The Influence of Personality on Active and Passive Use of Social Networking Sites

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ABSTRACT

Managers are more and more interested in social networking sites because they provide opportunities for strengthening relationships with customers as well as site content and service. Using social networking sites effectively, however, depends on understanding both the psychological attributes and social interactions of participants. This paper addresses these topics by presenting the results of a two-study inquiry into the importance of two personality traits (consumer innovativeness and expressiveness) to active and passive use of social networks among Italian consumers. In Study 1 (n = 753) it was found that innovativeness is positively related to active and passive use. Study 2 (n = 277) revealed that self-identity expressiveness and social identity expressiveness positively influence only active use. These results suggest that managers need to distinguish between, and differentially encourage, joining and browsing such sites on the one hand and actively contributing to them on the other. Managers can also enhance the impact of their social networking sites by taking into account social and self-identity expressiveness to increase affiliation and market share and by encouraging consumers to use these sites actively. © 2011 Wiley Periodicals, Inc.

Participation in flexible electronic networks such as the Internet has become a mass phenomenon over the past decade. Consequently, businesses seek to use

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networks in various ways to create or to add value for consumers. One thing that networks do well is enable connections among members of a virtual community. As such, the social Web, which is the online "place" where people gather to share thoughts, comments, and opinions, has exploded. The social Web includes social networking sites (e.g., MySpace, Twitter, Gather, Friendster, Facebook, BlackPlanet, Eons, LinkedIn), but also branded Web destinations (e.g., Amazon, Netflix, eBay), and enterprise sites (e.g., IBM, Circuit City, Cisco, Oracle) where firms try to include social components in their online mix.

Much of the value creation in a social network comes from customer-to-customer processes. Companies such as Hewlett-Packard use virtual communities, and the social networks enabled thereby, to provide technical support for customers. In this way, HP involves customers in producing value for HP brands and also reduces support costs. Texas Instruments hosts a community that trades tips about TI calculators. The community thus adds post-purchase value to TI calculators. Dell uses sites like Twitter to blast out information about coupons and other sales promotions that may then be virally retweeted by network participants. Amazon relies on a community to provide purchase recommendations in the form of book reviews. Amazon thereby implements the classic relationship marketing strategy of helping customers make better decisions, but Amazon does this using advice from other customers. Finally, note that sites like YouTube, del.icio.us, and blogger.com rely on a networked community to provide the content that they then use to create advertising revenue.

To create these kinds of user-generated service and content possibilities, companies must clear two different hurdles: First, they must induce the target audience to join the community, and, second, they must convince at least some of those who join to virtually step in front of the group and actively produce content. It would appear that the current article is one of the first to distinguish between these two different market responses. Moreover, only a modest amount of research has focused on trying to understand the mechanisms behind social network contribution. What little literature there is on active participation tends to focus on contributions by programmers in open source projects (e.g., Bagozzi & Dholakia, 2006). One notable and recent exception, however, is Mathwick, Wiertz, and de Ruyter (2008). Their study focused on the influence of relational norms on social capital in a virtual community where voluntarism, reciprocity, and social trust play important roles.

While Mathwick, Wiertz, and de Ruyter (2008) take a social approach to this question, this paper adopts a more psychological view. According to Lewin (1951), two sets of factors lead to the emergence of a behavior. The first set of factors are individual-level, that is, within the person. These factors include personality traits (Minsky & Marin, 1999), perception (Davis, Bagozzi, & Warshaw, 1989), experience (Carlson & Zmud, 1999), and values (Rokeach, 1970). The second set is external to the person, that is, the environment surrounding the individual. The present studies focus on the individual-level characteristics of social network participants so as to try to understand the drivers that motivate passive and active use of networks. The assumption is that personality traits influence overt behavior, online or offline, and work through subjective norms that in turn lead to behavioral intention and ultimately to actual behavior (Fishbein & Ajzen, 1975).

A search for understanding such traits logically begins with domain-specific innovativeness (Goldsmith & Hofacker, 1991) and its relationships with active and passive use of social networks. After this, expressiveness (Nysveen, Pederson, & Thorbjørnsen, 2005) will be considered.

