Academics' Use of Academic Social Networking Sites: The Case of ResearchGate and Academia.edu

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Introduction

In the past few years, the Internet has seen the advent of academic social-networking sites (ASNS) such as Academia.edu and ResearchGate. These sites allow users to upload academic articles, abstracts, and links to published articles; track demand for their published articles; and engage in professional interaction, discussions, and exchanges of questions and answers with other users. The sites, used by millions (Mangan, 2012), constitute a major addition to scientific media.

This study investigates the nature of the use and the perceived utility of the sites for academics whose professional careers are based on the performance and publication of studies. In a world that offers numerous and diverse online publishing opportunities (sites of formal journals, personal sites and blogs, and general social networks such as Facebook and LinkedIn), the question is what comparative advantage academic networking sites offer and why faculty members use them. Do these sites fit the definition of "social network"? And which of their affordances serve their users?

Literature review

In recent years, professional networks that offer information sharing and communication tools for professional purposes have arisen alongside the general social networks. The best known of them is LinkedIn (LI), which provides a platform on which people and businesses communicate for purposes of working relations, employee search, and career management. Among the additional Academic Social Networking Sites (ASNS) that have evolved in recent years, two-Academia.edu and ResearchGate – offer themselves as professional and social networks of researchers, combining characteristics of social networks with the publication of studies, all adjusted to the needs and comportment of academic researchers (Ovadia, 2014). They accommodate customary social-network elements such as the construction of a personal profile and interactivity with peers along with specific tools for academic

requisites, such as uploading and tagging of articles and tracking of citations (Jordan, 2015).

ASNS have the potential of revolutionizing the patterns of information publication and sharing in the academic world. By offering platforms for interrelations among scholars around the world, they may influence the structure and dynamic of the research community. Official academic publishing is based on acceptance of articles by refereed academic journals – either in print or in online academic databases that are accessible mainly to those who are active in an academic establishment – for which a fee is usually charged. The time that passes between research and the publication of its findings in such a journal is lengthy and may exceed one year. Academic social networks challenge this model and circumvent the hurdles that impede exposure to the public. What is more, they do so easily and at no charge. They encourage authors to upload full-text articles that appeared in academic journals, lectures presented at conferences, and even drafts, and make them accessible to the public (Wilkinson et al., 2003). They also allow readers to respond to an article or ask the author about it (Thelwall & Kousha, 2014), thereby encouraging interaction between readers and researchers.

The literature relates to five main affordances of academic social networks for researchers:

1. *Management of an online persona*: In ASNS, in addition to basic personal details, the researcher may present his or her professional experience, ideas, and capabilities, including the number of citations and downloads of his or her articles, thereby cultivating an online identity and promoting his or her professional reputation (Barbour & Marshall, 2012).
2. *Diffusion of studies*: The platform provides a place where account holders can upload articles to the cybersphere. In this manner, knowledge about a new article rapidly reaches the community that takes an interest in its topic and, accordingly, may be read (Espinoza Vasquez & Caicedo Bastidas, 2015).
3. *Collaboration*: The ability of ASNS to bridge distances encourages cross-disciplinary and cross-border collaborations. Some scholars argue that academic social networks replicate, and in certain cases even improve, the experience of social activity at a conference by helping to create and expand researchers' professional networks (Kelly, 2013). The two networks discussed in this study provide tools (e-mail and internal messaging systems) for direct

communication and presentation of details for the establishment of personal relations among researchers.

4. *Information management*: Veletsianos (2013) suggests that ASNS serve as a source for the collection and organization of personal academic information including ideas, drafts, and anything else that a researcher on the network gleans from articles, references, and citations.
5. *Measurement of impact*: Academic impact is measured in terms of the number of citations of an article and the quality of the journals in which the article appears. Online academic networks offer additional metrics, such as number of persons who read or download an article (Gruzd, Staves, & Wilk, 2011).

