (*i.e.*, familiarity)

on the endogenous variable (*i.e.*, social integration) is $0.466 + 0.097$. Trust on social integration is thus $0.208 - 0.158$. Higher PIIT increases the impact of familiarity on social integration. Contrariwise, higher satisfaction decreases the impact of trust on social integration. See Figure 3.

Further, empirical research follows the hierarchical process similar to the multiple regression procedure, where the proportion of variance explained (as expressed by coefficient R-square) for the full model is compared to the R-square for the model which excludes the interaction effect (Chin, 1998). The difference in the R-square assesses the overall effect size f^2 (see Cohen, 1988). Excluding familiarity*PIIT from the interaction effects model resulted in a drop of the R-square to 0.537 ($f^2 = 0.022$). Excluding trust*satisfaction from the interaction effects model resulted in a drop of the R-square to 0.526 ($f^2 = 0.046$). In all cases, the interaction terms attain f^2 values > 0.02 (small effect size).

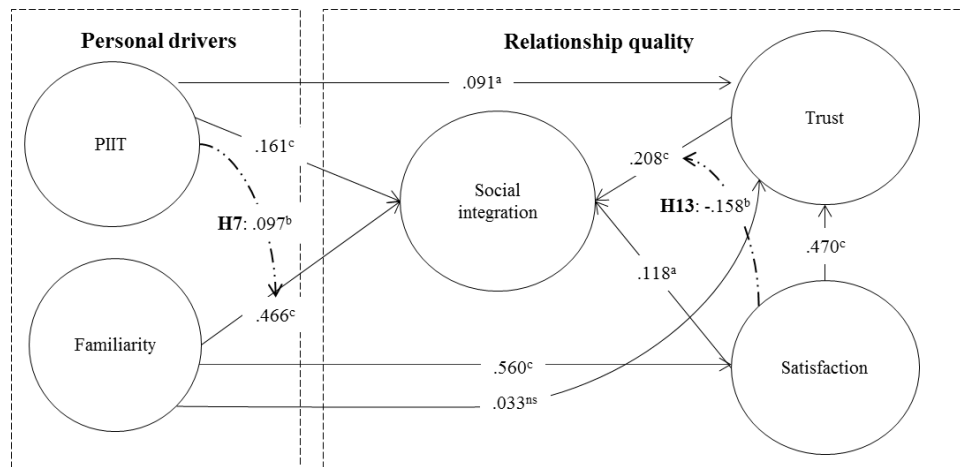
Our research has included two control variables in our model (*i.e.*, gender and age). Age presents a negligible and non-significant path, and gender has a significant impact on social integration. In particular, the interaction effect is 0.120 ($p < 0.05$) for gender*satisfaction on social integration. Satisfaction likely comforts females and helps them overcome their fears of failure and their computer anxiety.



* $p < 0.001$ (based on $t(4,999)$, two-tailed test)

^a $p < 0.05$, ^b $p < 0.01$, ^c $p < 0.001$, ns=not significant (based on $t(4,999)$, one-tailed test)

Fig.2. Second-order model. Main effects model (results).



^ap<0.05, ^bp<0.01, ^cp<0.001, ns=not significant (based on t(4,999), one-tailed test)

Fig.3. Interaction effects model.

Finally, to test the mediating effects we apply the analytical approach described by Preacher and Hayes (2008) and Taylor *et al.* (2008). As familiarity has no significant effect on trust (H6), the remaining steps of the mediation analysis are only performed for H10 and H12. In particular, Chin (2010) proposes a two-step procedure for testing mediation in PLS: (1) Use the specific model in question with both direct and indirect paths included and perform N (5,000) bootstrap resampling and explicitly calculate the product of direct paths that form the indirect path being assessed. (2) Estimate the significance using percentile bootstrap. This generates a 95 percent confidence interval (CI) for mediators. If the interval for a mediation hypothesis does not contain zero, this means that the indirect effect is significantly different from zero with a 95% CI.

The bootstrap resampling estimate of the indirect effect of familiarity on social integration via satisfaction (0.0965) is similar to the point estimate (0.0974) computed from the PLS analysis of the raw data. Zero is not in the 95% CI. The indirect effect is significantly different from zero at p<0.05. Likewise, the bootstrap resampling estimate of the effect of satisfaction on social integration via trust (0.084) is similar to the point estimate (0.085). Zero is not in the 95% CI. The indirect effect is significantly different from zero at p<0.05, supporting H12.

6 Discussion

Academics and managers interested in an active participation in an SNS, and, as a result, a sense of belonging to it should develop strategies based on relationship quality that encourage interaction in terms of quantity or quality and the strength of the relationships between members. To provide more detailed research about PIIT or familiarity, it is also of increasing importance to take into account both the limited explanatory power and the inconsistencies of other studies.