As the social Web can play a valuable role throughout the entire cycle of product development, market introduction, and market adoption, these studies aim to provide managers with recommendations on how to engage and influence prospects and customers in order to build trusted relationships over time. To do this, managers need to know why people join and browse these networks and why they actively participate. On the other hand, academic researchers need to know if consumer theories that originated from offline social behavior generalize to online social environments (Darley, 2010). The goal for this paper was to contribute some answers to both sets of questions.

The next section presents a brief review of previous research. We then present six hypotheses, followed by two studies that test them. The first study considers the impact of innovativeness on passive and active use of social networking sites. The second study analyzes the impact of identity expressiveness. The paper concludes with a discussion of results, their implications and limitations, and suggestions for future research.

THEORETICAL BACKGROUND

Social Networking

Social networking sites are Web-based services that allow individuals to (1) construct a public or semi-public profile within a bounded system, (2) create a list of other users with whom they share a connection, and (3) view and navigate their list of connections and those made by others within the system (Boyd & Ellison, 2007). One can distinguish between social networking sites, social media sites, and commercial sites. Social media sites are Web sites that allow individuals to share content they have created, such as YouTube (video sharing) and Flickr (photo sharing). Their primary purpose is to publish and to share content. Commercial sites are Web sites used for browsing or purchasing goods and services.

Most activity on a social networking site takes the form of viewing and posting opinions, questions, answers, photos, videos, personal information, and knowledge using the connectivity provided by the community's network platform. Consequently, viewing (passive network use) and posting (active network use) are fundamental elements in the ongoing life of any virtual social network. Posting enables viewing, and for the most part viewing motivates posting. Thus, successful social networking sites manage to promote a virtuous cycle of content creation and content consumption. Social networking sites share this content cycle with social media sites as well as many of the commercial sites mentioned earlier, such as Amazon, a site that needs both review writers and review readers.

Since social networking site users generally do not want to produce content that no one else consumes, and content consumption cannot take place without content production by other users, managers of such sites face a chicken-and-egg problem. Clearly, initial adoption of both site use and active content production is critical. This naturally leads to a discussion of the role of innovativeness.

Innovativeness

Few concepts in the behavioral sciences have as much immediate relevance to consumer behavior as does innovativeness. It is defined as "a willingness to

change," and theorists describe it as a normally distributed characteristic in the consumer population (Gatignon & Robertson, 1991; Midgley & Dowling, 1978). It is therefore a personality-based construct (Manning, Bearden, & Madden, 1995) and as such, one must draw a distinction between adoption behavior (Rogers & Shoemaker, 1971) and the psychological trait of innovativeness (Midgley & Dowling, 1978). Consumer researchers view innovativeness as a latent underlying preference for new and different consumption experiences (whether ideas, goods, or services) rather than acquisitiveness (Venkatraman & Price, 1990). In effect, innovativeness refers to the degree to which an individual is receptive to new ideas and makes adoption decisions independently of the communicated experience of others (Midgley & Dowling, 1978).

Hirschman (1980) conceptualizes innovativeness as a tripartite phenomenon. First, through learning and imagination, consumers acquire knowledge about products (vicarious innovativeness). Second, consumers acquire products (adoptive innovativeness). Third, consumers solve novel consumption problems with products they have on hand (use innovativeness). Goldsmith and Hofacker (1991) developed the domain-specific innovativeness (DSI) scale to measure how innovative a consumer is for a specific product category. A recent study (Goldsmith, 2001), for example, shows that innovative consumers (as measured by the DSI) are more likely to shop on the Internet than are less innovative consumers. In the present studies, the concept of vicarious innovativeness as measured by Pagani's (2007) scale, which integrates the DSI scale with psychological and cognitive indicators to measure innovativeness with reference to digital services, is used.

Given that social networks are still a new phenomenon and therefore a new consumption experience, it is hypothesized that a person with a high level of innovativeness for social networks is more willing to consume the content of others (passive use) and to create new content (active use). Therefore:

H1a: Innovativeness is positively associated with using social networks to actively create comments and updates, and to upload pictures and other content (active use).

H1b: Innovativeness is positively associated with using social networks to browse and to read content (passive use).

Since social networking involves expression, it is logical to turn now to traits related to expressiveness.

