

# Usage of academic social networking sites by Karachi social science faculty: implications for academic libraries

Muhammad Yousuf Ali and Joanna Richardson

## Abstract

The last decade has seen the emergence of academic social networking sites (ASNS) as a vehicle for scholars to promote their research and communicate with other scholars in their field. Given the small number of studies on the use of such sites by Pakistani academics, the authors conducted an exploratory study of social science faculty members at five Karachi (Pakistan) public sector universities. Analysis of the 68 valid responses revealed that the primary reason for accessing an ASNS was to search for articles on the site. Results also showed that accruing citations was the main reason for which respondents uploaded their own publications. The findings validate a role for librarians to support academics in their creation of effective online academic profiles.

**Keywords:** Academic social networking sites, research promotion, scholarly communication, resource discovery, research profile, professional development

## 1. Introduction

The scholarly information lifecycle has traditionally focused on publications as the key outputs of the process. However, the growth of social media and networked technologies has altered the cycle to include newer media such as blogs, podcasts, and networking sites, all of which expand a scholar's profile in new and increasingly interactive ways. The advent of academic social networking sites (ASNS) specifically has prompted research into their usage as well as their potential to be a proxy for measuring the impact of a scholar's research outputs (Espinoza Vasquez and Caicedo Bastidas, 2015; Mikki *et al.*, 2015; Thelwall and Kousha, 2015; Hoffmann *et al.*, 2016; Yu *et al.*, 2016).

If, as Thelwall and Kousha (2015, p. 876) suggest, ASNS are modifying traditional patterns of scholarly communication by providing an alternative means of discovering research outputs, then it is important to understand not only the characteristics of the member academics but also the principal motivations for their engagement with these websites and their services. Given the role of libraries in supporting researchers throughout the whole scholarly communication lifecycle, a general understanding of how academics use ASNS will enhance the ability of librarians to provide effective advice and resources.

This paper reports on a brief survey which examines the usage of academic social networking sites by academic staff within the social science faculties at five public sector universities in

Karachi, Pakistan. In analysing the survey results, the authors discuss the major role which libraries can play in assisting ASNS members to maximise their engagement with these sites.

## 2. Related research

### 2.1 Motivation for using academic scholarly networking sites

Social network sites have been defined by Ellison and Boyd (2013, p. 158) as:

[...] a networked communication platform in which participants 1) have uniquely identifiable profiles that consist of user-supplied content, content provided by other users, and/or system-provided data; 2) can publicly articulate connections that can be viewed and traversed by others; and 3) can consume, produce, and/or interact with streams of user-generated content provided by their connections on the site.

In their research on *online social networks*, Berger *et al.* (2014, p. 147) categorise them as either user-oriented sites, e.g. Facebook and LinkedIn, or content-oriented sites, such as Twitter and YouTube. According to Relajo and Pilao (2016, p. 95),

Structural changes to the scholarly environment are taking place as a result of the introduction of Web 2.0 technologies, which have given rise to Open Science 2.0 initiatives, such as open access publishing, open data, citizen science, and open peer evaluation systems. In turn, this is leading to new ways of building, showcasing, and measuring scholarly reputation through emerging platforms, such as ResearchGate.

The last decade has seen the emergence of academic social networking sites (ASNS), each offering its own suite of tools to support a range of research activities (Bullinger *et al.*, 2010). Jordan (2014) defines them as websites aimed explicitly at the academic community which allow users to create a profile and make connections with others. Espinoza Vasquez and Caicedo Bastidas (2015, p. 1) have identified five broad services provided by ASNS: “(1) collaboration, (2) online persona management, (3) research dissemination, (4) documents management, and (5) impact measurement”. Popular examples include, but are not limited to, Academia.edu, Mendeley, and ResearchGate.

Given the impetus to encourage the use of social media in general, and ASNS in particular, as a vehicle for scholars to promote their research as well as to communicate with other scholars, the literature reflects an increasing number of publications which have been written about the relative merits and advantages of ASNS (Ovadia, 2014; Thelwall and Kousha, 2014; Nicholas *et al.*, 2015; Thelwall and Kousha, 2015; Relajo and Pilao, 2016).

Positive features include providing members with “a place to create profile pages, share papers, track views and downloads, and discuss research (Van Noorden, 2014, p. 126), and with the ability to both “provide measures of academic impact” (Espinoza Vasquez and Caicedo Bastidas, 2015, p. 2) and “build meaningful and lasting collaborative partnerships” (Relajo and Pilao, 2016, p. 100).

Concurrently concerns have been expressed regarding privacy (Berger *et al.*, 2014, p. 158), commercialisation of content and copyright issues (Lupton, 2014, p. 3), managing multiple profiles across ASNS (Espinoza Vasquez and Caicedo Bastidas, 2015, p. 4), and the lack of longitudinal data on the use of ASNS over time (Hoffmann *et al.*, 2016, p. 773).

Bullinger *et al.* (2010) have categorised what they term *social research network sites (SRNS)* on the basis of underlying functionalities: identity and network management, communication, information management, and collaboration. The ability for a member to maintain their profile, supply detailed information on their current work and interests, as well as follow other users they are interested in to keep track of their activities, is potentially an incentive to join one or more of these sites.

For the purposes of this paper, a primary interest was identifying the motivation factors which influence academics to join an ASNS. Rad *et al.* (2014) have developed a conceptual model for identifying the factors that impact the adoption of SRNS among researchers for collaboration; however, it has yet to be tested. A very large research project undertaken in Norway in the broader sphere of social network sites found that while the primary motivation was to make, maintain, and foster social relationships, “people often have multiple reasons for using SNSs” (Brandtzaeg and Heim, 2009, p. 151). A number of recent studies of ASNS have highlighted the desire to network and / or collaborate with peers, while identifying several other motivators.

