

The role of the University of Cape Town Libraries in support of researchers' scholarly use of social media

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Table of Contents

Acknowledgements	2
Table of Contents	3
List of Tables	7
List of Figures	7
Abstract	8
Chapter 1: Introduction	9
1.1 Background to the study	9
1.2 Research question and sub questions	12
1.3 Demarcation of the field of study	13
1.4 Research Methodology	13
1.5 Value of the study	14
1.6 Clarification of key terms	15
1.7 Conclusion	17
Chapter 2: Literature Study	18
2.1 Introduction	18
2.2 Social media and scholars	18
2.2.1 Social media defined	18
2.2.2 Scholarly use of social media	19
2.3. Scholarship and the research process	20
2.3.1 Introduction	20
2.3.2 Scholarly communication	20
2.3.3 Is social media changing scholarship?	24
2.3.4 Is “Openness” unique to the networked participatory scholar?	25
2.3.4.1 The concept of “Openness”	25
2.3.4.2 “Openness” is unique to the networked participatory scholar	26
2.3.4.3 “Openness” is not unique to the networked participatory scholar	26
2.3.5 Assessing research output	27
2.4 Drivers of social media usage for research	29
2.4.1 Encouragement and pressure	29
2.4.2 Cultural factors	30
2.4.3 Intentions	30
2.4.4 Demographics and discipline	30
2.5 Uses of and perceived benefits to social media usage	31
2.5.1 Reading, sourcing and citing information	31
2.5.2 Interacting and sharing	32
2.5.2.1 Overcoming isolation	33
2.5.2.2 Interacting with geographically dispersed peers	33
2.5.3 Collaboration	34
2.5.4 Enhancing one’s reputation	34
2.5.4.1 Promoting research output	35
2.5.4.2 Greater reach	35

2.6 Hindrances to the use of social media during research	36
2.6.1 Introduction	36
2.6.2 Benefits are unclear	36
2.6.3 A distraction and a waste of time	37
2.6.4 Lack of trust	38
2.6.5 Few custom-made social media tools	38
2.6.6 Lack of infrastructure	39
2.7 Libraries and the support of researchers' use of social media	40
2.7.1 Introduction	40
2.7.2 Guides to the use of social media for research	40
2.7.3 Workshops and training programmes	41
2.7.4 Position social media within the context of research and the research lifecycle	41
2.7.5 Formulate profiles of researchers for workshops and training	42
2.7.6 Identify social media champions	43
2.7.7 Curate and preserve social media content	43
2.7.8 Advocacy	44
2.7.8.1 Introduction	44
2.7.8.2 Filtering and aggregation of content	44
2.7.8.3 Altmetrics	45
2.8 Conclusion	45
Chapter 3: Research Methodology	46
3.1 Introduction	46
3.2 Research design and approach	46
3.2.1 Introduction	46
3.2.2 Quantitative methods	47
3.2.3 Qualitative methods	48
3.3 Population and sampling	49
3.3.1 Selection of participants	49
3.3.2 Challenges encountered	49
3.4 Research instruments	52
3.4.1 Introduction	52
3.4.2 The questionnaire	52
3.4.2.1 Advantages of using questionnaires	53
3.4.2.2 Disadvantages	53
3.4.2.3 Content of the questionnaire	54
3.4.3 The interviews	55
3.4.3.1 Advantages	55
3.4.3.2 Disadvantages	55
3.4.3.3 The interview schedules	56
3.5 Data analysis and interpretation	56
3.6 Conclusion	57
Chapter 4: Data Analysis	58
4.1 Introduction	58
4.2. The questionnaires	58

4.2.1 Demographics	58
4.2.1.1 Age	58
4.2.1.2 Gender	58
4.2.1.3 Faculty	59
4.2.1.4 Position/Academic Level	59
4.2.2 Social media usage	60
4.2.2.1 Type of tool used for research purposes	60
4.2.2.2 Reasons for not using tools	62
4.2.2.3 Reasons for using tools	64
4.2.2.4 Uses of social media for research	65
4.2.2.5 Scholarship and the research process	66
4.2.2.6 Drivers of social media usage for research	67
4.2.2.7 Hindrances to the use of social media for research	69
4.2.3 Libraries and the support of social media for research	71
4.2.3.1 The library's role in the support of social media usage	71
4.2.3.2 Altmetrics and Advocacy	72
4.2.3.3 Reasons the library should not play a role in the support of social media usage	73
4.2.4 Social media use: Demographics and discipline	74
a. Age	75
b. Gender	75
c. Faculty	76
4.3 The interviews	77
4.3.1 Interviews with those who said they do not use social media during the research process	77
4.3.1.1 Personal social media usage	77
4.3.1.2 Drivers of social media usage	78
4.3.1.3 Libraries and the use of social media	79
4.3.1.4 Feelings about social media and research	79
4.3.2 Interviews with those who said they use social media during the research process	80
4.3.2.1 Use of social media	80
4.3.2.2 Social media and research	81
4.3.2.3 Social media and impact	84
4.3.2.4 Library support	85
Conclusion	86
Chapter 5: Interpretation and Conclusion	87
5.1 Introduction	87
5.2 Summary of research findings	87
5.2.1 Are social media tools used by researchers at UCT for their research?	87
5.2.2 What are the tools used for?	88
5.2.3 What, if anything, hinders researchers from using social media for their research?	89
5.2.4 What are the drivers of social media usage?	90
5.2.5 What are researchers' expectations of the Library in terms of support for the use of social media?	91
5.3 Strategies for UCT Libraries to support the use of social media by researchers	92
5.3.1 Introduction	92

5.3.2 Understand the types of social media users and how they use social media for research	92
5.3.3 Become familiar with social media and Altmetrics tools	92
5.3.4 Understand researchers' needs and how they use social media	93
5.3.5 Understand hindrances to and drivers of social media usage	93
5.3.6 Conduct training, consultation, and information sessions on social media and Altmetrics tools	94
5.3.7 Raise awareness about social media tools relevant to researchers	94
5.4 Conclusion	94
References	96
Appendices	107
Appendix A: Questionnaire	107
UCT researchers and social media	107
Appendix B: Cover letter	115
Appendix C: Interview Schedule	116
Interview Schedule: For those who use social media during research	116
Appendix D: Interview Schedule	118
Interview Schedule: For those who do not use social media during the research process:	118

List of Tables

Table 1 Reasons the library should not play a role in supporting social media usage.....	74
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List of Figures

Figure 1 Czerniewicz's "traditional knowledge creation and dissemination cycle"	23
Figure 2 Faculty	59
Figure 3 Use social media in personal capacity; Figure 4 Use social media for research	60
Figure 5 Reasons for not using tools	63
Figure 6 Reasons for using tools.....	64
Figure 7 Use of social media for research	66
Figure 8 How social media is used during the research lifecycle	67
Figure 9 Drivers of social media usage	69
Figure 10 Hindrances to social media usage	70
Figure 11 Library's role in the support of social media usage.....	72
Figure 12 Use of Altmetrics tools	73
Figure 13 Research promotion and monitoring	73
Figure 14 Use of social media by age range	75
Figure 15 Use of social media for research by gender: percentages	76
Figure 16 Gender: social media use by Faculty	76

Abstract

Social media tools are widely used by the public at large. In recent years, they have been employed by researchers and academics to connect with each other, discuss their research, gather data, and share resources. Mainstream tools such as Facebook, Twitter, and Google+ have been joined by tools custom-made for researchers, such as ResearchGate, Academia.edu and FigShare.

This study sought to explore whether social media tools were being used by researchers at the University of Cape Town (UCT) and if so, how they were being employed within the research process. The overarching question that the study aimed to answer was whether the UCT Libraries could support the use of social media by researchers at the University and if so, how this should be done.

The study adopted a mixed methods approach. Questionnaires gathered primarily quantitative data, while interviews gathered qualitative data and augmented the data gathered via the questionnaires. Respondents were asked to provide details of their use of social media during the research process, or lack thereof, and to offer their suggestions for how the Library could support this activity.

It was found that social media is being used during the research process by the respondents to the study in a variety of ways. Respondents provided insight into drivers and hindrances to the use of social media for this purpose. The UCT Library has a part to play in supporting this activity, specifically through training, information, and consultation sessions, and by understanding the types of social media users at the University, their social media needs, and their perceptions of social media.

Chapter 1: Introduction

1.1 Background to the study

The use of social networking tools, or social media, became prevalent soon after the advent of Web 2.0 (Kaplan & Haenlein, 2010: 61). These tools began as platforms on which people could post their profile and view the profiles of others. Boyd and Ellison (2007: 215) write that the earliest recognisable social networking site was SixDegrees.com, which was launched in 1997. Sites that followed suit were Classmates.com, AsianAvenue, BlackPlanet, and MiGente. The first business social networking platform, according to these authors, was Ryze.com. While this site did not take off as expected, it gave rise to sites like LinkedIn and Friendster, which catered for the needs of people in business who wished to make their profile more visible (Boyd and Ellison, 2007: 215).