Identity Expressiveness

Consumer behavior theory uses self-identity and social identity as explanatory concepts in several distinct, albeit strongly related, research streams on offline behavior. These include self-concept congruity research (Sirgy, 1982), symbolic interactionist studies of products as social stimuli (Solomon, 1983), the role of products in impression formation and communication (Belk, 1988) and symbolic consumption (Hirschman & Holbrook, 1981), studies that classify attitudes according to the psychological needs they meet and propose lists of functions that attitudes serve (Shavitt, Lowrey, & Han, 1992), and the role of social identity in organizational/company identification (Bhattacharya & Sen, 2003). Stryker and

Burke (2000), Mittal (1994), and others view "expressiveness" as a consumer's perception of the ability of a given good or service to express his or her social and personal identities. The centrality of expressiveness in social psychology is further underscored by Mannetti, Pierro, and Livi (2002), who suggest replacing the concept of self-identity with self-expression as a determinant of intended behavior. Identity expressiveness is believed to be a particularly strong determinant of intention and behavior for goods and services that are symbolic or are consumed in public settings (Hirschman & Holbrook, 1981; Richins, 1994).

Social networking sites are communication environments; thus, an intrinsic motivation for using such an environment is the ability to express, that is, to communicate. In a comprehensive model of the appeal of user-generated media, Shao (2009) argues that "producing for self-expression and self-actualization" is a strong motivator for creating and publishing user-generated content. He reviews the literature on this topic but finds little direct empirical evidence to support the argument. Moreover, previous discussions of self-expressiveness in the context of social networking do not distinguish among varieties of self-expressiveness. As applied here, the term "identity expressiveness" refers to behavior that can be interpreted both by oneself in the self-construction of identity and by others in the social construction of identity. Given these two roles, the concept of identity expressiveness can be decomposed into the concepts of "self-identity expressiveness" and "social identity expressiveness" (Thorbjørnsen, Pedersen, & Nysveen, 2007). Thus, social networking sites can be considered means of expressing both self- and social identity.

Self-identity expressiveness, in the context of this study, denotes how and to what extent consumers use social networking sites to display their own identities and values (to themselves as well as to others), while *social expressiveness* denotes the ability to communicate verbally and skillfully when engaging others in social interaction. Moreover, previous studies (Huffaker & Calvert, 2005) show that as social networks offer ways to provide feedback or to link to other users, they can foster a sense of peer group relationships, another important aspect of identity.

Online, passive use is known as "lurking," and such behavior allows the user to draw on content produced by others while maintaining relative anonymity. However, since expressive people are more action oriented and outgoing, they should use the site more actively than less expressive people do. Consequently, the following hypotheses are proposed:

H2a: Self-identity expressiveness does not influence passive use of social networking sites.

H2b: Self-identity expressiveness positively influences active use of social networking sites.

H3a: Social identity expressiveness does not influence passive use of social networking sites.

H3b: Social identity expressiveness positively influences active use of social networking sites.

The proposed conceptual model containing these hypotheses appears in Figure 1.

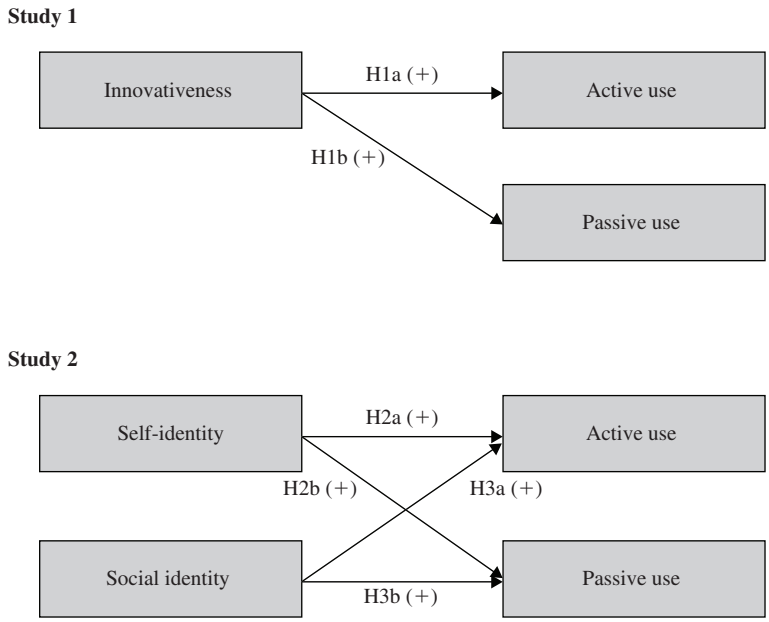

Figure 1. Theoretical framework.