Based on his survey of the use of Facebook and ResearchGate among research scholars at North Eastern Hill University, Chakraborty (2012, p. 24) reported that “almost 70% respondent (majority are from social science background) claim SNS as a research tool; on the contrary remaining 30% respondent (majority are from pure science background) think that SNS has no role in research and education”.

In 2013, Grudz and Goertzen surveyed scholars belonging to three technology associations as to their professional use of social media. Although at the time the most popular sites were non-academic, many scholars also indicated that they were interested in exploring the use of academic social networking sites such as Academia.edu and ResearchGate. The authors attributed this interest to the “difficulties associated with managing personal and professional identities on non-academic social networking website such [sic] Facebook” (p. 3339). The study by Pscheida *et al.* (2013) on Saxon researchers revealed that just 12.4% were using ASNS. Interestingly strongly collaborative tools such as videoconference, social network sites and content sharing were predominantly used by researchers in the disciplines of social sciences, economics, and law (p. 176).

In its 2014 survey, *Nature* (Van Noorden, p. 127) reported that:

The most-selected activity on both ResearchGate and Academia.edu was simply maintaining a profile in case someone wanted to get in touch — suggesting that many researchers regard their profiles as a way to boost their professional presence online. After that, the most popular options involved posting content related to work, discovering related peers, tracking metrics and finding recommended research papers.

Chen *et al.* (2014, p. 325) have suggested that “Large amounts of users hope to make friends with other users for potential academic collaborations in ASNSs”. Like Van Noorden, Levy *et al.* (2016, p. 63) have highlighted the use of ASNS for “career development, paper distribution and short-term interactions” rather than for long-term social interactions. In Jordan’s (2014) survey of users affiliated with UK’s Open University, while respondents could see the potential for the sites’ use in supporting collaboration, they tended not to have actively used it in this way.

Lupton (2014) used social media to invite interested academics to complete a survey on how they made use of social media, including ASNS, in their professional work. Although the respondents could not be considered as representative of the general academic population, they shared some useful insights:

The opportunity to establish global networks with a wide range of academics and people outside academia, promote a diversity of relationships that otherwise would not have been achieved, achieve horizontal connections including academics at all levels of seniority, and discover serendipitous connections from outside one’s usual networks were greatly valued by many respondents. The ability to share material with diverse groups was also valued, as were various uses for research and teaching (p. 30).

In 2015, research by Mikki *et al.* revealed that 37% of researchers at the University of Bergen have at least one profile from a possible five academic network sites, including ASNS: ResearchGate, Academia.edu, Google Scholar Citations, ResearcherID and ORCID. While the authors concluded that the various services had reached critical mass within their university, they did not investigate the primary motivations for academics having joined. Similarly Bonaiuti (2015)’s study of 260 Italian scholars in pedagogy, as identified by the nation’s scientific discipline classification system, revealed widespread use of ASNS, “... although it is not easy to identify in detail the reasons whereby some researchers seem to be more active than others” (p. 9).

An in-depth study of the use of a specific ASNS (Mendeley) by Jeng *et al.* (2015) showed that the “top-two motivations for joining a group were keeping up with a user’s research domain and following topics that the community is paying attention to. The motivations of expanding current social networks and keeping in touch with current contacts received a lesser degree of agreement” (p. 897). Mohammadi *et al.* (2016) have examined Mendeley in terms of its ability to bookmark publications for later reading. They suggest that these readership counts could be useful in reflecting a level of scholarly impact; such functionality could constitute an incentive to establish a profile on this particular ASNS.

Dermentzi *et al.* (2016, p. 329) have highlighted the perceived usefulness of social networking sites, including ASNS, in maintaining a professional image. Manca and Ranieri (2016) have reported that while Italian faculty members make some use of ASNS, such as ResearchGate and Academia.edu, for personal, teaching and professional reasons, the usage is quite low.

A number of recent publications have highlighted additional incentives for academics to engage with ASNS. While considering ASNS to be still in too early a stage to fully gauge their impact on facilitating collaborative partnerships among researchers, Relajo and Pilao (2016, p. 100) suggest that researchers could use them to build meaningful and lasting relationships. In their comparative analysis of ASNS, Espinoza Vasquez and Caicedo Bastidas (2015) have reported that researchers usually have several profiles. Additionally Ward *et al.* (2015), in working with researchers in the United States and Europe, discovered that many of these researchers had either dormant or pre-fabricated ASNS profiles with incomplete profiles. As a consequence, researchers ran the risk of “their digital persona potentially misrepresenting their academic achievements” (p. 196). These authors, therefore, recommended that researchers keep their profiles up-to-date, even if not wishing to engage with other functionality.

Hammarfelt *et al.* (2016) have contextualised their research in terms of bibliometric indicators:

Models using Web of Science data are limited to fields, particularly in the areas of natural science and medicine, where a considerable number of publications are indexed in the database. The coverage of the social sciences and the humanities is rarely high enough for evaluative purposes ... traditional bibliometric methods are less attuned to the research practices of the humanities and the social sciences ... (p. 301).