Social media tools are now ubiquitous and widely used. The latest Pew Internet Survey reveals that 65% of online adults are social networking users (Perrin, 2015). Social media is used to connect with others and share information in the form of images, videos and text. It is also used by businesses to market their goods and services and connect with their customers in a way that was not possible before the advent of these tools.

While the term “*social media*” suggests that these tools are primarily used for social and not academic purposes, it is evident from the literature that researchers are using these tools to create their research, collaborate on research projects and share their research output. Some researchers use platforms such as Twitter to report on conferences they attend (Najmi and Keralis, 2013), some use blogs to report on their research (Shema et al, 2013) and others use various social media platforms to connect with colleagues in their field and build their professional profile (Czerniewicz, 2013).

“Library 2.0” is a term defined by Maness (2006) as “the application of interactive, collaborative, and multi-media web-based technologies to web-based library services and collections”. Soon after the advent of Web 2.0, libraries began employing Library 2.0 principles by offering social media tools on their web sites and using these tools to interact with library users. The academic use of social media by researchers has a further impact on library services, as libraries need to stay relevant and meet the needs of their clients (Penzhorn and Pienaar, 2009: 67).

It is this aspect of how academic libraries, and specifically the University of Cape Town (UCT) Libraries, can stay relevant and respond to the needs of its users that was addressed by this dissertation. The purpose of this study was to investigate the extent of the use of social media by researchers at UCT, how they use it and which research processes are involved, and how UCT Libraries can support their use of these tools. No similar study has been done at the University or in the country and the results provide insight into the prevalence of the use of social media by researchers at a major South African tertiary education institution and the extent of expected library support.

The author became interested in this topic after writing a paper for the Master's in Information Technology module at the University of Pretoria called "Wed trends in the Library". The paper was an investigation into how academic libraries could support "social scholarship", or the scholarly use of social media by researchers. Two researchers at UCT were interviewed for this paper and it was found that they were both using social media fairly extensively for their research. The author became curious about whether this is a trend at UCT and how social media is being used by other researchers during the research process.

As this is an emerging research field, the literature covering this topic has been written during the recent past. Studies have been conducted *inter alia* into the role of blogging by researchers (Luzón, 2008), the role the internet has played in changing the way scholarly communication takes place (Genoni, *et al*, 2006), and the application of Web 2.0 in Libraries (Maness, 2006.). Only in the past six years, however, have studies into the academic use of social media begun to proliferate (Brown, 2009). The recent abundance of sources on the topic shows that this is a growing field of interest.

The author identified five broad themes in the literature that were relevant to this study:

1. Scholarship and the research process
2. Drivers of social media usage for research
3. Uses of and perceived benefits to social media usage
4. Hindrances to social media usage
5. Libraries and the support of researchers' use of social media

1. *Scholarship and the research process*

This category of publications focuses on researchers' use of social media within the research process. Authors such as Czerniewicz (2013) and Pearce *et al* (2011) have linked social media usage with Boyer's (1990) four dimensions of scholarship (discovery, application, integration, and teaching and learning) and assert that the use of social media in the research process opens research up to a wider audience. It also provides the potential for collaboration. These authors also claim that social media usage results in the "blurring of the formal and the informal". Other authors have written generally about the growth of the use of social media by scholars and how this is impacting scholarship (Scanlon, 2012; Weller, 2012; Pearce *et al*, 2011; Mangan, 2012).

These sources were useful for this study in that the topic can be placed within a broader framework of "social scholarship" and scholarly communication.

2. *Drivers of social media usage for research*

Some studies have found that scholars are using social media to collaborate, build networks of peers, communicate about their research, disseminate and publicise it, improve their writing skills, organise their thoughts and ideas, and find out what others are doing in their field (Research Information Network, 2010; Linzy, n.d, Shema *et al*, 2012). Others have found that social networks such as Twitter are used by scholars as a "back channel" to share information about a conference they are attending, or to share their research interests (Najmi *et al*, 2013).

3. *Uses of and perceived benefits to social media usage*

The publications in this category are generally case studies of particular groups of scholars and how they use social media for their research (Research Information Network, 2010; Rowlands *et al*, 2011; Jasimudeen & Rajan, 2012). A number of papers in this category focus on how scholars are using a particular social media platform, like Twitter (Najmi & Keralis, 2013; Letierce, *et al*, 2010; Priem & Costello, 2010; Stafford & Bell, 2012), or blogs (Shema *et al*, 2012; Groth & Gurney, 2010). Others focus on particular groups of scholars, such as scientists (van Eperen & Marincola, 2011; Anderson, 2008) and cognitive scientists (Stafford & Bell, 2012).

4. *Hindrances to social media usage*

Hindrances to the use of social media in research that are listed in the research include the fear of appearing unprofessional, the fear of posting something that will be misconstrued and the fear of being judged by one's peers (Brydon, 2010: 25; Osterrieder, 2013: [1]). These and other sources were used to look for current trends in the use of social media by researchers internationally and how libraries are supporting the use of social media by researchers in order to create a backdrop to the study at the University of Cape Town. They also assisted in the formulation of questions for the questionnaire and interviews that were used in the data gathering process.

5. *Libraries and the support of researchers' use of social media*

The focus of writing in this category is on the role that libraries should adopt in supporting scholarly social media use. Authors writing about this topic have listed and explained social media tools and how librarians can support their use by researchers (Penzhorn & Pienaar, 2009; Brown, 2009; Genoni, *et al*, 2006). They have also linked Web 2.0 and the use of social media to Library 2.0 (Maness, 2006).

1.2 Research question and sub questions

The primary question that will be answered by this research is:

How can the University of Cape Town libraries support the scholarly use of social media by researchers?

Sub-questions that were posed are:

- Which social media tools are used by researchers at UCT for their research?
- Are these tools used for the creation of research, collaboration in research and dissemination of research and if so, how?
- What, if anything, hinders researchers from using social media for their research?
- What are researchers' expectations of the Library in terms of support for the use of social media?

1.3 Demarcation of the field of study

The target group for this study is researchers employed or enrolled at UCT in 2014. The term “researcher” is used to represent academics and Master’s and Doctoral candidates at the University – i.e. – anyone who conducts research at the University with a view to publishing it as a thesis/dissertation, academic paper, conference paper, or research report. Researchers who were engaged in research in 2014 were studied.

1.4 Research Methodology

Pickard (2013: 14) writes that “methodological dualism”, or mixed methods, is “the only pragmatic option” to research in the social sciences and that it has been advocated for more than 40 years by many social science researchers”. The design chosen for this research was a mixed method approach. This design was chosen in order to gain overall figures during the first phase of the research and more in-depth information during the second phase.

The quantitative gathering phase allowed for the gathering of overall figures of social media usage, types of usage, and expected library support. The qualitative data gathering phase allowed for more in-depth data gathering about the thought process behind the use or avoidance of social media for research purposes and the reasons for the desire or lack thereof for library support of this activity.

For the quantitative data gathering phase, an online survey containing questions regarding which social media platforms are used for research and how they are used was sent out to UCT scholars. The questions covered whether social media is used for research by researchers, which social media tools are used for this purpose, and for what purpose in the research process these tools are used. Questions regarding expected and desired library support in this sphere served as an indication of how libraries should respond to this phenomenon.

The survey targeted Master’s and PhD candidates enrolled at UCT in 2014, as well as academics in all UCT Faculties. Both populations were notified of the survey via email distribution lists that serve these groups (Genoni *et al*, 2006: 737). There was a link to the online survey in the email.

The author analysed the data manually using Excel spreadsheets and charts to find out, for example, how many scholars use a particular social media tool. The data was also analysed by applying cross-

tabulations, such as whether there is a difference between usage according to age, or researcher status.

Questions regarding the perceived need for support in the scholarly use of social media were included in order to arrive at an answer to the primary research question of this study.

During the qualitative data gathering phase, a sample of scholars was selected to be interviewed in order to follow up on the survey and gain more insight into how UCT scholars are using social media for their research and to what extent they wish to be supported by the library. This sample was identified by means of convenience sampling, where initial contact was made through the survey, and respondents were invited to provide their contact details if they are willing to be interviewed. For this study, data gathered from the survey therefore identified interview participants.

The interviews were semi-structured as they allowed for new questions to be brought up in the interview and have an open-ended section at the end. Furthermore, they sought to enhance, elaborate, illustrate and clarify the results gained from the survey (Creswell, 2011: 62).

The author transcribed the interviews and looked for patterns by using conventional content analysis on the data gathered from responses to the questions in these interviews in order to gain greater insight into how social media is used by UCT scholars.

1.5 Value of the study

This research is the first of its kind to be conducted in South Africa. Aside from the Penzhorn and Pienaar paper (2009), all of the literature covered here originates from international sources. No similar study has been conducted in South Africa. This research therefore fills a gap in the literature in that it will be a study of South African researchers and libraries.