STUDY 1

Study 1 examined whether consumers' innovativeness influences active and passive use of social networking sites.

Sample

Data were collected through an online questionnaire presented to individuals registered on MySpace, Facebook, and Anobii. The survey ran from September 2008 to January 2009. A snowball sampling method was utilized that relies on referrals from initial subjects to generate additional subjects (Goldenberg et al., 2009). Initial subjects were generated from 1450 contacts of a Web company based in northern Italy. These 1450 people (mostly in Italy but some from other countries in Europe), received an e-mail inviting them to fill in the questionnaire using MySpace, Facebook, and Anobii. Two versions of the questionnaire were created, one in Italian and one in English. To enlarge the potential sample, the links to the questionnaires were posted on the social networking sites MySpace, Facebook, and Anobii. The number of questionnaires received was 1016, but 263 were only partially complete, leaving 753 completed questionnaires. The final sample was 98% Italian. It is possible that the use of a snowball sample contributed to a somewhat lower completion rate, but overall the number of usable questionnaires appears within the norm for online surveys (Deutskens, de Ruyter, and Wetzels, 2006). Respondents who did not complete the questionnaire generally exited before the scales for extroversion and innovativeness, providing only information related to usage.

The resulting sample was 73% female and 27% male. The average age was 29, with a range from 14 to 72 years old. Thirty-three percent of the respondents

declared themselves to be members of MySpace, 53% of Facebook, 74% of Anobii, and 26% members of other social network sites. Moreover, 61% declared themselves to be members of multiple social networks.

Measures

Innovativeness was measured using the version of domain-specific innovativeness (Goldsmith & Hofacker, 1991) adopted by Pagani (2007). A sample item reads: "I am first among my friends to learn about new social networks." All items employed a 5-point Likert-type response format where 1 signified "strongly disagree" and 5 "strongly agree." All items from this scale appear in Table 1. To measure active social network use, the scale proposed by Shim, Lee, and Park (2008) was adapted by using six items based on time spent using the active functionalities made possible through the selected social networks: content creation, information sharing, meeting new people, talking to people, talking about hobbies and personal interests, and posting or uploading videos or photos. One item measuring the time spent browsing social network content (passive use) was also included.

Results and Discussion

None of the demographic variables was systematically associated with the measures, so they were disregarded in the subsequent analyses. The first step of Gerbing and Anderson's (1988) two-step procedure requires that researchers assess the measurement model with respect to innovativeness and active use (passive use is measured with one item). Thus, analysis began with a confirmatory factor analysis (CFA) using maximum likelihood estimation. All measures loaded higher than 0.5 (Hulland, 1999) and were retained for analysis. The model yielded a χ^2 of 979.03 on 90 degrees of freedom ($p < 0.01$), the Bentler–Bonett normed fit index was 1.00, the comparative fit index was 1.00, the goodness of fit index (GFI) was 0.95, and the adjusted goodness of fit index (AGFI) was 0.93. Finally, the standardized root mean square residual for the covariance matrix, based on the 5-point Likert items, was 0.087. The average variance extracted (AVE) for innovativeness was 0.46, and the coefficient alpha was 0.69. For active use, the AVE was 0.53, and the coefficient alpha was 0.67.

Discriminant validity for items and constructs was examined in two ways (White, Varadarajan, & Dacin, 2003). First, each correlation should be less than 1.0 by an amount greater than twice its respective standard error (Bagozzi & Warshaw, 1990). Second, the square root of the average variance extracted was compared with the correlation between two latent constructs (Fornell & Larcker, 1981). Discriminant validity is supported when the square root of the average variance extracted exceeds this correlation.