They suggest that alternative indicators will undoubtedly need to be considered in future. Although not naming social media or ASNS per se, they have provided an opening for an ongoing discussion at least within Sweden. For their part, Wilsdon *et al.* (2015) have openly championed the need for a new framework for “responsible metrics”, specifically in regard to the UK’s Research Excellence Framework. Following on from Hammarfelt *et al.*, they note that the social sciences and humanities have a large number of national or niche journals which are not indexed in bibliometric databases (p. 52). They suggest that ASNS “can be used for assessing an aspect of the usage of publications based on numbers of downloads, views or registered readers” (p. 40) and that “Bookmarking services like Academia.edu, Mendeley and ResearchGate offer the prospect of the earlier prediction of papers that will become highly cited, and the measurement of social media sharing, and other online mentions of research, raises the possibility of quantitative data that provides some evidence for the impact of research beyond its value in academia” (p. 118).

Thus, academics within areas such as the social sciences and humanities may in future be motivated to use ASNS to establish professional profiles, so as to generate quantitative data based on alternative bibliometric indicators.

## ***2.2 Use of academic social media networking sites by Pakistani academics***

While there have been a number of recent studies on the use of social media in general by Pakistani university students, only five surveys have included academics. Khan and Bhatti (2012) explored different applications of social media for the marketing of library and information resources and services; data was collected from both librarians and academics

teaching in the area of library and information (LIS) studies. Jan and Anwar (2013) have analysed the citation impact of LIS faculty members from eight Pakistani universities on the basis of their profiles in Google Scholar. In their survey of research publishing by Pakistani LIS scholars, Ali and Richardson (2016) have reported that 75 of 104 respondents (72.11%) indicated that they had used a scholarly network. In 2016, Sheikh surveyed faculty within the COMSATS Institute of Information Technology at Islamabad regarding their use of ASNS, and concluded with 3 brief recommendations for libraries; the study included Zotero and LinkedIn (the latter being the most heavily used by that cohort), which are generally regarded as having a different primary focus from the ASNS discussed by the authors in the literature review above (2.1). In a recent survey, the authors (Ali and Richardson, 2017) have analysed the profiles of Pakistani LIS scholars who are members of ResearchGate.

No study has been done to date on the use of academic social networking sites by Pakistani social science academics. In conjunction with the academic use of ASNS in Pakistan, another area which has not been fully explored is that of the implications for libraries in supporting academics' use of these sites. This paper is intended to help address these gaps.

### **3. Research objectives**

The main objective of this study is to examine the use of academic social networking sites among social science faculty members in Karachi public sector universities in order to identify opportunities for libraries to provide effective advice and resources to this cohort. Important aspects include membership in multiple ASNS, the use of ASNS to support research activities, and principal motivations for the use of ASNS.

This study focused on the following research questions:

1. Which is the most popular ASNS used by this cohort?
2. What are the motivations for this cohort to join academic social networking sites (ASNS)?
3. What are the motivations for this cohort to upload their own publications to ASNS?
4. What are the implications, if any, for libraries from understanding the motivations for scholars to join an ASNS?

### **4. Methodology**

Survey methodology was used; a questionnaire was designed and pre-tested before being circulated to the target population. Ethical clearance, i.e. clearance by an Institutional Review Board (IRB), was not required, since the IRB process in Pakistan is principally used for funded scholarship. The research reported in this paper was not undertaken as part of a funded project.

Following a method similar to that used by Ali and Richardson (2017) in their study of ResearchGate, this study has used purposive sampling as the sampling technique. According to Tashakkori and Teddlie (2003, p. 713), this method selects a target group “based on a specific purpose rather than randomly”. The key concepts and objectives, as defined by Oliver (2006, p. 244), are:

A form of non-probability sampling in which decisions concerning the individuals to be included in the sample are taken by the researcher, based upon a variety of criteria which may include specialist knowledge of the research issue, or capacity and willingness to participate in the research. Some types of research design necessitate researchers taking a decision about the individual participants who would be most likely to contribute appropriate data, both in terms of relevance and depth.

Purposive sampling techniques are primarily used in qualitative studies. The main goal of purposive sampling is to focus on particular characteristics of a population that are of interest. The sample being studied is not representative of the population; therefore, the main disadvantages of purposive sampling include the inability to generalise research findings (Dudovskiy, 2016).

However, the advantages for the authors were threefold: (1) undertaking this process in the early stages of current research could inform research questions and research design for a later, more in-depth study; (2) it supported the qualitative—rather than quantitative—focus of the authors’ study (Teddlie and Yu, 2009, p. 77); and (3) although the data cannot be used as a type of predictor for larger populations, the data from this small sample could be compared later against other similar samples.

Data was manually collected from five public sector universities in Karachi, each of which has a faculty of social sciences. Names of current staff members were identified from the relevant department web pages; visiting faculty members and faculty on leave were excluded. The valid names were entered into Microsoft Excel and then manually checked to determine whether the individual was a member of ResearchGate.

An online survey form was distributed via email. Statistical package SPSS Version 21 was used for the calculations.

## **5. Data analysis**

The total number of current social science faculty in the five Karachi public universities, who were neither a visiting faculty member nor on leave, was 372. Of this number, 98 (or 26.34%) were a member of at least one ASNS. Each of the 98 faculty members received a survey. 68 responses were received, or a response rate of 69.39%.

### **5.1 Respondent demographics**

The survey captured general demographical data about the respondents, based on gender, academic rank, and years of experience as an academic.

Table 1 shows that 41 (60.29%) scholars were male and 21 (39.71%) were female. This distribution represents a higher proportion of women than that of Ali and Richardson's (2017) survey of Pakistani library and information professionals who were members of ResearchGate, in which male = 73.08% and female = 26.92%.

**Table 1.** Frequency distribution by gender

Gender	Number	Percentage
Male	41	60.29
Female	27	39.71
<b>Total</b>	<b>68</b>	<b>100.00</b>

Table 2 shows that Lecturers and Assistant Professors accounted for 56 (82.35%) of the respondents. This is unsurprising, given the type of distribution one might normally expect to see across faculties. The table also shows that membership in an ASNS is independent from academic experience, with a broad spectrum of years represented by the survey respondents.