This is a study of scholars at a major South African university and provides guidance and insight to librarians on the emerging topic of social media usage by researchers and how they can support this function. As can be seen from the research conducted in this area, researchers have seen the benefits of these tools for their research. This study will be valuable to both researchers and librarians. It will provide insight into which social media tools are being used by UCT researchers for their research, how researchers at UCT use social media for their research, and what, if any, hindrances exist to the use of these tools for research. Furthermore, it will demonstrate to UCT

Libraries staff and other libraries' staff in South Africa how to support the use of social media by researchers at their institutions.

1.6 Clarification of key terms

Researchers who use online tools, including social media, during their research process have been described using a variety of terms, such as “digital scholars”, “open scholars”, and “networked participatory scholars”. The question therefore arose regarding how similar these terms are and whether they are interchangeable.

In order to address this question, the terms offered in the literature were analysed to determine the commonalities and differences between them and to establish whether they were interchangeable. Each term is listed below, its author(s) cited, and its meaning is summarised.

a. Networked participatory scholars

Social media are termed “participatory technologies” by Veletsianos and Kimmons (2011: 766). They see the activities of those who use these technologies as a new form of scholarship called “networked participatory scholarship”, characterised by researchers' use of social media to “reflect upon, critique, improve, validate and otherwise develop their scholarship”.

b. Connected researchers

This term was coined by librarians at the University of Bath, who developed a programme for researchers in which they could explore social media's potential for their research. While the term is not defined in this paper, it reports on an initiative that sought to show researchers how best to profile their research and “establish links with other researchers in their field” (Jones & Cope: 2011: 1).

c. Digital scholars

Lynch (2014: 12) sees the term “digital scholarship” as the catch-all phrase for the changing practices in scholarship, such as sharing, reusing and recombining data. Pearce (2010: 3) bases his definition of digital scholarship on Boyer's model of scholarship, which included Discovery, Integration, Application and Teaching. His definition of digital scholarship is drawn on by Minocha and Petres (2012: 124) who define the digital scholar as someone who uses digital tools in their scholarship. Najmi and Keralis (2013: 2) adopt the definition of digital scholarship offered by the American Council of Learned Societies (ACLS), which states that it is “any element of

knowledge...created...using a digital medium” for teaching and research. Weller’s (2012: 348) definition encompasses the contrast between digital and “traditional” scholarship and states that the concepts of digital content, a global network, and open approaches all work together to form the digital scholar. Scanlon (2012) summarises the definitions of various scholars and bodies, such as the ACLS, Unsworth (2000) and Cozzini (2008). Czerniewicz (2013: 6) argues that digital scholarship blurs process and product “at each stage of the research cycle”.

d. Online scholars

This term is used to encompass the “affordances” that the digital realm offers to researchers, such as easy engagement through comments via social media, digital content being “device agnostic”, and the benefits of hyperlinking (Czerniewicz, 2012).

e. e-Research literate scholars

e-Research, according to Genoni *et al* (2006: 744), is more complicated than traditional research. The “e-Research literate scholar”, therefore, has to be able to navigate this realm and librarians are able to assist by offering portals and current awareness systems, by filtering access to information, and by developing repositories.

f. Digital academics

In her Slideshare presentation on which social media tools can be used during the research process, Lupton (2013) uses the term “digital academic” to describe researchers who make use of these tools for their research.

g. Virtual scholars

The “virtual scholar” is someone who uses e-books, e-journals, Google, open access publishing, and social media (Nicholas & Rowlands, 2001: 61).

h. Social scholars

Penzhorn and Pienaar (2009) use this term to describe the researcher who uses social tools “for collaboration and sharing of ideas”. They quote Cohen (2007), who describes social scholars as those who “discuss research findings on blogs and invite comments”, write articles on wikis, and use social bookmarking sites. They also publish in open access journals and are willing to negotiate copyright over their publications. Greenhow & Gleason (2014: 394-395) argue that social scholarship embodies a different, or broader, view of open access that includes a change in the peer review system,

inclusion of data sets in publishing, “public engagement”, and the use of various media to produce research output.

i. Open scholars

Pearce *et al* (2011) link the adoption of social media by researchers with “an attitude of openness” that “involves sharing aspects of personal life on social network sites [and] blogging ideas rather than completed articles...”. These authors quote Burton (2009), who writes that the open scholar “is someone who makes their intellectual projects and processes digitally visible and who invites and encourages ongoing criticism of their work...at any stage of its development”.

The commonality between all these terms is that they are used to signify the change that the use of digital tools has had on traditional scholarship. They all denote an “openness” in scholarship that is linked to the dissemination and sharing of research.

Veletsianos and Kimmons, however, are the only authors who make a distinction between scholars who use any digital tool for their research, and those who use social media specifically. For this reason, the term “networked participatory scholar” was deemed appropriate for use in the current study.

1.7 Conclusion

Social media tools are not used only for social purposes. Researchers are using them for a variety of purposes, such as to discuss their research, gather data, and engage with other researchers. This study addresses the use of social media tools by researchers at UCT Libraries during the research process and how librarians can support this activity.

In the next chapter, an examination of the literature will be presented.

Chapter 2: Literature Study

2.1 Introduction

A literature review is “a written appraisal of what is already known” about a topic (Jesson *et al.* 2011, p.10). Its aim is to demonstrate that the author is aware of the existing literature on the topic and is able to interpret it, as well as identify gaps or flaws in the existing arguments.

The author’s understanding and analysis of the topic is crucial to the literature review. A good literature review does not merely mention or list the literature that has preceded the current work. The preceding work is critiqued and the author’s stance on the topic is presented.

Jesson *et al.* (2011: 14-15) list five kinds of literature reviews. The traditional review critiques the existing literature on a topic; the conceptual review combines concepts within the topic to present a clearer view of the topic; the state-of-the-art review examines the latest and most up-to-date research on a topic; an expert review is written by an expert in the field; and a scoping review examines the existing literature and assists in defining future research questions in the field.

This literature review is a conceptual review. It presents the foregoing literature on the topic of researchers’ scholarly use of social media by combining identified concepts within this topic in order to present a clear view of the issues within this theme.

2.2 Social media and scholars

2.2.1 Social media defined

Social media forms part of Web 2.0, a phenomenon that can be described as a functionality of the internet which allows users to interact with peers. Gu and Widen-Wulff (2011: 763) define Web 2.0 as “a unifying term for technologies where users, interaction, and participation are stressed”, while Kaplan and Haenlein (2010) describe it as a platform on which tools are not just created by individuals, but constantly modified and adapted by users.

It is evident from the literature that terms like “social networking”, “social network sites”, and “social media” are used interchangeably. Bennett and Folley (2014) define social media as “a loose term for

web-based tools that enable users to participate and contribute to knowledge building”. Boyd and Ellison (2008: 211) define social network sites as web-based services that allow individuals to do three things: “(1) construct a public or semi-public profile within a bounded system, (2) articulate a list of other users with whom they share a connection, and (3) view and traverse their list of connections and those made by others within the system”.

These authors also list the components of social media sites: profiles, contacts, and the ability to share content. Profiles are pages within the social media site unique to a particular user where the user shares content with a chosen list of contacts. Contacts, also known on social media sites as “friends”, “contacts”, “fans” or “followers”, are other users of the social media site with whom a user has chosen to share his or her profile. The ability to share content and communicate with contacts, either privately or publically, is the final component of social media identified by these authors (Boyd & Ellison, 2008: 211-214).

For the purposes of this discussion, then, the term “social media” will be used to discuss social networking tools that allow users to interact, share, participate and create content.

2.2.2 Scholarly use of social media

Beer (2008: 525) defined social media as a “transactional data set enriched by the types of previously hard to access, private and *mundane aspects* of everyday life that they communicate” (author’s emphasis). Regis (2012: 361) writes, “The fragmentary nature of Twitter, in which your feed collects together a series of short posts, can raise anxieties concerning the trivial and banal – for how can anything of significance be conveyed in just 140 characters?” Jones and Cope (2011) echo this: “viewing [social media] out of context has led to criticism that social media are trivial and only useful for propagating banal comment.”

An examination of the literature covering the use of social media by researchers for their research, however, clearly demonstrates that social media are not only for sharing of banalities. Some researchers are now engaging via social media with each other and with the general public (Pearce *et al*, 2011) in order to further and disseminate their research (Linzy, nd), discover sources (Priem & Costello, 2010), and obtain feedback from and engage with peers on writing projects (RIN, 2010).

In addition to being discussed in the academic literature, the topic of the scholarly use of social media by researchers is also prevalent in the mainstream media. Publications like the *Guardian* (Christie, 2011) and the *Chronicle of Higher Education* (Mangan, 2012) have reported on the use of social media by academics, arguing that research stories can have wide, popular appeal, and that academic publishing is changing because of social media. They have also reported on the advantages afforded by social media.

The purpose of the research at hand is to establish how UCT Libraries should respond to the use of social media by researchers within the University. An understanding therefore, of the various aspects of social media usage during the research process is necessary. Having examined the literature on the topic of the scholarly use of social media by researchers, five groupings were created to categorise the literature in the field. This was achieved by sorting the publications according to their primary topic or theme. The groupings created were as follows:

- Scholarship and the research process
- Drivers of social media usage for research
- Uses of and perceived benefits to social media usage
- Hindrances to social media usage
- Libraries and the support of researchers' use of social media

These groupings and their subdivisions will be discussed in further detail in this chapter.