Finally, after these tests, in step two (Gerbing & Anderson, 1988), the research model was implemented and hypotheses tested using estimated SEM path coefficients. The results of the structural model indicated a good fit to the data. The model yielded a χ^2 of 763.02 on 88 degrees of freedom with a Bentler–Bonett normed fit index of 1.00 and a comparative fit index (CFI) of 1.00; the GFI was 0.96, and the AGFI was 0.94. The fit was therefore once again good (Hu & Bentler, 1999). All the emerging paths were statistically significant (Figure 2). As predicted by H1a, innovativeness has a positive impact on active use ($\beta = 0.57$,

Table 1. Scale Items.

Construct	Scale Items	Source
Vicarious innovativeness	I1. I am interested in social networks. I2. I use social networks less than my friends. (R) I3. I would subscribe to a new social network. I4. I am first among my friends to learn about new social networks. I5. I know more about new social networks than others. I6. I am interested in new social networks for their advantages. I7. I think about benefits and advantages of new social networks. I8. If I learn that a new social network is easy, I would be interested in it.	Goldsmith and Hofacker (1991); Pagani (2007)
Passive use	PU1. Time spent browsing social network content created by others.	
Active use	AU1. Time spent participating in content creation. AU2. Share information. AU3. Meet new people. (Study 1 only) AU4. Talk to other people. AU5. Talk about hobby and personal interests. (Study 1 only) AU6. Post/upload videos and photos.	Adapted from Shim, Lee, and Park (2008)
Self-identity expressiveness	EXP4. Using social networking sites is part of how I express my personality. EXP5. I use social networks services to express my personal values. EXP6. I use social networks to express who I want to be.	Thorbjørnsen, Pedersen, and Nysveen (2007); Leung and Wei (1999, 2000); Larsson (2000); Grinter and Eldridge (2001); Kaseniemi and Rautiainen (2002); Kleine and Kleine (2000)
Social identity expressiveness	EXP1. I often talk to others about social networks. EXP2. I often show the SN messages and photos to others. EXP3. Other people are often impressed by the way I use social networking sites.	Thorbjørnsen, Pedersen, and Nysveen (2007); Leung and Wei (1999, 2000); Larsson (2000); Grinter and Eldridge (2001); Kaseniemi and Rautiainen (2002); Kleine and Kleine (2000)

R = reverse coded item.

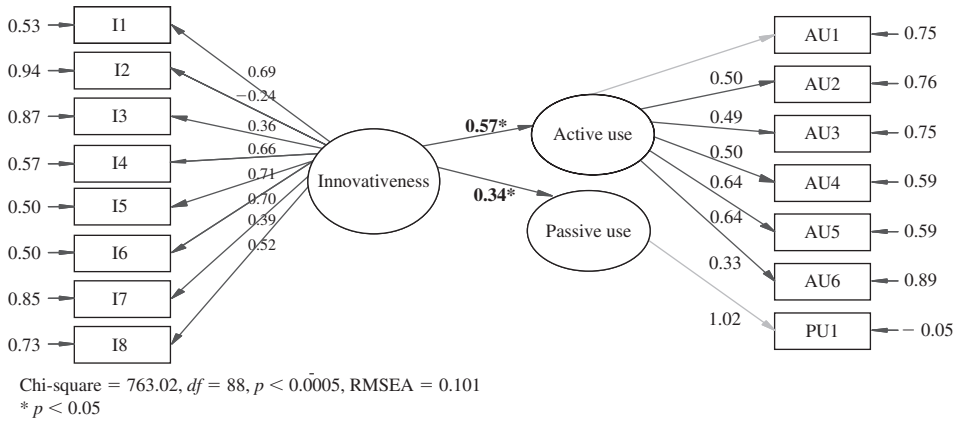

Figure 2. Results of the analysis (Study 1).

$p = 0.02$), and as predicted by H1b, it positively influences passive use ($\beta = 0.34, p = 0.02$). These results suggest that there is a tendency of innovators to be engaged in social networks both actively and passively.

STUDY 2

Study 2 differs from the first study in the construction of the sample; it examined the impact of identity expressiveness on active and passive use.