Employing the uses and gratifications theory to analyze the use of web sites and social networks

The uses and gratifications theory, an outgrowth of leisure-culture and mass-media studies, posits that media consumers are autonomous and active agents who base their consumption media decisions on a range of personal considerations and cognitive, affective, and social needs. The theory offers a contrast to the critical perspective, which sees media consumers as passive agents who are prone to media manipulations and influences (Rubin, 2002; Katz et al., 1974). It identifies five major types of needs to which media respond:

1. Cognitive needs, including consumption of information and knowledge.
2. Affective needs, including excitation, enjoyment, and pleasure.
3. Social needs, including creating a sense of group belonging, influencing and contributing to others, etc.
4. Individual needs, including the response to personal needs, self-promotion, personal gain, and enhancement of personal confidence.
5. Escapist needs, i.e., using the technology to flee from reality and create an alternative virtual and imagined reality.

The uses and gratifications theory helps to understand the behaviour of those who visit user-generated content sites such as YouTube, Wikipedia, and social networks. Research on users' behaviour in these environments divides the use of the sites into three types: consumption of information, participation in social interaction, and creation of information (Shao, 2009). According to Stafford, Stafford and Schkade (2004), the singular characteristic of the gratifications and users that typify recourse to the Internet, as opposed to the use of television and other traditional media, is the

centrality and the interactive characteristics of the social gratification. Studies on the uses and gratifications of participants in social networks reinforce this point; they repeatedly stress the centrality of the gratification created by *communicating with friends*, establishing relations with existing friends, and finding old or new friends (Raacke & Bonds-Raacke, 2008; Park, Kee, & Valenzuela, 2009). Seidman (2013) notes the centrality of the social calculus as a motive for the use of social networks. The social element, he says, relates more to the need for *a sense of belonging* than to the need for interaction. Other research, among students who use Facebook groups, indicate that one of the gratifications derived from the use of FB is *self-promotion* and the *acquisition of social status* (Park, Kee, & Valenzuela, 2009; Ellison, Vitak, Gray, & Lampe, 2014). Additional studies that look into the gratifications that people seek when they use social networks specify the need for *ego-bolstering* as a principal one Another gratification that typifies the use of social networks is "killing time" and *escapism* (Quan-Haase & Young, 2010).

This study attempts to explain the potential of academic Web sites and create a profile of their use. Given the scanty attention that empirical research has devoted to ASNS to date, this study may enhance our understanding of the allure of these sites and academics' motives for using them. We emphasize two questions in particular: Which motive, the social or the personal, is stronger in using ASNS, and to what extent do users refer to ASNS in ways that are familiar and known in reference to social networks?

Research methods and tools

The research was design to investigate what are the reasons for using ASNS by academics. The following operative questions were stated:

1. What are the characteristics of academics' use of ASNS?
2. What main gratifications do academics obtain by using ASNS?
3. What is the relation between frequency of use and nature of use of ASNS?

This is a quantitative study, based on a survey among faculty members at three different academic institutions in Israel – two colleges and one university. For the purposes of the study, a dedicated questionnaire was constructed, composed of three main sections: Users' demographic characteristics, characteristics of the use of academic networks and motivations for use.

The questionnaires were sent to all faculty members at three institutions. Eighty-one faculty members responded – 57% men and 43% women. They were fifty years old on average (SD = 10.3), ranging in age from twenty-nine to seventy-two. The rate of participant ownership of an account on social-networking sites and academic-networking sites is shown in Figure 1.

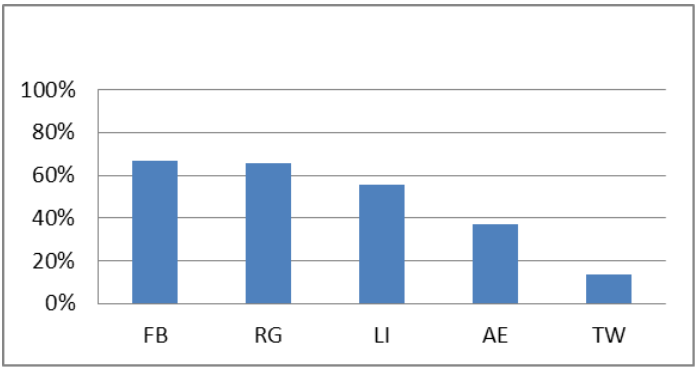

Figure 1. Rate of Account Ownership on Social-Networking Sites

Some 75% of respondents have at least one account with one of the two academic-networks chosen for this study (RG/AE); 25% have accounts with both. The preferred academic network among Israeli academics is ResearchGate, with which more than 65% have an account. The percent of those with an account on RG approximates that of those who have a presence on FB – 67%. Only 37% have an account with AE, 56% have an account with LI, and only 14% have one with TW.