**Table 2.** Frequency distribution by years of experience as an academic

Years of experience	Years of experience as an academic by rank (n=68)							
	Academic rank							
	Lecturer		Assistant Professor		Associate Professor		Professor	
	No.	%	No.	%	No.	%	No.	%
0-5	8	11.77	3	4.41	0	-	0	-
6-10	7	10.30	4	5.88	0	-	0	-
11-15	0	-	11	16.17	0	-	0	-
16-20	0	-	13	19.12	0	-	0	-
21-25	0	-	7	10.30	1	1.47	0	-
26-30	0	-	3	4.41	3	4.41	1	1.47
> 30	0	-	0	-	1	1.47	6	8.82
<b>Total</b>	<b>15</b>	<b>22.07%</b>	<b>41</b>	<b>60.29%</b>	<b>5</b>	<b>7.35%</b>	<b>7</b>	<b>10.29%</b>

Figure 1 shows the distribution of respondents by participating universities. Despite its name, the Institute of Business Administration (IBA) was granted the status of independent, chartered university in 1994 by the Sindh government. Together with the University of Karachi (UoK) and Sindh Madressatul Islam University (SMIU), they accounted for 49 responses, or 72.06% of all responses received. The Federal Urdu University of Arts, Science & Technology (FUUSAT) and Benazir Bhutto Shaheed University Lyari (BBSUL) accounted for the remaining 19 responses, or 27.94%.

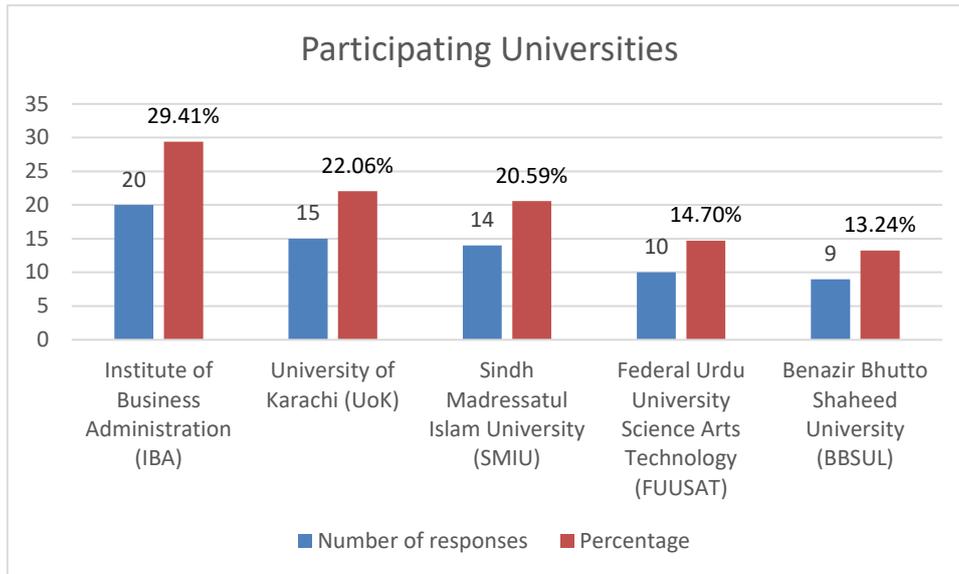


Figure 1: Frequency Distribution by University Affiliation

## 5.2 Choice of academic social networking sites

Research Question 1: Which is the most popular ASNS used by this cohort?

From a list of 5 major ASNS, respondents were asked to indicate their preferred option. Table 3 shows that the majority of respondents (52.94%) preferred ResearchGate. Academia.edu and Google Scholar were preferred by 39.71%, with Assistant Professors accounting predominantly for their usage. Less than 5% of respondents ranked either Mendeley or Microsoft Academic as their preferred ASNS.

**Table 3.** Frequency distribution by ASNS

Academic rank	Academic social networking site (n=68)									
	ResearchGate		Academia.edu		Google Scholar		Mendeley		Microsoft Academic	
	No.	%	No.	%	No.	%	No.	%	No.	%
Lecturer	8	11.76	5	7.35	2	2.94	0	-	0	-
Assistant Professor	17	25.00	8	11.77	11	16.18	3	4.41	0	-
Associate Professor	6	8.83	1	1.47	0	-	0	-	0	-
Professor	5	7.35	0	0	0	-	0	-	2	2.94
<b>Total</b>	<b>36</b>	<b>52.94%</b>	<b>14</b>	<b>20.59%</b>	<b>13</b>	<b>19.12%</b>	<b>3</b>	<b>4.41%</b>	<b>2</b>	<b>2.94%</b>

Respondents were also asked whether they had joined a single ASNS or had joined multiple ASNS. As shown in Table 4, more than 80% of the respondents had joined more than one ASNS, with all Professors belonging to multiple ASNS.

**Table 4.** Distribution by type of membership

Academic Rank	(n=68)			
	Single ASNS		Multiple ASNS	
	No.	%	No.	%
Lecturer	3	4.41	12	17.65
Assistant Professor	9	13.24	32	47.06
Associate Professor	1	1.47	4	5.88
Professor	0	-	7	10.29
<b>Total</b>	<b>13</b>	<b>19.12%</b>	<b>55</b>	<b>80.88%</b>

### 5.3 Principal purpose for usage of ASNS

Research Question 2: What are the motivations for this cohort to join academic social networking sites (ASNS)?