Sample

The second online survey was carried out from January to February 2009. For the data collection, a discussion group was created on Facebook for the explicit purpose of doing the study. Five hundred twenty-nine people registered with this discussion group and received an e-mail inviting them to fill out an online questionnaire. Of those members, 268 users filled out the questionnaire. A message inviting users to fill out an online questionnaire (in Italian) was also posted on two forums[1] related to social network issues. The message uploaded in these two forums was potentially seen by an additional 187 people. To stimulate replies, respondents were promised the reward of a package of traditional Italian products; a lottery was used to select a winner. The number of questionnaires received was 380, but only 277 (for an overall nominal response rate of 39%) were fully complete. Respondents who did not complete generally filled out only the first page; the survey extended for several pages, a fact that each respondent could see by checking the percentage of completed questions.

The resulting sample ($n = 277$) was 52% female and 48% male. Seventy-seven percent of the respondents declared themselves to be members of Facebook only, 17% also used Windows Live Space, and the remainder also used a handful of other social networks (e.g., Badoo, Linkedin, MySpace).

[1] http://forum.masternewmedia.it/social-network/, http://www.giorgiotave.it/forum/.

Measures

Scales provided by Thorbjørnsen, Pedersen, and Nysveen (2007) for self-identity expressiveness and social identity expressiveness can be seen in Table 1. For example, a social identity expressiveness item was adapted to: "Other people are often impressed by the way I use the social network." Note that studies of text messaging usage have shown that one of the most important ways of expressing one's service use is to discuss the service/message with others and share it with others (Grinter & Eldridge, 2001; Kaseniemi & Rautiainen, 2002; Larsson, 2000). Thus, two items were included with the wording: "I often show social networking messages and services to others" and "I often talk to others about social networking."

With regard to measures representing self-identity expressiveness, this is typically measured by participants indicating the extent to which they consider themselves to be identifying with and expressing personal values (Thorbjørnsen, Pedersen, & Nysveen, 2007). Similar operations also have been used in studies applying identity theory (Arnett, German, & Hunt, 2003; Fekadu & Kraft, 2001; Stryker & Burke, 2000). Concerning active and passive use, the same scales described in Study 1 (see Table 1) were used, except for two items not considered in the active use scale ("meet new people" and "talk about hobby and personal interests") as these functions were not available in all the social networks analyzed.

Results and Discussion

As in the first study, none of the demographic variables was systematically associated with any measures, and so demographics were ignored. The self-identity expressiveness, social identity expressiveness, and active use scales behaved very well in a test of the measurement model (Gerbing & Anderson, 1988). To test the measurement model, maximum likelihood CFA was used, revealing an excellent fit to the three-factor model: The Bentler–Bonett normed fit index was 0.96, the CFI was 0.98, the GFI was 0.96, and the AGFI was 0.93. The model χ^2 was 73.06 on 32 degrees of freedom ($p < 0.001$). Finally, the standardized root mean square residual for the covariance matrix, based on the 5-point Likert items, was 0.049. Reliability tests showed an AVE for self-identity expressiveness of 0.56 with a coefficient alpha of 0.77; for social identity expressiveness, AVE was 0.74 with a coefficient alpha of 0.89; and finally, for active use, the AVE was 0.37 and alpha was 0.68.

The results of the structural model analysis indicated a good fit to the data (see Figure 3). The model yielded a χ^2 of 118.88 on 39 degrees of freedom ($p < 0.01$) with a Bentler–Bonett normed fit index of 1.00, a CFI of 1.00, a GFI of 0.98, and AGFI of 0.97. The fit was therefore once again good (Hu & Bentler, 1999). The root mean square error of approximation (RMSEA) was 0.078 and the standardized root mean square residual (SRMR) was 0.075.

Self-identity expressiveness had a significant and positive impact on active use ($\beta = 0.07, p < 0.05$), but not on passive use, even while the coefficient was positive ($\beta = 0.10, p > 0.05$). This is in line with the predictions of hypotheses H2a and H2b. Likewise, as predicted by H3a, social identity was positively and significantly related to active use ($\beta = 0.01\ p < 0.05$), but social identity expressiveness had a nonsignificant impact on passive use ($\beta = 0.09, p > 0.05$), as proposed in H3b. Thus, higher levels of self-identity and social identity expressiveness seem to lead