2.3. Scholarship and the research process

2.3.1 Introduction

Before examining researchers' use of social media, it is necessary to understand what is meant by the term "scholarly communication". This allows one to establish which activities would lend themselves to the use of social media, which tools would be most useful for research, and why researchers would use them.

2.3.2 Scholarly communication

Scholarly communication forms part of scientific research and is the process of creating and sharing scholarly works. The literature reveals that scholarly communication is variously labelled by different

authors. It has been called “scholarship” (Bennett & Folley, 2014), the “scholarly workflow” (Favaro & Hoadley, 2014), the “scholarly communication” process (Bakshi & Gutam, 2013; Collins & Hide, 2010; Genoni *et al*, 2006), the “research workflow” (CIBER, 2010), the “research cycle” (Jones & Cope, 2011), and the “research lifecycle”. (Rowlands *et al*, 2011). For the purposes of this discussion, the term “scholarly communication” will be used to refer to all these terms.

In 1990, Boyer (1990) established a seminal list of the primary activities or components of what it means to be a scholar. The creation of this list was in response to the conflict between research and teaching, as promotion opportunities at the time were reserved for those who were involved in research (Weller, 2010: 7). The components of scholarship identified by Boyer were:

- discovery
- integration
- application and
- teaching

Discovery is the creation of new knowledge in a specific area or discipline (Weller, 2010: 45). Integration, according to Boyer (1990: 19), is linked to Discovery, as, once the new knowledge has been created, the scholar asks, “what do the findings mean?” It is the practice of putting the new knowledge into context and drawing together and interpreting past research. Integration also involves interdisciplinarity, where the scholar makes connections across disciplines.

Application builds on a scholar’s area of expertise and involves engagement with the public as well as serving as a peer reviewer or a committee member, and providing commentary to the media on scholarly matters (Weller, 2010: 49). Boyer (1990: 21) suggests that this component of the scholarly communication process involves the scholar asking the following questions:

"How can knowledge be responsibly applied to consequential problems? How can it be helpful to individuals as well as institutions?"; "Can social problems themselves define an agenda for scholarly investigation?"

Boyer (1990: 23) proposes that the scholar’s work is only important if it is understood through teaching and that this is the most important part of the scholarly process because it “educates and entices future scholars”.

It is evident, then, that scholarly communication corresponds with Boyer's Discovery and Integration aspects of scholarship. Most authors who write about the scholarly communication process focus on these facets. Roosendaal and Geurts (1997: 14), for example, identified four components of these aspects of scholarly communication:

1. Registration, which is the date that a manuscript is received by a journal publisher.
2. Certification, which involves the peer review process and "certifies the claims made in the manuscript".
3. Awareness, which is the process of alerting other scholars of new knowledge by publishing in a journal.
4. Archiving, which is the process of preserving the published manuscript.

It can be seen from these components that the focus is on the writing up and publishing of research articles, book chapters, or other scholarly outputs.

In a similar vein, other authors have also focussed on Boyer's Discovery and Integration components. Unsworth (2000) conceived of seven "scholarly primitives", or the "basic functions common to scholarly activity":

1. Discovering, which is the discovery of knowledge through research;
 2. Annotating, which is the process of interpreting the researched knowledge;
 3. Comparing, which is comparing the text and data of the researched knowledge;
 4. Referring, which is the practice of referencing and acknowledging the authors of the researched knowledge;
 5. Sampling, which involves selecting appropriate samples;
 6. Illustrating, which involves "clarifying, elucidating, [and] explaining the ideas in the researched knowledge;
 7. Representing, which involves publishing and communicating the knowledge.
- (Unsworth, 2000).

Other authors have built on this list. The authors of the CIBER Report (2010: 312) include the process of identifying research opportunities, while Vaughan *et al* add (2013) identifying grant opportunities, finding alternative funding sources, and managing citations.

Most recently, Czerniewicz (2013: 2), referencing Boyer, listed the following aspects of the scholarly communication process:

- Conceptualisation, involving a research and or grant proposal, finding collaborative partners, and conducting a literature review.
- Data collection
- Data analysis
- Findings, which involves presenting the research findings in a particular type of research output, such as a journal article, book chapter, or conference proceedings.
- Engagement, which involves teaching
- Translation, which can be linked to Boyer's component of Application. (2013, pp. 2-3).

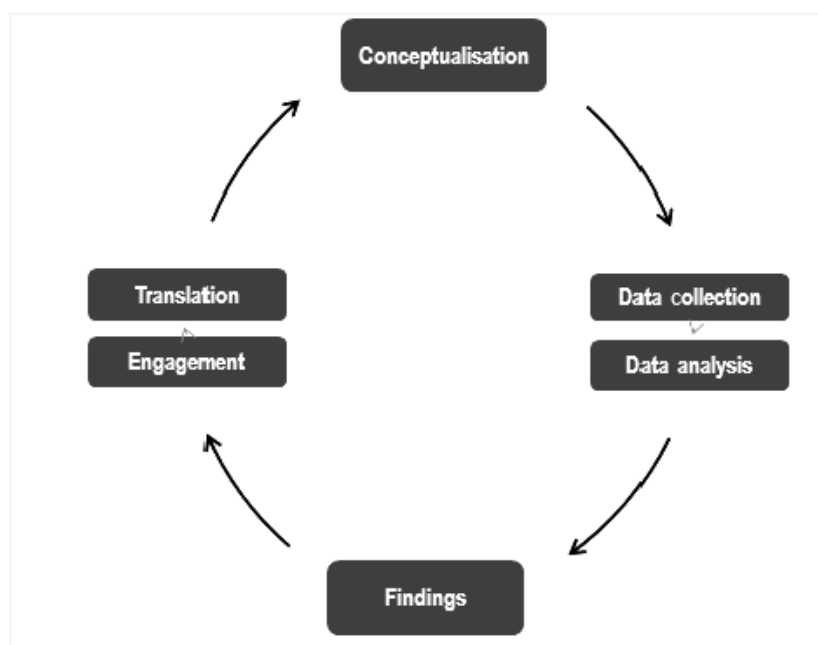


Figure 1 Czerniewicz's "traditional knowledge creation and dissemination cycle"

Czerniewicz's is the only list to take into account all four of Boyer's components of the scholarly endeavour. By including the Engagement and Translation components, Czerniewicz thus encapsulates the entire scholarly communication process and presents the most comprehensive inventory of its components. For this reason, her model was chosen as the most appropriate for the discussion at hand.

For the purposes of this study, Czerniewicz's Translation component, which is Boyer's Teaching aspect of the process, has been excluded. This study seeks to understand why and how scholars use social media for the purposes of scholarly communication, or the creation of, collaboration on and dissemination of research. The Teaching component, while undoubtedly an integral part of what it

means to be a scholar, is a separate academic discussion, involving the use of social media in the classroom as an aid for teaching and learning.

2.3.3 Is social media changing scholarship?

Some scholars argue that social media allow for new practices within traditional scholarship. While peer-reviewed journals and scholarly monographs remain the recognised formats for disseminating research, some scholars believe that social media can extend and evolve these traditional practices. Greenhow and Gleesen (2014: 396) capture this view by saying that scholars have to “navigate traditional expectations while embracing novel practices”.

Veletsianos and Kimmons (2011: 769) believe that the use of social media is leading scholarship in a different direction: new artifacts are being created, such as projects like Wikipedia, that would not have been possible prior to the advent of these platforms. Genoni *et al* (2006: 734) also suggest that Information and Communication Technologies (ICTs) have changed not only what academics research, but how they conduct research.

In addition, some authors, like Czerniewicz (2013), argue that the inclusion of social media usage has fundamentally changed all aspects of scholarship. Czerniewicz’s model (Figure 1) is useful as a basis on which to examine how researchers use or wish to use social media during each point in the research process and it demonstrates how scholarship has changed as a result of the advent of social media.

Traditionally, Czerniewicz argues, these events within the research cycle occurred in a fairly exclusive realm, with conceptualisation of the research, data collection and analysis being events that would be isolated to the researcher him- or herself. When the findings were presented, these would be via publications that were read by a small community, the members of which would have paid for access to these publications.

Building on Boyer’s list, Czerniewicz (2013: 14-15) argues that researchers’ use of social media is giving rise to “new forms of content”, such as the comments on a blog, which, according to her, can be as valuable as the blog post itself. She argues that the use of social media “amplifies, extends or morphs the content”.

The digital realm, then, opens the scholarly communication process up to a wider audience. At the conceptualisation phase, a researcher might choose to discuss his or her thoughts with peers in the field in order to focus the research. The data collection phase might be crowdsourced through the use of online tools, thereby enabling the researcher to collect larger amounts of data. During the findings phase, dissemination of the findings might occur using various social media platforms. At the engagement and translation phases, the researcher might choose to present his or her research in the form of online slides or open education resources, for use by other researchers and teachers.