In Table 5, more than half of the respondents (54.41%) indicated that their primary purpose for joining an ASNS was to search for articles. Nearly one-fifth (19.12%) were specifically searching for those full-text articles which could be downloaded, as opposed to having to request a copy from the author, for example. One-fifth (20.59%) were interested in interacting with peers, either generally or more specifically to share details of their research. A very small number of respondents (5.88%), specifically Professors, had joined primarily to remain up-to-date with the latest research in their discipline. Professors were the only cohort which did not identify either content discovery or access as their primary reason for using an ASNS.

**Table 5.** Distribution by principal purpose for usage

Rank	Purpose for usage of ASNS (n=68)									
	Searching for articles		Downloading full-text articles		Sharing existing research project with experts in the same field		Interacting with peers		Staying up-to-date with latest research trends	
	No.	%	No.	%	No.	%	No.	%	No.	%
Lecturer	11	16.18	0	-	3	4.41	1	1.47	-	-
Assistant Professor	24	35.29	11	16.18	5	7.36	1	1.47	-	-
Associate Professor	2	2.94	2	2.94	0	-	1	1.47	-	-
Professor	0	-	0	-	0	-	3	4.41	4	5.88
<b>Total</b>	<b>37</b>	<b>54.41%</b>	<b>13</b>	<b>19.12%</b>	<b>8</b>	<b>11.77%</b>	<b>6</b>	<b>8.82%</b>	<b>4</b>	<b>5.88%</b>

### 5.4 Principal reasons for uploading research publications

Research Question 3: What are the motivations for this cohort to upload their own publications to ASNS?

Faculty members were asked to indicate the main motive for uploading any of their research publications to the ASNS which they had joined.

Table 6 shows that the main reason for respondents to upload their research publications was to accrue citations (38.23%). This was followed relatively closely by a desire to have their publications downloaded (27.95%). Marketing and publicising their research ranked third (14.71%). Having their research outputs either “viewed” or “read” on the ASNS ranked fourth (13.23%) in importance. A distant fifth (5.88%) was allocated to sharing information about their research with either students or early career researchers.

The distribution of the four main reasons varied across the four academic ranks. However, interestingly 20% (3/15) of Lecturers and 17% (7/41) of Assistant Professors selected “marketing and publicising” as their primary motive, whereas no Associate Professor or Professor selected this category. Further research is required to determine whether this was a factor of different professional priorities for the more senior academic positions.

**Table 6.** Distribution by main reasons for uploading publications

Rank	Purpose for uploading publications (n=68)									
	Marketing and publicising		Citations		Downloads		Views / Reads		Information sharing with students / early career researchers	
	No.	%	No.	%	No.	%	No.	%	No.	%
Lecturer	3	4.41	4	5.88	5	7.36	2	2.94	1	1.47
Assistant Professor	7	10.30	17	25.00	12	17.65	4	5.88	1	1.47
Associate Professor	0	-	2	2.94	1	1.47	1	1.47	1	1.47
Professor	0	-	3	4.41	1	1.47	2	2.94	1	1.47
<b>Total</b>	<b>10</b>	<b>14.71%</b>	<b>26</b>	<b>38.23%</b>	<b>19</b>	<b>27.95%</b>	<b>9</b>	<b>13.23%</b>	<b>4</b>	<b>5.88%</b>

### 5.5 Format for details of uploaded research publications

The preferred formats for uploading research publications are tabulated in Table 7. Slightly more than two-thirds (67.65%) of the respondents indicated their preference for uploading a full-text version of their publication. Among Assistant Professors, 31 (of 41, or 75.6%) preferred full-text. One quarter (25%) of all respondents preferred to just upload the abstract. The options to either upload the abstract plus the references or to provide just the metadata, i.e. bibliographical details, were ranked very low.

**Table 7.** Distribution by preferred format for details of uploaded publications

Rank	Preferred format of uploaded publication details (n=68)							
	Full-text		Abstract		Abstract and references		Metadata	
	No.	%	No.	%	No.	%	No.	%
Lecturer	12	17.65	2	2.94	1	1.47	0	-
Assistant Professor	31	45.59	10	14.71	0	-	0	-

Associate Professor	2	2.94	2	2.94	1	1.47	0	-
Professor	1	1.47	3	4.41	1	1.47	2	2.94
<b>Total</b>	<b>46</b>	<b>67.65%</b>	<b>17</b>	<b>25.00%</b>	<b>3</b>	<b>4.41%</b>	<b>2</b>	<b>2.94%</b>

### 5.6 Frequency of access to ASNS

Respondents were asked to indicate the frequency with which they accessed the ASNS which they had joined. As Table 8 shows, more than half (54.42%) accessed the relevant ASNS at least once a day. One quarter (25%) chose “whenever I require” as their level of frequency. Approximately one-fifth (20.58%) indicated that their access was generally once or twice a week. The frequency pattern of access varied widely across the four academic ranks.

**Table 8.** Distribution by frequency of access to ASNS

Rank	Frequency of access to ASNS (n=68)									
	Multiple times a day		Daily		Twice a week		Weekly		Whenever I require	
	No.	%	No.	%	No.	%	No.	%	No.	%
Lecturer	5	7.36	0	-	1	1.47	1	1.47	8	11.77
Assistant Professor	12	17.65	14	20.59	6	8.82	6	8.82	3	4.41
Associate Professor	1	1.47	1	1.47	0	-	0	-	3	4.41
Professor	1	1.47	3	4.41	0	-	0	-	3	4.41
<b>Total</b>	<b>19</b>	<b>27.95%</b>	<b>18</b>	<b>26.47%</b>	<b>7</b>	<b>10.29%</b>	<b>7</b>	<b>10.29%</b>	<b>17</b>	<b>25.00%</b>

## 6. Discussion

The paper explored the usage of academic social networking sites (ASNS) among selected social science faculty members from five public sector universities in Karachi, Pakistan. The study investigated the choice of ASNS; the factors that influence usage; and the main reasons for this cohort to upload their own publications.