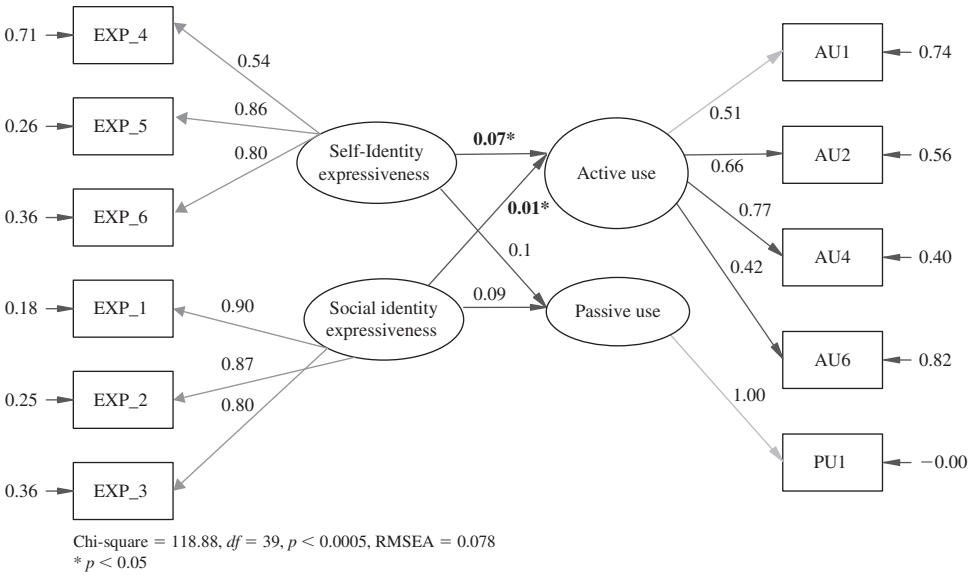

Figure 3. Results of Study 2.

to greater active use of these networks and have a weak or nonexistent impact on passive browsing.

DISCUSSION

The purpose of the present study was to assess the influence of two personality characteristics, innovativeness and identity expressiveness (self-identity expressiveness and social identity expressiveness), on passive and active use of social networks. Based on previous empirical findings and theoretical considerations, both constructs were hypothesized to be positively related to active social network use. Innovativeness was also hypothesized to be positively related to passive social network use. Since expressive people are more action oriented and outgoing, it was predicted that identity expressiveness does not impact passive browsing of social network content even while highly expressive individuals are more likely to actively create content. The results supported these hypotheses. As levels of innovativeness for social networks increased, passive and active use increased, suggesting that innovative users are more likely to use and contribute to these sites. Likewise, it appears that as users' motivation to express their self or social identities increases, contributions also increase. On the other hand, a nonsignificant relationship was found between expressiveness (both self-identity and social identity) and passive use. This pattern of findings is important because it better helps us understand why individuals join and then actively use virtual social networks.

People differ in how innovative they are with regard to new stimuli. In the case of social networks, people clearly vary in how interested they are and how eager they are to use them. Knowledge of social networks is also positively associated with use. From H1a and H1b it was found that it is those users who understand what social networks are all about, how they can be used, and what

benefits they bring that are most likely to use them and, more importantly, to contribute to them. This finding is consistent with other studies of innovative consumer behavior that show that the earliest buyers of new products are unique in that they are interested in the product category, knowledgeable about it, want to try the newest things, and tend to be heavy users of the category (cf. Goldsmith, 2000). Thus, the findings suggest that if managers can identify the more innovative users among the social network citizenry, they can encourage them to join and then actively contribute. Given the innovators' knowledge and interest in the topic, perhaps this encouragement might take the form of providing new topic-relevant information or opportunities to contribute that the innovators can take advantage of. Topic-relevant rewards for contribution might also encourage innovators to increase their contributions. These rewards might be low in cost but meaningful if the innovators themselves suggest them.

Because self-identity and social identity expressiveness are positively related to active use of social networks, efforts to appeal to this motivation might increase content, thereby increasing the benefits from that content. Advertising could emphasize the identity benefits of contributing to the social network. At this time, some companies are using classic sales promotion tools to encourage consumers to submit photos or recorded footage of their product in action. A recent contest for Procter & Gamble's quick-clean product Swiffer challenged consumers to create short videos describing "how they left their old cleaning method for a new romance with Swiffer." The contest itself drew a considerable amount of attention. Then the top ten videos were posted to YouTube and consumers were allowed to vote on the winner. Dove's 2007 "Campaign for Real Beauty" enabled consumers to create advertisements which were voted on by a panel of judges. Online viewers were then allowed to vote on the five semifinalists, with the winning entry being shown during the 2008 Academy Awards broadcast. By appealing to consumers' tendency to self- and social identity expressiveness, such contests might be made even more effective.