2.3.4 Is “Openness” unique to the networked participatory scholar?

2.3.4.1 The concept of “Openness”

The term “openness” has traditionally been used to describe the practice of sharing open access content and using open source software or open standards (Weller, 2010: 7). Both Weller (2010) and Willinsky (2009) argue that the meaning of the term has grown to include a change in the attitude scholars have towards the peer review system, engaging with the public, recognising new forms of content as academically valid and the sharing of content.

In his examination of how researchers are using new technologies, Pearce (2010: 5) defines digital scholarship using Boyer’s list and links each component to “a trend towards openness”. Boyer’s “discovery” is thus linked to a trend towards Open Data, “Integration” to Open Publishing, “Application” to the interaction between the scholar and his/her readers and “Teaching” to Open Education.

In this discussion, therefore, the term “openness” is used to express a state of mind (Weller: 2010: 8): the practice of sharing content, as well as an attitude of participation and contribution.

An analysis of the literature in the field has indicated that authors’ opinions differ over the question of whether the concept of openness is unique to the networked participatory scholar. While some argue that social media usage facilitates a collaborative, interactive approach that was always a part of the research endeavour, others claim that social media introduce a new attitude of openness within scholarship.

2.3.4.2 “Openness” is unique to the networked participatory scholar

Some proponents of networked participatory scholarship argue that sharing and communication amongst scholars is unique to networked participatory scholarship and that this practice arose as a direct result of the advent of online tools and social media. “Openness” is therefore seen as a new attitude triggered by social media. Traditional academic publishing is viewed by Maitzen (2012: 348; 352) as “insular” and social media is described as bringing an immediacy to publishing that was not there previously. Borgman (2007: xviii) further contends that these new technologies have brought together “large, distributed teams of scholars”.

Similarly, Risam (2014) argues that traditional and digital scholarship are vastly different. She writes:

“Three principle differences between digital and print scholarship in the humanities require a radical revision to how we review and assess scholarly production and to how scholarly work accrues value: digital scholarship is often collaborative, digital scholarship is rarely finished, and digital scholarship is frequently “public.”

2.3.4.3 “Openness” is not unique to the networked participatory scholar

The foregoing examination of the scholarly process has revealed that one of its central tenets is the dissemination of information. Writing up and publishing of scholarly content, speaking at conferences, and engaging with the public about scientific issues are all forms of sharing that have long been recognised as a core function of the scholarly process. Borgman (2007: 47) writes that “communication is the essence of scholarship” and that “scholarship is an inherently social activity”.

Similarly, Weller (2010: 7) argues that scholars have always operated within networks or communities, those with whom they share and discuss ideas and from whom they get feedback. McClain and Neeley’s (2014: 2) study echoes this view. They found that, while a widely held perception of scholars is that they are resistant to public engagement, they are often involved in a form of public outreach, such as interacting with the mainstream media.

It is submitted that one cannot say of traditional scholarship that it does not comprise at least some aspects of the attitude of openness found in networked participatory scholarship and that, therefore, “openness” is not unique to the networked participatory scholar. Scholarship, by its very nature, has

to be “open” in some way or another: a researcher publishes, speaks at conferences, and shares research findings in order to advance his or her career and to be recognized as an expert by peers in the field. It could be argued, therefore, that networked participatory scholarship is merely an extension of traditional scholarship, in that new tools are being used to enable faster and wider dissemination of research output, but that it has not inherently changed scholarship.

2.3.5 Assessing research output

Before exploring the literature on the use of social media by researchers, mention should be made of research impact, which has bearing on the topic of researchers’ scholarly use of social media.

As discussed previously in this chapter, publishing of research is one of the core aspects of the scholarly process. Motivation to publish comes from internal sources, such as curiosity or personal ambition, or external sources, such as tenure and promotion. Publishing is one of the factors that determine the advancement of a scholar’s career, as it can result in professional recognition, monetary reward, and tenure and promotion (Miller *et al.*, 2011: 423).

The perceived value of published research plays a significant role here. Value can be measured by how often the publication is cited, whether it is judged to be of high quality by other scholars, and whether it advances the field (Nicholas *et al.* 2015: 4).

Traditionally, published research has been evaluated by means of peer review and citation indices. The former is an evaluation by peers and is based on their expertise and knowledge (Brinn *et al.*, 2000: 237). The latter determines the value or impact of an article by counting the number of times it has been cited by other authors (Jones *et al.* 1996: 607).

Scholarly output can also be measured by counting the number of citations to articles within particular journals. This measurement is called “Journal Impact Factor” and overall, it arrives at an average of the number of citations to the number of articles published in a journal over a period of two or five years (Sutton, 2014: 2).

The impact of the entirety of an individual scholar’s research output can also be measured. This is done by means of a metric called the “H-index”. This metric looks at the ratio of articles to citations by a particular author (Sutton, 2014: 2). The H-index can be arrived at using a variety of tools, such as Web of Science

(http://apps.isiknowledge.com/WOS_GeneralSearch_input.do?product=WOS&search_mode=GeneralSearch&SID=U25@i365OgMGgafKCjM&preferencesSaved=), Scopus (<http://www.scopus.com/home.url>), The Google Scholar Universal gadget (<http://code.google.com/p/citations-gadget/>), Firefox's Scholar H-index calculator (<https://addons.mozilla.org/mn/firefox/addon/scholar-h-index-calculator/>), and the Publish or Perish tool by Harzing.com (<http://www.harzing.com/pop.htm>).

With the advent of social media, some have felt that these metrics are no longer able to reflect the entirety of a researcher's productivity. If a researcher had shared content prolifically in the online arena or non-traditional publishing spheres, but published very little in the traditional publishing sphere, his or her impact count would be very low (Featherstone, 2014: 60).

In 2010, Jason Priem started the alternative metrics, or "Altmetrics", movement as a solution to this problem. Altmetrics measure citation counts, web based references, article views and downloads, and mentions on social media on a broader range of outputs than traditional metrics, such as presentations, data sets and content in repositories (Sutton, 2014: 2-3).

Altmetrics can *inter alia* be measured using two main tools: Altmeter (www.altmetric.com) is a paid service that can be used to determine how many times an article or articles have been mentioned or shared on social media. ImpactStory (www.impactstory.org), also a subscription service, allows the author to enter digital object identifiers of articles he/she has authored and then to determine the impact of these articles. (Goodier & Czerniewicz, 2012: 11).

Altmetrics are relevant to the topic of researchers' social media usage and how libraries can support this activity for two reasons. Firstly, it includes researchers' impact on and via social media platforms. Secondly, as will be demonstrated later in this chapter, librarians can leverage this metric in order to prove that they have a role to play in the social media sphere.

In the next section, the reasons some researchers use social media and others do not will be examined.

2.4 Drivers of social media usage for research

The literature reveals that researchers are propelled to use social media for various reasons. If the Library is to support social media usage by researchers, not only is an understanding of the research cycle necessary, but also insight into the reasons some researchers become social media users. Understanding these reasons would guide the Library in developing appropriate social media services to researchers and inform it on how best to serve the needs of researchers in this regard.

2.4.1 Encouragement and pressure

The most common driver for researchers' use of social media found in the literature is encouragement or pressure from peers and supervisors. (CIBER, 2010; Gruzd *et al*, 2012; Nandez and Borrego, 2012; Nicholas and Rowlands, 2011; Carpenter *et al*, 2010). Gruzd (2012: 2347) calls this driver "social influence", while the CIBER Report (2010: 22) sees it as "peer pressure".

Encouragement can take various forms, such as peers providing testimonies of success on social media, or introducing the researcher to new social media platforms (Minocha & Petres, 2012: 16). Nandez and Borrego (2013: 786), for example, quote a researcher who chose to start using Academia.edu in order to join colleagues who were using it.

Some researchers take up social media usage simply due to encouragement from colleagues, while others begin using it out of a need to communicate and collaborate with geographically dispersed colleagues because of the fast and free communication channels that these tools offer (CIBER, 2010; Nicholas and Rowlands, 2011).

Particularly relevant to libraries and the services they offer in support of social media usage by researchers are the drivers mentioned by Carpenter *et al* (2011: 36), who found that some researchers begin using social media because these tools were suggested at a training course and also as a result of support received from their departments, network, or peers. Libraries wishing to support the use of social media by researchers should take careful note of drivers such as these.

Regardless of whether social media usage happens as a result of peer pressure or encouragement, it is clear that researchers are influenced by the actions of their peers and those in positions of authority, such as their supervisors.

2.4.2 Cultural factors

A common driver of researchers' social media usage is "cultural factors" (Carpenter *et al*, 2010). Researchers are being driven to use social media during the research process because of changing cultural norms, such as the proliferation of social media usage in society today (Gruzd *et al*, 2012: 2349), changes in scholarly communication norms and an increasing emphasis on collaboration in research (Veletsianos & Kimmons, 2012: 771; 769).