In comparing these findings with those of Sheikh (2016), there are some readily apparent similarities. For example, in both instances, Associate Professors accounted for the majority of respondents and Professors for the least number; the majority of the respondents were members of multiple ASNS (76.49%, Sheik; 80.88%, authors). Leaving aside LinkedIn (which has more of a business- and employment-oriented focus) as the most heavily used site in Sheikh’s survey, ResearchGate was the most heavily used ASNS by both cohorts. Finally, 75% of the respondents, in both surveys, accessed ASNS at least once a week.

The major divergence in findings between the two surveys was the principal reasons for ASNS usage. In Sheikh’s survey, respondents could select more than one reason from a checklist of 10 options. More than 90% of his respondents selected: “to interact with experts in their area

of research, to promote/share their research publications, to participate in discussions, to get ideas about the latest research trends in their field of interest and to get help in resolving their research problems” (Sheikh, 2016, p. 185).

Respondents in the authors’ survey were limited to one option from a list of 5. Interacting with peers and remaining up-to-date with current research trends scored less than 10% respectively, which is in marked contrast to Sheikh’s findings. The results of the authors’ survey indicate that the primary purpose for more than half of the respondents to access an ASNS was to search for articles on the site. As discussed below, this has implications for libraries, which have not yet been fully investigated in the literature.

### *6.1 Improving impact versus building collaborative partnerships*

As indicated in the literature review, two of the major benefits which are touted for joining an ASNS are (1) creating a profile which highlights one’s own research and (2) building meaningful, collaborative research partnerships. An interesting finding from the current study is that “interacting with peers” as a reason for accessing an ASNS was ranked relatively low (8.82%) by respondents, with the exception of Professors, as was “information sharing” as a reason for uploading one’s own publications to an ASNS (19.12%).

Instead, the focus is on using ASNS to (1) access and --where possible-- download full-text publications, ostensibly to support their research (73.53%), and (2) publicise their own research by uploading full-text versions of their publications (67.65%). This supports Thelwall and Kousha’s (2015) assertion that ASNS are modifying traditional patterns of scholarly communication by providing an alternative means of discovering research outputs. In their recent study, Gardner and Inger (2016, p.9) have reported that “Social media sites appear to be a significant source of free articles in lower income countries”, which may help to explain the heavy focus on the use of ASNS for resource discovery by survey respondents.

Increasing citations (38.23%) was ranked as the highest reason to upload one’s research outputs to an ASNS. Given the relatively low citation impact of Pakistani faculty members as reported in the literature, it would appear from the current survey that some staff members may be attempting to enhance access to, and visibility of, their publications through uploading them onto ASNS. Further investigation would be useful to determine the relative subsequent effect—if any—on their citation impact.

A very high percentage (80.88%) of respondents were members of more than one ASNS. It would be helpful to understand the motivations for this behaviour, as well as the corresponding levels of effort required to maintain their respective author profile across more than one platform. It can be cumbersome and time-consuming to manage all of them, especially for those academics who are members of more than two ASNS. Espinoza Vasquez and Caicedo Bastidas (2015, p. 4) have suggested that “... future research could explore ways to facilitate managing multiple profiles across ASNS and the actual impact their services have on employment, dissemination of results, and collaboration.”

## *6.2 Implications for libraries*

Research Question 4: What are the implications, if any, for libraries from understanding the motivations for scholars to join an ASNS?

Given the findings from this survey, there are two major implications for libraries. First, resource discovery has been highlighted as the principal reason for which the respondents access ASNS, especially to download full-text publications. On the one hand, this may be attributable to their respective libraries not subscribing to the resources in question; on the other hand, it may be a lack of awareness on the part of the academic of the range of relevant resources offered by their library. In both instances, there is an opportunity for librarians to proactively work with this cohort to assist their research needs. Further investigation would be useful to determine whether the use of ASNS has decreased the need for members to use the interlibrary loan / document delivery service within their respective university library, which has potential resource and budget implications.

Second, survey results indicate that improving citations and downloads were the primary reasons for which respondents upload their own publications to ASNS. In some disciplines—library and information science, for example—most of the national journals are not in electronic format, thus narrowing their access outside Pakistan. In addition, authors represented in these print journals are unable to use the functionality of services such as Crossref or ORCID to create an academic profile simply by automatically linking to their publications. Clearly one method to overcome this impediment is for authors to scan their print-based articles and upload them as PDFs—where the license permits—to an ASNS as part of an “author (academic) profile”.

A role for libraries in this domain stems from the fact that, while traditionally they have provided information support and training to researchers, more recently this has been expanded to include support in all aspects of the scholarly communication lifecycle, including research impact. No longer is it just a matter of having one’s research published; it is also important for authors to build an effective academic profile so as to expand the reach of their ideas.

From a library perspective, therefore, there is a role for librarians in educating academics about not only the benefits of using ASNS as a platform for enhancing their visibility but also best practice in using them to create an effective academic profile. As a corollary, the library has a role to play in advising authors regarding any associated copyright or licensing issues. Ideally such advice should be incorporated within the library’s current strategic publishing guidelines.

In the present-day scholarly communication environment, this complements the current role of providing advice, for example, on the selection of an appropriate journal in which to publish. A well-planned post-publication strategy is important for enabling the widest possible access to one’s research as well as maximising its impact.