Findings

q1. What are the characteristics of academics' use of ASNS?

Longevity of use

About 42% of those who have accounts with ASNS (N = 59) have had them for more than two years. Some 30% subscribed approximately two years ago, 13% joined the networks in the previous year, and 13% did so the previous half-year.

Frequency of visits to ASNS

Some 38% of those who have accounts with ASNS (N = 60) visit the sites infrequently, 20% do so once per month, 27% visit approximately once per week, and 15% do so almost every day.

Nature of use

To examine the way academics use ASNS, the participants were shown a list of possible modes of activity on each of the two academic networks. The list was composed of six items aggregated into three variables, two items per variable (information consumption, information sharing and diffusion, and interaction with other users). The participants were asked to rank the extent to which they engage in these activities on a five-level Likert scale (1 = *not at all*; 5 = *to a very great extent*). Table 1 presents the findings.

Table 1: Use of ASNS

	Mean	S.D.
Information consumption	2.48	1.1
Information sharing	2.02	1.00
Interaction	1.82	1.00

The table shows that the most common form of activity is information consumption (M = 2.48, SD = 1.11), followed by *information sharing* (M = 2.02, SD = 1.00) and *interaction* (M = 1.82, SD = 1.00). To refute the null hypothesis, an Anova test with repeat measurements was performed, yielding a significant difference among the three groups ($F(2, 57) = .71$ $p < 0.001$). The reason for the difference is that the *information consumption* use is significantly more common than the *information sharing and diffusion* and *interaction* uses.

q2. What main gratifications do academics obtain by using ASNS (acquisition of information and knowledge; enjoyment; group belonging; self-promotion; escapism)?

To answer this question, the participants were presented with twenty-six possible motives for ASNS use. The motives were derived from the uses and gratifications theory and adjusted to the context of social-network use. The participants were asked to rank the extent of their identification with each motive on a five-level Likert scale (1 = *not all*; 5 = *very much*). The factor analysis detected five main groups of gratifications: Self-promotion and ego-bolstering ($\alpha = .964$), Acquisition of professional knowledge ($\alpha = .941$), Belonging to professional community ($\alpha = .889$), Interaction with professional peers ($\alpha = .905$), Escapism ($\alpha = .945$).

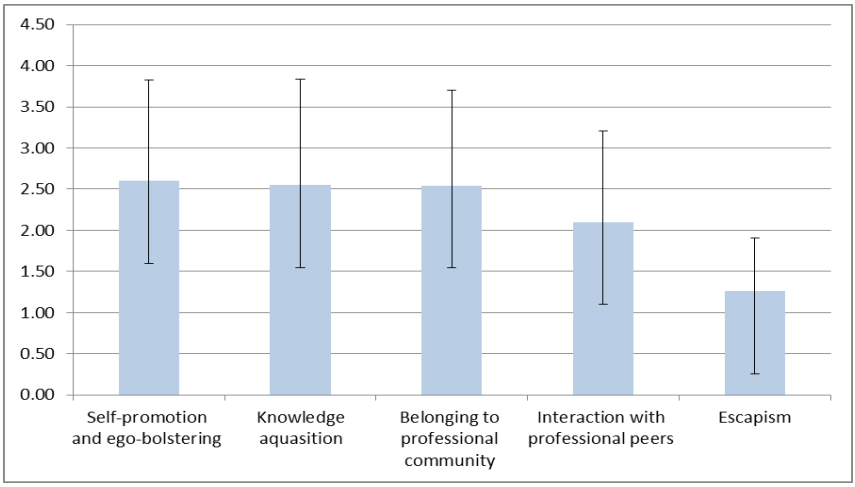

Figure 2. Presents the ranking of the uses and gratifications obtained from ASNS

To check for the presence of significant differences among the four principal motives (self-promotion, acquisition of professional knowledge, belonging to an information community, and interaction with others), an Anova test with repeat measurements was performed among the four complex indicators (the mean of the statements in each factor). The findings show significant differences among the various kinds of gratification and, specifically, that *interaction with professionals* is a significantly less important gratification than *self-promotion and ego-bolstering* and *belonging to a peer community*.

q3. What are the relation between frequency of use and nature of use?