Some authors demonstrate that researchers will only attempt use of social media tools if their usage fits within their current practice. Rather than changing their workflow to suit the tools, researchers will therefore only use those tools that fit within an established research workflow (Favaro & Hoadley, 2014; Gruzd *et al*, 2012; RIN, 2010). Libraries will therefore not be successful in their attempts to introduce social media tools to researchers if researchers cannot see how they will fit into their existing workflows.

2.4.3 Intentions

A further driver of social media usage amongst researchers includes researchers' intentions for the tools. These intentions differ from their perceived benefits of social media usage, as they encompass the plans that researchers have for the tools when they begin using them, rather than the benefits they derive from them once they have used them for a while.

These intentions include boosting their professional profile and gaining greater reach for their scientific conversations (Bik and Goldstein, 2013: 1), a desire to present their research to the public, advancing their academic career (Mahrt & Puschmann, 2014: 6 and 7), finding collaborators (Nandez & Borrego, 2012: 786), and "taking control" of how they are represented online (Regis, 2012: 356).

Informing researchers of such drivers of social media usage through library-hosted workshops or social media campaigns could entice researchers to use certain tools in order to enhance their reputation, advance their career, or ensure that they are accurately represented online.

2.4.4 Demographics and discipline

Age, gender and discipline could be considered drivers of social media usage, as some authors have found a link between these factors and the use of social media. Pearce *et al* (2011) suggest, for

example, that there might be a link between the discipline and field of research and researchers' speed and willingness to adopt new technologies.

On the topic of age, Ruleman (2012: 319) conducted a survey of students and faculty at the University of Central Missouri to explore their social media usage for research. What she found, possibly predictably, is that students are more active on social media during the research process than faculty. Brown (2009) predicted that younger researchers might in the future "expand existing personal social networking channels to facilitate online sharing of research and data and create new norms of behavior for their disciplines".

Gender and social media usage is mentioned by Shema *et al* (2012: 7), who found that the majority of the blog posts they examined were written by men in the Life Sciences.

Knowledge of these factors would assist libraries in deciding who the target market is for workshops, information, and training sessions on the scholarly use of social media and therefore to use appropriate means of communication to reach that market.

2.5 Uses of and perceived benefits to social media usage

A significant number of the studies conducted around the scholarly use of social media are focused on the uses of and benefits to using social media during the research process. By studying various populations, authors have provided insight into why and how researchers use social media and what they perceive the benefits to be.

There are various benefits to social media for researchers, such as speed and ease of communication, the potential to reach a wider audience, and the potential for collaboration. These and other benefits will be examined in this section. Taking note of the perceived benefits of social media will assist librarians in encouraging researchers to explore the use of various social media tools.

2.5.1 Reading, sourcing and citing information

Despite social media's interactive nature, some studies have found that there are fewer bloggers than there are readers of blogs (Genoni *et al*, 2006; RIN, 2010). Social media is thus used by some

researchers for reading of discussion lists, bulletin boards, and blogs, and for keeping themselves informed of progress in their field (Genoni *et al*, 2006: 737; Minocha and Petres, 2012: 13-145).

Social media can also be an excellent place for sourcing of information for a research project. Nicholas and Rowlands (2011: 80) suggest that “the social media active researcher is much more likely [than those who do not use social media] to put out a general call for information, perhaps on a listserv or a social network.” A study of users of Academia.edu conducted by Nandez and Borrego (2013: 787) found that 59% of the population studied used the platform to follow the activities (and thus read the publications) of other researchers. Similarly, Gu and Widen-Wulff (2013: 769) found that more than 50% of the researchers they surveyed used wikis for reading, sourcing information, and keeping up to date with progress in their field.

Citing information via social media is a recent development. Authors who have studied this phenomenon have limited their studies to Twitter (Stafford & Bell, 2012; Priem & Costello, 2010). It is, however, possible that citing could occur via a variety of other social media platforms, such as blogs, Facebook, and social bookmarking sites, like Delicious.

Citations via social media have been defined as direct or indirect links to academic publications and differ from traditional citations as they are generally not used to support an argument (Priem & Costello, 2010). Citations on Twitter generally take place as part of a conversation, and occur within retweets - which are forwarded tweets - and replies on Twitter (Priem and Costello, 2010).

Not only does citation occur via social media, but researchers are beginning to cite information that is found on social media. A recent report in the *Guardian* (Miah, 2014) revealed that the Modern Language Association had published guidelines on how to cite tweets. “The fact that academics are citing tweets at all,” argues Miah, “says something about publishing and the public sphere”.

2.5.2 Interacting and sharing

Social media, by its very nature, lends itself to interaction amongst its users, and researchers are taking advantage of this facility. A study in 2007 conducted by BioInformatics LLC and cited by Anderson (2007) found that 50% of the researchers they surveyed found blogs, discussion groups, online communities, and social networking in general beneficial “to sharing ideas with colleagues”.

Some researchers have been keen adopters of blogs as they see them as a means of reaching out to and interacting with their readers (Pearce *et al*, 2010: 8). Others use them to share their opinions, interact with peers and establish contact with those outside of their discipline (Shema *et al*, 2012: 1; Mewburn and Thomson, 2013: 1108). Other social media platforms can be used for sharing of information. Najmi and Keralis (2013), for example, categorized researchers' use of Twitter as a way of communicating at a conference and found that it was being used, amongst other things, to share information, professional work, and images and videos.

Interaction can take various forms and be conducted between several communities. Minocha and Petres's (2012: 13-14) study of 105 researchers in three countries found that researchers used social media to interact formally with team members, informally with peers and supervisors, and engage with the public on their topic of research.

Interaction can also take the form of feedback that can be given or received by the researcher on a particular topic whilst still in of the process of research as opposed to merely disseminating or publishing the finished product. Pearce (2010: 8), for example, found that an interviewee blogged each chapter of his book "to get feedback, comments and suggestions from the academic community" while the book was being written.

2.5.2.1 Overcoming isolation

Interacting and sharing information with colleagues via social media can have the added spin-off of assisting researchers to overcome a feeling of isolation during the research process (Minocha & Petres, 2012: 17). Czerniewicz (2013) argues that social media allow the sharing of practices that, in traditional scholarship, were "private", such as gathering of sources for a literature review, and open these practices up to scrutiny. Aspects of the research process, which previously might have happened in isolation, such as sourcing of information and writing the research report, can now be conducted in collaboration with peers through the use of social media platforms. In addition, some researchers might work in a very niche area, and therefore have few peers to communicate with using traditional means of communication. Social media can connect researchers in these niche areas (Stafford & Bell, 2012: 489).

2.5.2.2 Interacting with geographically dispersed peers

A commonly mentioned benefit of social media usage amongst researchers is the facilitation and speed of communication (Czerniewicz, 2013; Shema *et al*, 2012; Groth and Gurney, 2010: 7; Bik and

Goldstein; RIN, 2010: 7). Coupled with this advantage is the ability to contact and interact with colleagues and peers who are geographically dispersed. A variety of authors have found that researchers use social media for this purpose. Minocha and Petres (2012) found that some researchers are using Skype, blogs and wikis to update their supervisors on their research progress, while others are using Second Life to practise presentations with colleagues.

Gu and Widen-Wulff's (2011) study found that the majority of the researchers they surveyed used social media for interacting with geographically dispersed colleagues. Tenopir and Volentine's study (2012: 195) found that 84% of the participants used social media tools to contact peers "at geographically different locations". The participants said that they did this because social media allows them to "freely share ideas and collaborate with a broader scholarly community".

2.5.3 Collaboration

Cohen (2007) calls collaboration one of the central characteristics of social scholarship and as Weller (2011) points out, the scholarly process has always involved collaboration. Collaboration is a benefit of social media that can arise from the ease and speed of communication they enable (RIN, 2010).

Weller (2011) argues that social media make it easier to collaborate with a wider range of colleagues. He also claims that social media are "spawning research projects and writing collaborations."

Collaborative authoring tools such as Google Docs are used widely by researchers who are within the same Faculty, working across disciplines, or in different countries (Nicholas and Rowlands, 2011). Other tools, such as Twitter, can also be used to facilitate collaboration. Veletsianos (2012) argues that the use of Twitter to interact with those outside of the academy can foster collaborative project opportunities. Similarly, Bull *et al.* (2008: 100) point out that Wikipedia is a collaborative project that demonstrates how "collective intelligence can be tapped...".

2.5.4 Enhancing one's reputation

As previously discussed, researchers have always been interested in becoming well known in their field by disseminating their research. This practice enhances their scholarly reputation. Reputation can be measured by the number of scholarly publications a researcher produces and how well it has been received (Nicholas *et al.*, 2015: 5).

Nicholas *et al* (2015: 6) argue that “a good scholarly reputation is indubitably a central hallmark of success in the scientific endeavour on both the individual and the institutional level, indeed, one of its principal enablers”.

A significant benefit of using social media during the research process is the ability to establish and enhance one’s online presence and therefore one’s scholarly reputation (Najmi & Keralis, 2013; Shema *et al* 2012: 1; RIN, 2010: 1). Nicholas *et al* (2015: 7) call social media tools used for this purpose “reputation building tools”. Social media facilitates this need to build reputation and allows researchers to form and have control over their reputation as experts in their field.