In accordance with our results, familiarity in an SNS evidenced an affective impact on the social interaction process. When individuals perceive the risk of being less (brought about in part by individual's knowledge regarding other members and their activities) they tend to share information with other users. Perceived ease of use and experienced efficiency (in part by higher familiarity) also increase satisfaction with electronic services. Social integration is thus built through a direct route via familiarity or an indirect affective route via satisfaction, it being more strongly related to familiarity than to

satisfaction. Familiarity becomes an essential driver of social integration and a global evaluation of all the aspects to retain existing SNS members and attract further potential newcomers.

In this regard, our study provides guidelines for the communication strategy of SNSs. For instance, familiarity should be obtained not only by the use of them, but also by the information obtained through communication or word-of-mouth (Gursoy, 2001). Less familiarised users give more importance to the variables which are more dependent on external sources (*e.g.*, reputation) (Abu-Ghazze, 1996). The second managerial implication provides guidelines for the design of an SNS. A community manager could utilise familiarity-based factors to design an SNS that facilitates social interactions in it. On the one hand, for the novice user, the objective of managers could be to fairly quickly enable the user to gain an overview of and familiarity with the SNS and its procedures (Gefen *et al.*, 2003), contributing to an easier-to-use SNS and, with this, to a heightened sense of perceived usefulness and satisfaction. In an attempt to develop positive attitudes among them, researchers and professionals might introduce courses and programmes to gain more experience. On the other hand, it is desirable for SNS operators to create familiarity through exposure. For instance, Twitter allows members to update their current status in real time through text messaging, “motivating curious members to more frequently visit the site and interact with other members, developing familiarity and loyalty as a result” (Shen *et al.*, 2010, p.65). Furthermore, in line with Lin *et al.* (2008), managers should not only consider the functions of usefulness and ease of use to facilitate customer familiarity, but also contemplate the broader level of users' engagement and positive emotions, including pleasure, happiness, etc., to stimulate innovative users. Members who enjoy an activity will probably want to maintain or increase their emotional responses.

Second, Rousseau *et al.* (1998) identified several kinds of trust -one of which is relational trust that emerges as a result of repeated interactions over time- and proposed a positive relationship between interaction and trust. In particular, familiarity increases self-efficacy and trust with the prior experience (Yoon and Rolland, 2012), which reduce uncertainty by establishing a structure. “Trust itself is the product, among other things, of familiarity with the e-vendor and with the specifics of the website interaction” (Gefen *et al.*, 2003, p.311). Comparing our findings with previous research, some interesting patterns emerge. Familiarity had here a non-significant impact on trust. A possible explanation would lie in the loose ties between members in SNSs that could present them with *superficial opportunities* to learn about each other's integrity and benevolence. For instance, Donath and Boyd (2004) hypothesised that the Internet allows weak ties to be formed and maintained easily. The efficiency experienced by familiarised users enhances user competence in utilising the SNS or in performing the tasks and, consequently, the members' confidence or willingness to rely on a community's reliability. These findings are in the same vein as those reported by Lu *et al.* (2010), who evidenced that familiarity had significant effects on trust in members' ability but not on trust in members' integrity or benevolence. Indeed, affective trust embedded in strong ties motivates individuals to use multiple channels to maintain contact with their strong ties, both on and off social media (Haythornthwaite, 2005).

Third, there has been little effort made to explore the effect of personal innovativeness in a post-adoption context. In particular, among innovative users, SNSs could be considered as artefacts focused mainly on providing stimulating experiences, rather than fulfilling any practical needs. In our research, members with higher levels of PIIT tend to be more risk-taking, and are expected to have more positive intentions towards participation. Our study also proved that PIIT in an SNS results in stronger feelings of security and a perceived strength of the relationship. Academics ought to research how to assist innovative members by fostering cues so that they can attain gains in integration and trust (*e.g.*, increasing novelty or perceived control driven by a sense of orderly and clear design, or providing community features to identify members who have provided useful suggestions to others). Indeed, “for individuals with high innovativeness in IT, improving their identity verification in an online community becomes very important” (Chou, 2010, p.848).

Furthermore, innovative members are *selective processors* who often rely on a subset of highly available and salient cues in place of detailed elaboration related to social interactions. To some extent, the relationship between familiarity and social integration could thus be replaced by the individuals' enthusiasm or keen interest in SNSs. We hypothesised that higher levels of PIIT would diminish factors involving prior online experiences and focus more on sensually stimulating experiences. Contrary to our expectation, PIIT gave members a predisposition towards a greater influence of familiarity on social integration.