A relation was found between frequency of ASNS use and participant's age. Namely, the older an academician is, the more frequently he or she uses the network ($r = .413$, $p < 0.005$). A relation was also found between frequency of use and each of the three types of uses: Information consumption ($r = .771$, $p < 0.05$), Information sharing ($r = .570$, $p < 0.05$), Interaction ($r = .406$, $p < 0.05$).

Conclusions

This study investigates the uses and gratifications that academic faculty members derive from two academic social-networking sites, Academia.edu and ResearchGate. It invoked the uses and gratifications theory (Katz, Blumler, & Gurevitch, 1974) as a point of departure and adjusted this genetic theory, developed in the context of mass-media consumption, to the specific context of academic networks and their singularities.

The study was conducted among a relatively small population from three different academic institutions on the basis of a voluntary response to an online questionnaire. It found a difference among these institutions in the extent of use of the various networks and faculty members' perception of the gratifications that the networks give them.

The findings indicate that researchers use ASNS mainly for consumption of information, slightly less for sharing of information, and very scantily for interaction with others. This finding itself indicates that academic networks do not function as other social networks do. In social networks such as Facebook, interaction with others is the main use (Boyd & Ellison, 2007); academic networks, in contrast, are used chiefly for information consumption and are perceived more as a database of sorts than as a place to establish social or professional relations and interact with others.

As for the gratifications that motivate users to visit ASNS, four main ones were found: self-promotion and ego-bolstering, acquisition of professional knowledge, belonging to a peer community, and interaction with peers (Park, Kee, & Valenzuela, 2009). Escapism, a factor that typifies the gratifications that social networks deliver (Quan-Haase & Young, 2010), proved to be weak if not irrelevant in regard to academic networks.

The four main gratifications that typify the use of academic networks largely reflect the uses and gratifications theory but require some adjustment. The original theory separates emotional factors from personal ones (Katz, Blumler, & Gurevitch, 1974); in ASNS, self-promotion (personal) and ego bolstering (affective) are inseparable. The "social" factor, in contrast, is split in two where academic networks are concerned: belonging to a peer community and interaction with peers are identified as separate factors. They are different in that peer-group affiliation does not necessarily require interaction with others and is manifested in unilateral action by the user. Interaction with others, in contrast, entails user initiative and responsiveness.

The centrality of the self-promotion and ego-bolstering motive stresses the utilitarianism that drives the use of social networks generally and academic networks specifically. The creation of social capital and personal advancement by means of activity on social networks is well known in research on such networks (Ellison, Vitak, Gray, & Lampe, 2014; Valenzuela, Park, & Kee, 2009). From this standpoint, the behaviour of users of ASNS shows that they recognize the network as a mechanism for the creation of social capital and for an attempt to transform it into professional

capital. In a world where academic faculty members are judged by the number of works that they publish and the number of citations that the works receive an instrument that allows them to influence the extent of their exposure and increase the likelihood of citation delivers much power and utility.

The high score of the *consumption of professional academic information* gratification stresses the importance that academics see in having direct and open access to academic information as argued by Veletsianos and Kimmons (2011).

The separation between the two social gratifications *The sense of belonging* and *Interaction with professional peers*, and the fact that the sense of *belonging to a community of practice* was ranked higher strengthen Seidman's (2013) notice the social gratification of social networks relates more to the need for a sense of belonging than to the need for interaction.

The fact that interaction in this environment and academics' motivation to engage in it are significantly weaker than the other uses and gratifications could be explained on the ground that the social potential of ASNS has not yet been fully realized by the academics because they are so new.

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