Tools that are used for this purpose range from ResearchGate and Academia.edu to research blogs and social networking tools like Twitter, where a researcher can establish his or her expertise in the field by commenting on topical issues, and are valued by researchers because they enable the creation of a professional online profile (Minocha & Petres, 2012: 17).

2.5.4.1 Promoting research output

Enhancing one’s online profile includes the promotion of one’s work (Linzy; Letierce, 2010; Priem and Costello, 2010; Rowlands, 2011; Bik and Goldstein, 2013) Nicholas and Rowlands (2011: 77) as well as Gruzd *et al* (2012: 2346) point out that disseminating research output is a key function of the scholarly process. Nicholas and Rowlands however, argue that dissemination is also a key function of social networking. Authors have found that while traditional modes of dissemination are still largely preferred amongst scholars (Housewright, *et al*, 2013), social media are being used as complementary vehicles for dissemination (Nicholas & Rowlands, 2011: 80; Gruzd *et al* 2012: 2346).

Tools such as Twitter, Academia.edu, Google+, ResearchGate, and LinkedIn can be used to notify others of recent or pending publications (Regis, 2012: 361; Nicholas *et al*, 2015).

2.5.4.2 Greater reach

A further benefit of this promotion component of social media for research is the ability to achieve a greater reach for one’s research output. Regis (2012: 359) defines “reach” as ensuring one’s research is seen by “a multiplicity of audience, of individuals and groups beyond the university sector.” She argues that traditional modes of promoting one’s research output cannot match the reach that social media affords to the researcher (Regis, 2012: 359). Whereas within traditional scholarship, research output was available to a select few, such as one’s peers or those who had access to particular

journal subscriptions, social media allow the distribution of these outputs via blogs and other tools to a wider audience. Pearce *et al* (2011) call this affordance an “opening up the boundaries of academia to the real world”.

Pearce (2010) links the use of social media with Boyer’s (1990) “application” dimension of scholarship, and argues that it enhances this dimension by creating a wider audience and allowing researchers to connect with the public. Groth and Gurney (2010) call the use of blogs by researchers for this kind of interaction with the wider public “participatory journalism”.

2.6 Hindrances to the use of social media during research

2.6.1 Introduction

It is not a given that, simply because the tools are available, researchers will use them. There are a variety of reasons that researchers might be reticent about the adoption of social media in their work. Understanding the obstacles that researchers face in adopting social media, and the reasons behind their reticence, argues the author of a London School of Economics (LSE) blog post (2012), will help those who wish to support their use of social media “to help increase the likelihood of success”.

It is this aspect of the topic that should be of interest to librarians wishing to incorporate the support of social media in research into their suite of services. Do the researchers at their university use social media during the research process? If not, what are the reasons behind their reluctance to use these tools?

2.6.2 Benefits are unclear

Researchers are generally reluctant to take on anything that will add to their workload. If they do not see the immediate benefit of something that is being touted as useful to them, they will not use it. Weller (2012) argues that, until digital scholarship activities, such as contributing to blogs and disseminating one’s research on Twitter, become part of the tenure and promotion process, researchers will remain skeptical about the worth of these tools.

Social media falls into this category of tools. Librarians and those who wish to promote their use for research have to demonstrate their value to researchers and prove to them that the benefit of using these tools outweighs the learning curve that is involved in becoming sufficiently familiar with them to incorporate them into daily use.

There is a variety of reasons a researcher might be reluctant to adopt the use of social media during the research process. Tenure and promotion is one such issue. Weller (2012: 350) quotes Harley *et al*, who write that “enthusiasm for the development and adoption of technology should not be conflated with the hard reality of tenure and promotion requirements in highly competitive and complex professional environments”. Similarly, Pearce (2010: 9) argues that hesitancy on the part of some researchers to adopt social media such as blogging might be due to the fact that publishers are not willing to accept papers that have been previously published.

Various writers have found that researchers are skeptical of social media and their usefulness in research for reasons other than tenure and promotion. Genoni *et al*, (2006: 741-742) for example, found skepticism of and ambivalence towards social media tools for research. Similarly, Brydon (2010: 24) cites a CIBER Report that found that researchers “are still unclear about the benefits of social media and this represents a major barrier to their take up”.

Jones and Cope (2011: 1) argue that social media “make little sense when disconnected from a specific context or community. Indeed, viewing them out of context has led to criticism that social media are trivial and only useful for propagating banal comment”. Cann *et al* (2011) also mention banality in their list of criticisms of social media found in the literature.

2.6.3 A distraction and a waste of time

It follows that, if researchers are unable to grasp the benefits of using social media during the research process, they would view these tools as not worthy of their time. Minocha and Petres (2012: 22-23) encountered this attitude when they found that the researchers they surveyed had concerns about the amount of time they spent on social media. These researchers also viewed it as “a waste of time” and a distraction. Others expressed concerns about being able to separate their personal and professional personae when using social media.

Similarly, a study conducted in 2010 by the Research Information Network (2010: 6) found that only 5% of the respondents to their survey used blogs and other tools to disseminate their research and share works in progress, the rest viewing the use of social media as a waste of their time.

Huwe (2011: 32) compares researchers who use social media tools with online shoppers, and argues that researchers “take a more measured pace” in their adoption of social media. According to him, they feel there should be significant value in the use of social media in research.

2.6.4 Lack of trust

Some researchers do not trust the quality of contributions on social media. A lack of trust is cited as a major barrier to the use of social media in Minocha and Petre’s (2010: 7) survey. Similar to Jones and Cope’s (2011: 1) finding that social media results in the “loss of an authoritative perspective”, this argument can also be linked to the belief that contributions via social media cannot, by their nature, be “academic”, but instead are banal and trivial.

2.6.5 Few custom-made social media tools

Brydon (2010), in her study on the potential of social media in research, raises the question of why researchers in the Humanities particularly have been reluctant to adopt social media in their research. “The chief worry,” she argues “is that social media were created neither to facilitate research nor to advance the work of genuine knowledge creation. We make them work for us...but they only serve our needs imperfectly...” (2010: 23). However, this is not the view of all researchers, as it is clear from the literature that researchers are using a variety of tools, both mainstream, and custom-designed.

In Pearce’s (2010: 12) study, Twitter was found to be more popular amongst researchers than Facebook, as the latter was seen to be used for communication with loved ones, while the former was for “keeping abreast of developments in the field, pointers to reports and readings, research activities of others, and [as a] dissemination vehicle for outputs”.

The most popular tools used by researchers, according to the CIBER Report (2010: 23) published in 2010, are “mainstream” platforms such as Twitter, Google Docs, Skype, and YouTube, “rather than...custom-built solutions”. Brydon (2010: 24) suggests that these mainstream platforms satisfy

the “demand for cheap, instant communication between researchers fueled by the growth of collaborative and interdisciplinary research”.

The literature also shows that blogs seem to be popular amongst scientists (Pearce, 2010; Shema 2012: 1; Groth and Gurney, 2010: 7) and are used for the purposes of practising writing skills and interacting with the public, while Genoni *et al* (2006: 737) found that discussion lists and bulletin boards were being used as the favoured mode of communication by the community they studied.

2.6.6 Lack of infrastructure

The author of a London School of Economics (2012) blog post about the reasons behind the lack of adoption of social media by researchers argues that while researchers in the United Kingdom (UK) have been reluctant to adopt social media during their research process, those in developing countries face “additional barriers...such as poor infrastructure....For researchers in developing countries there are...serious legal, cultural, technological, and language barriers to adopting web 2.0 tools for collaboration and knowledge-sharing”.

Although South Africa is not a developing country, some of the barriers mentioned here are relevant to this country. Broadband, for example, is not yet widespread, and accessing social media during the research process might therefore be seen as an unnecessary complication. The National Broadband Policy for South Africa (2013) suggests that broadband should be part of the country’s basic infrastructure and made available to all parts of the country and estimates that fixed wireless broadband penetration in South Africa was at 2%, while 64.8% of South African households had no access to the internet.

According to the LSE blog post (2012) , the reasons behind poor adoption of social media for research in the UK can be divided into three categories:

- lack of awareness of the existence of social media tools
- inability or a lack of skills to use the tools
- researchers choose not to use the tools.

The author argues that the latter category can result from a lack of time to explore their value, a lack of awareness of their value, or a reticence to share “ideas and data online”.

2.7 Libraries and the support of researchers' use of social media

2.7.1 Introduction

In order to have a role to play within the social media context, academic libraries have to claim the territory as their own. Some researchers are not convinced that the library has a role to play in this regard, and if librarians do not demonstrate their expertise in social media usage for research, they will be excluded from this sphere and run the risk of “decoupling university libraries even further from scholarly communication provision and communication” (Nicholas *et al*, 2011: 374).

Having explored the various aspects surrounding social media usage by researchers, this section will provide an examination of what the literature has to say about how libraries can support this activity. While not many authors have written about libraries and social media usage by researchers, those that have provide valuable insight into how libraries can approach this area.