Although survey results were too small to extrapolate significant differences in behaviour among the four academic ranks, the fact that Professors, for example, were the only cohort which did not identify either content discovery or access as their primary reason for using an ASNS, underlines a fundamental support service principle. It is important that librarians—and indeed other research support stakeholders—implement strategies which are targeted to different groups of faculty, whether based on academic rank, discipline, or stage in their academic career, for example.

### **6.3 Survey limitation**

One limitation of this study is that ResearchGate was the primary source for the target population being surveyed. This was because (1) the authors were most familiar with RG, and (2) it was relatively easy to filter members by institution and department. Mendeley, on the other hand, requires access to a separate, paid “Institutional Edition” to achieve the same level of functionality as currently offered by ResearchGate and Academia.edu. It would be useful to expand the current survey to include not only a wider range of Pakistani universities and departments but also faculty members based on their membership in other ASNS, e.g. Mendeley and Google Scholar.

## **7. Conclusion**

The purpose of the study was to explore the usage of ASNS among social science faculty members from five public sector universities in Karachi, Pakistan. The study was not intended to be an exhaustive study but rather an exploratory one, designed to supplement research recently undertaken by the authors (Ali and Richardson, 2017) regarding the use of ResearchGate among a selected professional cohort within Pakistan, and to identify potential implications for current library services. Results are also intended to form the basis for a future, in-depth study.

Future investigation is indicated to determine the primary motivation for other academic disciplines to use ASNS. The results would help to inform suitable support strategies not only by libraries but also by departmental heads and research centre directors. This would be particularly pertinent in regard to early career researchers and postgraduate students. Research of this type could assist efforts by a number of university stakeholders in supporting the entire lifecycle of scholarship.

### **Declaration of Conflicting Interests**

The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

### **Acknowledgement**

The authors are grateful to all the respondents who participated in this survey and to the constructive feedback from the reviewers.

## References

Ali MY and Richardson J (2016) Research publishing by library and information science scholars in Pakistan: a bibliometric analysis. *Journal of Information Science Theory and Practice* 4(1): 6-20.

Ali MY and Richardson J (2017) Pakistani LIS Scholars' Altmetrics in ResearchGate. *Program* 51(2):152-169.

Berger K, Klier J, Klier, M and Probst F (2014) A review of information systems research on online social networks. *Communications of the Association for Information Systems* 35(1), article 8: 145-172.

Bonaiuti G (2015) Academic Social Networks: How the web is changing our way to make and communicate researches. *Research on Education and Media* 7(2): 3-14.

Brandtzæg PB and Heim J (2009, July). Why people use social networking sites. In: Ozok A and Zaphiris P (eds) *International Conference on Online Communities and Social Computing*. Springer: Berlin, pp. 143-152.

Bullinger AC, Hallerstede S, Renken U, Soeldner J and Möslein K (2010) Towards research collaboration –a taxonomy of social research network sites. In: *AMCIS 2010 Proceedings*, Paper 92. Available at: <http://aisel.aisnet.org/amcis2010/92> (accessed 15 May 2017).

Chakraborty N (2012) Activities and reasons for using social networking sites by research scholars in NEHU: A study on Facebook and ResearchGate. Paper presented at *8th Convention PLANNER-2012*, Sikkim University, Gangtok, India, 1- 3 March. Available at: <http://ir.inflibnet.ac.in/handle/1944/1666> (accessed 15 May 2017).

Chen J, Tang Y, Li J et al. (2014) Community-based scholar recommendation modeling in academic social network sites. In: *International Conference on Web Information Systems Engineering* (eds. Z. Huang et al.), Nanjing, China, 13-15 October 2013, pp. 325-334. Berlin: Springer.

Dermentzi E, Papagiannidis S, Toro CO and Yannopoulou N (2016) Academic engagement: Differences between intention to adopt Social Networking Sites and other online technologies. *Computers in Human Behavior* 61, 321-332.

Dudovskiy, J. (2016) Purposive sampling. Available at: <http://research-methodology.net/sampling-in-primary-data-collection/purposive-sampling/> (accessed 12 July 2017)

Ellison NB and Boyd D (2013) Sociality through social network sites. In Dutton W (ed.) *The Oxford Handbook of Internet Studies* Oxford: Oxford University Press, pp. 151-172

Espinoza Vasquez FK and Caicedo Bastidas CE (2015) Academic social networking sites: a comparative analysis of their services and tools. In: *iConference 2015 Proceedings*, Newport

Beach, CA, USA, 24-27 March 2015. Available at: <http://hdl.handle.net/2142/73715> (accessed 15 May 2017).

Gardner T and Inger S (2016) *How Readers Discover Content in Scholarly Publications: Trends in Behaviour From 2005-2015*. Oxford, UK: Renew Training. Available at: <http://content.iospress.com/articles/information-services-and-use/isu800> (accessed 15 May 2017)

Gruzd A and Goertzen M (2013) Wired academia: Why social science scholars are using social media. In: *Proceedings of the 46th Annual Hawaii International Conference on System Sciences* (ed. RH Sprague), Maui, Hawaii, USA, 7-10 January 2013, pp. 3332-3341. Piscataway, NJ: IEEE.

Hammarfelt B, Nelhans G, Eklund P and Åström F (2016) The heterogeneous landscape of bibliometric indicators: Evaluating models for allocating resources at Swedish universities. *Research Evaluation* 25(3): 292-305.

Hoffmann CP, Lutz C and Meckel M (2016) A relational altmetric? Network centrality on ResearchGate as an indicator of scientific impact. *Journal of the Association for Information Science and Technology*, (67)4:765–775.