The social network platform itself might be designed with added features that promote the expression of identity, such as blogs, videocasting, and other self-presentation activities, which allow the significance of who one is and what one does to be revealed. In fact, a content analysis of the most-linked-to blogs confirms that "A-list" bloggers reveal more information about themselves than other bloggers and actively engage in impression management (Trammell & Keshelashvili, 2005). Network managers could celebrate those who excel in expressing their identities, thereby encouraging more and more of this aspect of use. Successfully targeting the right users can help overcome the chicken-and-egg problem facing network managers (Parker & van Alstyne, 2005).

The value proposition of an online social network, whether that be a standalone network like Facebook or one like Amazon's that is embedded in a retail context, depends on the balance between content creation and content production. Results from Study 2 imply that these two activities depend on different psychological factors; active content production is likely to be produced by those with high tendencies for self-expression. In other words, social networking sites represent an ecology of different personality types creating and consuming content. Thus, such networks are not pure *peer networks*, where everyone is homogeneous, but are in fact what economists call *two-sided networks* (Parker & van Alstyne, 2005). There are two sides making a content exchange, and each side is likely to react differently to the marketing mix offered by the network platform manager. Network managers must strive to get the balance between the sides right.

CONCLUSION

While many attempts to create online communities fail, others are vastly popular, attracting more and more users all the time. Understanding the drivers of success in this arena is important not merely to social networking sites such as Facebook, but also to many commercial sites that are attempting to harness the energy created in the content generation and consumption cycle. Magazines like *ComputerWorld* hope to engage readers by asking them to comment on articles that are published online; music sites like last.fm encourage listeners to share their listening habits and preferences; and the microblogging service Twitter not only needs users to follow other users, but to actively tweet as well. Additional potential examples of online community exchanges are not limited to media companies or Internet pure plays. For example, at MyStarbucksIdea, users are encouraged to participate by generating new product ideas, discussing these, and then voting for the ideas they would like to see implemented by the Starbucks chain. Thus, any manager who seeks to use social networks to improve customer experience and promote a brand needs to have a better understanding of the factors that lead to both passive, and especially, active use. This study highlights the psychological reasons behind these two uses.

It is clear that a great deal of additional research remains to be done before there is a satisfactory understanding of social network phenomena. Especially needed is research that complements analysis at the individual level with the level of the network and also considers social influence processes on active and passive behavior. Conversely, there are many important concepts from consumer behavior that would be worth examining in the context of online social networks. For example, Shao (2009) suggests that self-actualization might play an important role, and other psychological constructs such as empathy, creativity, congruency, notions of justice, and self-confidence are also likely to be related to active use. Additional studies could look into the Big 5 traits (openness, conscientiousness, extraversion, agreeableness, and neuroticism), known to be important in offline behavior, in order to explore their influence on active and passive online behavior.

One strong feature of this work comes from the fact that samples were drawn from actual social network users who were familiar with the networks. Another strong feature was the sizable samples, which ensured that the statistical tests would have enough power to detect relationships. On the negative side, however, some limitations of the study reside in the modest generalizability of the findings beyond the largely Italian users of these particular networks and the nonrandom nature of the convenience samples. The findings are also limited in that they concern only two of the many possible influences on social network use. The influence of omitted variables and potential mediating and moderating effects could not be assessed. Finally, all the constructs in the studies were operationalized by self-report survey data. Multiple operationalizations, particularly adding behavioral data, would no doubt lead to enhanced confidence in our ability to understand online social activity.

It should be noted that social networks are an ideal application for many of the rich consumer behavioral theories that have long enhanced the understanding of offline behavior. The present study shows theoretically consistent similarities between offline and online behavior that contribute to Darley's (2010) call for research into the "subtle" differences between these two modes of consumer

behavior. Since consumers play two roles with respect to online content, both browsing and creating it, online social networks afford double the possibility of applying such theories.

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