Fourth, the impact of relationship quality on social integration had not been explicitly examined to date. Although some studies suggest such a relationship, our findings continued showing that social integration depends not only on individual characteristics, but also on satisfaction and trust. Our research empirically demonstrated the significant relationship between satisfaction and commitment in the domain of SNSs. Satisfaction becomes one type of *switching cost*. Enhancing customer satisfaction becomes an important initiative that avoids the consideration of competitive brands. For instance, SNSs should direct their online efforts to satisfaction-based initiatives related to brand superiority, defenders of the brand, and a supportive social environment. Loyal members are indeed less susceptible to negative information about a service and they are relatively immune to competition.

Likewise, knowing the nature of online trust and its determinants has become an important goal. Trust is of even higher importance in electronic channels compared with traditional service settings (Yoon, 2002), being even greater for categories with personal information at risk (*e.g.*, SNSs) (Bart *et al.*, 2005). Lack of trust represents one of the reasons explaining lurking behaviour (Ridings *et al.*, 2006). In this regard, higher levels of trust increased participation in SNSs for the purposes of sharing knowledge and ideas related to mutual interest, and also created a greater sense of identity, belonging, and attachment to the SNS. An SNS should thus foster its support for perceived control by making clear rules and procedures available, as well as the required legal aspects and seals of approval that help reduce levels of uncertainty. This recommendation is important to reduce the uncertainty and risks of interaction that exist for members about a potential or existing relationship. Our results are consistent with Ridings *et al.* (2002). They found that both dimensions of trust in members are positively related to the desire to get information. Managers could then design a supportive mechanism and an affable environment (Chang and Chuang, 2011) that more effectively foster the individuals' self-efficacy. This belief that the SNS can be trusted is central because of the absence of any practical guarantee that the SNS will not engage in violations of privacy, conveyance of inaccurate information, and unauthorised tracking of transactions (Gefen *et al.*, 2003). Although individuals trust other members not to misuse their thoughts, life experiences, etc., personal information disclosed on SNS can be used for purposes of identity theft, stalking, cyberbullying or sexual harassment by online predators.

Finally, comparing our findings with prior research, interesting patterns emerge. Although previous comments summarise that trust is the major influencing factor of customer loyalty -which indicates that customers have to build trust in online services before developing loyalty towards them- the relationship between trust and social integration was here significantly weakened by satisfaction levels. The perceived probability of service-based risks will be reduced when individuals learn what to expect. Through the satisfactory repetition of social interactions, individuals learn that there is an association between such online behaviours and satisfaction.

7 Conclusions

Although previous SNS-based studies have improved our understanding of the underlying processes of social integration, it is evident that more comprehensive research that included important predictors of community integration and participation in social environments was needed. Previous studies have examined isolated subsets of user traits and subsequent behaviours. However, this is the first study to our knowledge that has empirically tested a theory-grounded framework for integrating personality characteristics and relational drivers in research models predicting social integration.

The measurement model was valid, with acceptable convergent and discriminant validity. Our results provide strong support for the arguments that personal differences and relationship quality lead members to increase their integration and participation in SNSs. Higher PIIT also increased the impact of familiarity on social integration. Trust resulted in weaker social integration when customers experienced a higher level of satisfaction with the SNS however. In sum, by establishing a social integration between users and SNS innovation, this study has extended the existing body of knowledge on the subject.

Nevertheless, this research does have some limitations. First, future research ought to not overlook playfulness and social influence. Intrinsic motivations can affect human behaviour more powerfully than

extrinsic motivations. Members' behaviour should be influenced not only by their own motivations but also by other members within their SNSs. Second, our results suggest that there may be a different influence of potential and familiarised members separating cognitive and affective trust. Future research should thus include cognitive trust in the model. Third, future research using a more sophisticated sampling design and different SNSs would establish the external validity of our findings. Fourth, our research used a cross-sectional design, which precluded causal inferences. The relationships proposed by our model await further testing in longitudinal research. Fifth, cultural factors should be taken into account while interpreting the results as this study was conducted in Spain. Finally, future research ought to analyse whether the development of social integration is affected by gender, assuming previous evidence which indicates that females are more oriented towards interpersonal relationships.

8 References

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APPENDIX

Appendix 1. First-order model. Descriptive Statistics, Loadings, ρ_c , and AVE.