Jan SU and Anwar MA (2013) Impact of Pakistani authors in the Google world: a study of library and information science faculty. *Library Philosophy and Practice* paper 980. Available at: <http://digitalcommons.unl.edu/libphilprac/980/> (accessed 15 May 2017).

Jeng W, He D and Jiang J (2015) User participation in an academic social networking service: A survey of open group users on Mendeley. *Journal of the Association for Information Science and Technology* 66(5): 890-904.

Jordan K (2014) Academics and their online networks: Exploring the role of academic social networking sites. *First Monday* 19(11):4159.

Khan SA and Bhatti R (2012) Application of social media in marketing of library and information services: A case study from Pakistan. *Webology* 9(1): 1-8.

Kjellberg S (2010) I am a blogging researcher: Motivations for blogging in a scholarly context. *First Monday* 15(8):2962.

Levy M, Hadar I, Te'eni D, et al. (2016) Social networking in an academic conference context: insights from a case study. *Information Technology & People* 29(1): 51-68.

Lupton D (2014) 'Feeling better connected': academics' use of social media. Canberra: News & Media Research Centre, University of Canberra. Available at: <https://www.canberra.edu.au/about-uc/faculties/arts-design/attachments2/pdf/n-and-mrc/Feeling-Better-Connected-report-final.pdf> (accessed 15 May 2017).

Manca S and Ranieri M (2016) "Yes for sharing, no for teaching!": Social Media in academic practices. *The Internet and Higher Education* 29: 63-74.

Mikki S, Zygmuntowska M, Gjesdal ØL and Al Ruwehy HA (2015) Digital presence of Norwegian scholars on academic network sites—where and who are they? *PLOS ONE* 10(11): e0142709.

Mohammadi E, Thelwall M and Kousha K (2015) Can Mendeley bookmarks reflect readership? A survey of user motivations. *Journal of the Association for Information Science and Technology* 67(5): 1198-1209.

Nicholas, D, Herman E and Jamali HR (2015) *Emerging Reputation Mechanisms for Scholars*, Luxembourg: Publications Office of the European Union.

Oliver, P. (2006) Purposive sampling, in Jupp, V. (Ed.), *The Sage Dictionary of Social Research Methods*, Sage Publication, London, pp. 244-245.

Ovadia S (2014) ResearchGate and Academia.edu: Academic social networks. *Behavioral & Social Sciences Librarian* 33(3):165-169.

Pscheida D, Köhler T and Mohamed B (2013) What's your favourite online research tool? In 1st International Conference on Internet Science, Brussels, 9-11 April, pp. 173-179. Available at: [https://www.researchgate.net/profile/Thomas\\_Koehler5/publication/236667384\\_What%27s\\_your\\_favorite\\_online\\_research\\_tool\\_Use\\_of\\_and\\_attitude\\_towards\\_Web\\_20\\_applications\\_among\\_scientists\\_in\\_different\\_academic\\_disciplines/links/5540e9080cf2322273106f9/Whats-your-favorite-online-research-tool-Use-of-and-attitude-towards-Web-20-applications-among-scientists-in-different-academic-disciplines.pdf](https://www.researchgate.net/profile/Thomas_Koehler5/publication/236667384_What%27s_your_favorite_online_research_tool_Use_of_and_attitude_towards_Web_20_applications_among_scientists_in_different_academic_disciplines/links/5540e9080cf2322273106f9/Whats-your-favorite-online-research-tool-Use-of-and-attitude-towards-Web-20-applications-among-scientists-in-different-academic-disciplines.pdf) (accessed 15 May 2017).

Rad MS, Dahlan HM, Iahad NA and Zakaria R (2014) Assessing the Factors that Affect Adoption of Social Research Network Site for Collaboration by Researchers Using Multicriteria Approach. *Journal of Theoretical and Applied Information Technology*, 65(1), 170-182.

Relajo D and Pilao SJ (2016) Key contributions and future directions of academic social networking services for the digital academic. *International Journal of Humanities & Social Science Studies* 2(5): 94-101.

Sheikh, A (2017) Awareness and Use of Academic Social Networking Websites by the Faculty of CIIT. *Qualitative and Quantitative Methods in Libraries*, 5(1), 177-188.

Tashakkori A and Teddlie C (Eds.) (2003). *Handbook of Mixed Methods in Social & Behavioral Research*, Sage, Thousand Oaks, CA.

Teddlie C and Yu F (2007) Mixed methods sampling: A typology with examples. *Journal of Mixed Methods Research*, 1(1), 77-100.

Thelwall M and Kousha K (2014) Academia. edu: social network or academic network? *Journal of the Association for Information Science and Technology* 65(4):721-731.

Thelwall M and Kousha K (2015) ResearchGate: Disseminating, communicating, and measuring scholarship? *Journal of the Association for Information Science and Technology* 66(5): 876-889.

Van Noorden R (2014) Online collaboration: Scientists and the social network. *Nature* 512(7513):126-129.

Ward J, Bejarano W and Dudás A (2015) Scholarly social media profiles and libraries: A review. *Liber Quarterly* 24(4):174-204.

Wilsdon J, Allen L, Belfiore E, et al. (2015) *The Metric Tide: Report of the Independent Review of the Role of Metrics in Research Assessment and Management*. London, UK: The Higher Education Funding Council for England. Available at: <http://www.hefce.ac.uk/pubs/rereports/Year/2015/metrictide/> (accessed 15 May 2017).

Yu MC, Wu YCJ, Alhalabi W, Kao HY and Wu WH (2016) ResearchGate: An effective altmetric indicator for active researchers? *Computers in Human Behavior* 55(B):1001-1006