Construct / Dimension / Indicator	average	standard deviation	loadings ^a	ρ_c	AVE
Familiarity (FAM) (adapted from Dick et al., 1995; Flavián et al., 2006; Gursoy, 2001)				0.931	0.817
FAM1. I am quite familiar with my Tuenti community	4.84	1.463	0.903		
FAM2. I am quite familiar with the services offered by my Tuenti community	4.04	1.596	0.902		
FAM3. In comparison with the typical user of my Tuenti community, I believe I am quite familiar with it	4.04	1.472	0.907		
PIIT (PIIT) (Agarwal and Prasad, 1998)				0.949	0.822
PIIT1. If I heard about a new information technology, I would look for ways to experiment with it	4.56	1.458	0.895		
PIIT2. Among my peers, I am usually the first to try out new information technologies	3.76	1.595	0.885		
PIIT3(R). In general, I am hesitant to try out new information technologies	4.32	1.685	0.931		
PIIT4. I like to experiment with new information technologies	4.76	1.655	0.915		
Satisfaction (SAT) (adapted from Flavián et al., 2006; Janda et al., 2002; Smith and Barclay, 1997)				0.940	0.839
SAT1. In general terms, I am satisfied with my experience in my Tuenti community	5.16	1.218	0.906		
SAT2. I think that I made the correct decision to use my Tuenti community	5.38	1.060	0.921		
SAT3. I have obtained several benefits derived from my participation in my Tuenti community	5.37	1.139	0.921		
Affective trust^a (TR) (adapted from Kumar et al., 1995; McKnight et al., 2002)					
Integrity (INT)				0.944	0.771
INT1. I believe that the members of my Tuenti community tend to always say the truth	3.96	1.406	0.883		
INT2. I believe that the comments, data and information offered by the members of my Tuenti community are sincere and genuine	4.12	1.254	0.851		
INT3. The members of my Tuenti community are characterised by their frankness and transparency	4.16	1.285	0.892		
INT4. My impression is that the members of my Tuenti community tend to fulfil the commitments they take on	4.33	1.201	0.882		
INT5. In general, I can trust the comments, data and contents offered by the members of my Tuenti community	3.95	1.238	0.882		
Benevolence (BEN)				0.878	0.644
BEN1. The members of my Tuenti community take into account the repercussions (good or bad) that their actions, comments and opinions can have on the rest of the members	4.32	1.295	0.759		
BEN2. The members of my Tuenti community take into account the needs of the rest of the members	4.38	1.383	0.777		
BEN3. The members of my Tuenti community wish to promote common benefit for all	4.12	1.532	0.760		
BEN4. In general, I believe that most of the members of my Tuenti community would not do anything that might deliberately harm the rest of the members	4.40	1.284	0.905		
Social integration (SI) (adapted from Casaló et al., 2007; Herrero and Gracia, 2007; Geyskens et al., 1996)					
Community integration (CI)				0.943	0.804
CI1. My opinions are valued by the other members of my Tuenti community	4.12	1.444	0.887		
CI2. I feel myself emotionally linked to with my Tuenti community	4.74	1.346	0.915		
CI3. In general, to interact and relate with other members of my Tuenti community means much to me	3.84	1.427	0.877		
CI4. My opinions are valued by the other members of my Tuenti community	4.76	1.307	0.907		
Community participation (CP)				0.911	0.673
CP1. I participate in order to stimulate my Tuenti community	3.82	1.543	0.879		
CP2. I take part actively in activities in my Tuenti community	3.73	1.598	0.789		
CP3. I take part in social groups in my Tuenti community	3.68	1.568	0.784		
CP4. I respond to calls for support my Tuenti community	4.43	1.607	0.764		
CP5. I take part actively in socio-recreational activities in my Tuenti community	3.92	1.588	0.878		

^aAll loadings are significant at $p < 0.001$ (based on $t(4,999)$, two-tailed test).

Appendix 2. Discriminant validity coefficients (first-order model)

	PIIT	BEN	FAM	INT	CI	CP	SAT
PIIT	0.907						
BEN	0.138	0.803					
FAM	0.179	0.270	0.904				
INT	0.137	0.652	0.292	0.878			
CI	0.142	0.251	0.437	0.282	0.897		
CP	0.300	0.393	0.630	0.379	0.420	0.820	
SAT	0.118	0.406	0.560	0.497	0.443	0.473	0.916

Note: Diagonal elements are the square root of AVE. Off-diagonal elements are correlations between constructs.

Appendix 3. Discriminant validity coefficients (second-order model).

	SI	FAM	PIIT	SAT	TR
SI	0.841				
FAM	0.649	0.904			
PIIT	0.277	0.179	0.907		
SAT	0.543	0.560	0.118	0.916	
TR	0.436	0.312	0.152	0.499	0.908

Note: Diagonal elements are the square root of AVE. Off-diagonal elements are correlations between constructs.