2.7.2 Guides to the use of social media for research

The literature on this topic demonstrates the increasing interest in the topic of social media for research and includes a number of guides aimed at researchers for their use of social media.

These guides vary in their approach: some, like that of Cann *et al* (2011), include guidance on which social media tools are available, how they can be used in the identification, creation, quality assurance and dissemination of knowledge, and how to manage information overload. Others, like that of Bik and Goldstein (2013), include tips on which platforms are available and how to use them, but also outline the benefits and drawbacks to these platforms. Minocha and Petres (2012: 7) authored a lengthy handbook on the use of social media for “early career researchers and their supervisors to adopt and use social media tools in the service of their research...”. Included in the handbook are profiles of types of social media users, tips on social media etiquette, guidance on the selection of social media tools, and how to use social media during research dialogues.

In addition to general guides such as these, sources such as Linzy's (nd) focus on the use of a particular platform, like Twitter. Reasons provided by Linzy (nd: 4) for use of Twitter as an academic include publicising one's work, creating a network of peers, and being a good source for the latest

news. This guide includes information about the basics of Twitter terminology, best practices for use of Twitter, and potential drawbacks to consider.

These guides offer insight to librarians wishing to support the use of social media into the types of tools that are available. They can serve as an introduction to how to use various social media tools at each stage of the research process, as illustrated by Czerniewicz's (2012) model (Fig. 1). Furthermore, they could be a valuable starting point for librarians wishing to develop guides of their own for researchers at their institution.

2.7.3 Workshops and training programmes

Some authors suggest workshops and training programmes as a method that the library can employ to support researchers' use of social media (Jones & Cope, 2011; Pearce, 2010; Nicholas *et al*, 2011). The "Connected Researcher" programme at the University of Bath (Jones and Cope, 2011: 8), for example, sought to introduce researchers to social media through workshops and seminars. These librarians planned to encourage the use of social media amongst researchers and to form a community of practice around this.

Training sessions should not be prescriptive, however. Authors of the Research Information Network (2010) study recommend that those who support researchers in their use of social media should "encourage open-ended experimentation" with the various tools, rather than imposing the use of particular tools on them.

Training would be one of the most commonly chosen approaches in libraries, as most academic libraries are well-versed in training programmes, having been running information and database training programmes for a number of years.

2.7.4 Position social media within the context of research and the research lifecycle

As discussed previously, some researchers will be reluctant to view the use of social media tools as part of their research process, as they see social media as a distraction or a waste of time. Librarians at the University of Bath responded to this view by offering social media as a solution to their researchers' call for a way to connect with their peers. These librarians sought to "place social media firmly in the context of research" (Jones and Cope, 2011) by linking the topics of workshops on social media to aspects of the research cycle. These aspects were identified as:

- the identification of knowledge

- knowledge creation
- quality assurance of knowledge
- dissemination of knowledge (Jones and Cope, 2011: 2).

Pearce (2010: 17) also recommends that librarians should “facilitate the discovery of new tools and...integration of these new technologies” into the workflow and current practice of researchers, thus concurring with Jones and Cope that social media tools should be matched with the research lifecycle in order to make their worth evident to researchers.

This approach is valuable for two reasons. Firstly, by linking workshops to aspects of the research lifecycle, researchers would gain an understanding of the value of particular social media tools, rather than dismissing them outright as a waste of time. Secondly, by offering workshops based on individual aspects of the research lifecycle, researchers would be able to choose which workshop would best meet their needs.

2.7.5 Formulate profiles of researchers for workshops and training

Various authors suggest that categorising social media users and formulating social media user profiles is valuable to librarians wishing to support researchers’ social media usage (Huwe, 2011; Pearce, 2010). Pearce (2010: 17) argues that these profiles and categories of users are necessary because not all researchers will have the same needs. Some will use social media merely for sourcing of information, while others will be creators of social media content and use the tools for the dissemination of their research.

A 2010 Forrester Research Inc. study cited by Kaplan and Heinlein (2010) categorised academic users of social media. The categories this study identified were:

- creator
- conversationalist
- critic
- collector
- joiner
- spectator
- inactive

Pearce (2010: 17) argues that, because the tools are being used in varied ways, librarians should adopt a “multilayered and flexible system of support [and] training” and tailor their training sessions to fit each particular need.

The categories such as those listed above could be used to identify specific tools for particular types of users. The “creator”, for example, might prefer blogging tools, such as Wordpress or Blogger, for the creation of essays and opinion pieces, the “conversationalist” might prefer using Skype, or blogging software to communicate with peers and the general public, and the “critic” might choose to use Twitter to keep abreast of the latest research and to comment on it.

2.7.6 Identify social media champions

Workshops and training sessions can be used not only to train researchers to use social media during the research process, but also as an opportunity to identify social media “champions” who can spread the word about its value.

Jones and Cope (2011: 8), for example, report that their hopes for the Connected Researcher workshop attendees is that they will share their success stories of social media usage for research with their peers and therefore encourage wider usage of these tools (2011: 8). The authors of the RIN study (2010) also recommend that librarians should encourage those who have experienced success in the use of social media for research to share their experiences with their colleagues.

Brown (2009) places the responsibility of identifying a champion with librarians and writes that they should “identify a champion of new practices or an influential researcher who has strong ties in the library” in order to promote the use of social media for research.

2.7.7 Curate and preserve social media content

Librarians are experts in the curation and preservation of traditional library material, and, with the advent of institutional and digital repositories, are increasingly moving into the sphere of curation and preservation of digital material. Genoni *et al* (2010: 8) argue that librarians should “help set standards for curation and preservation” in the social media sphere. This is an emerging area, and one in which standards have not yet been set. The curation and preservation of content on social media would be an extension of already established services and could involve services such as:

- Downloading of content from social media and placing these items into institutional repositories.
- Preservation of social media conversations, such as tweets and Facebook conversations. This would involve librarians becoming familiar with how these platforms archive their material and requesting access to these archives on behalf of researchers.
- The presentation of social media conversations between researchers using other social media platforms, such as Storify, thus curating that content and presenting it for the benefit of others.

2.7.8 Advocacy

2.7.8.1 Introduction

Most of the suggestions for librarians' involvement explored thus far would, to a large extent, be familiar to academic librarians. The inclusion of new and innovative services, such as advocacy is necessary, however, in order to assist in ensuring that librarians remain relevant and respond to the needs of the communities they serve.

The literature shows that researchers use various tools to disseminate their research. A role that could be played by the library is that of collating and promoting the content on these varied platforms and making it more easily accessible.

Advocacy of research output could be achieved through the use of social media. It would involve the filtering and aggregation of content that is produced by researchers, whether via social media or not.

2.7.8.2 Filtering and aggregation of content

Genoni *et al* (2006: 743-744) write that libraries have an important role to play in filtering information for researchers and embedding themselves in the scholarly communities they support. They maintain that librarians play an active role in the research cycle and that they have a part to play in ensuring that researchers are "e-research literate".

Huwe (2011: 31) writes that the "creators" and "conversationalists" mentioned earlier can be supported by the library in two ways: by aggregating content that is produced by researchers using

these media, and by following, “retweeting” and re-distributing researchers’ content, thus advancing “the reputation of the university as well as its reach into new media realms”.

Librarians would therefore not only be teaching and promoting the use of social media to researchers, but also using these tools themselves in order to ensure the best use is made of them to attain the widest reach for research output.

2.7.8.3 Altmetrics

Altmetrics, as discussed previously, is another new sphere in which librarians can play an advocacy role. Sutton (2014: 5) writes that libraries have a role to play here because it is “a natural extension of what libraries and librarians already do”. She argues that knowledge of Altmetrics strengthens the librarian’s educational role as the librarian helps the researcher “understand and manipulate their own impact” (Sutton, 2014: 5). Using Altmetrics, therefore, librarians could track downloads of articles and mentions on social media and package this information for researchers to demonstrate to them the impact of their research. Sutton argues that this would not only strengthen the new educational role of librarians, but also respond to the current climate of “return on investment” in higher education institutions, where researchers have to prove their worth via their impact (Sutton, 2014: 5).

2.8 Conclusion

It is evident from the literature on this topic that social media are being employed during the research process in a variety of ways. Although some authors believe that these tools have fundamentally changed scholarship, it is the current author’s contention that social media enables intentions and practices that researchers have traditionally used, such as collaboration, communication, and dissemination.

There are various factors which encourage or drive researchers to use social media, as well as many benefits to using them. Librarians should familiarise themselves not only with these, but also with those factors that hinder researchers from using social media usage. The literature also makes suggestions for how libraries can support social media usage by researchers. Knowledge, therefore, of these studies will enable librarians to create appropriate support mechanisms for the use of social media by researchers.

Chapter 3: Research Methodology

3.1 Introduction

As has been demonstrated in the previous chapter, researchers are using social media tools during the research process to disseminate their research output, to collaborate with other researchers, and to enhance their research profile. This is an emerging area of interest in South Africa. While Onyancha (2015) covers the use of ResearchGate by South African scholars, all of the studies in the area of library support of social media use for research that have been produced thus far have been from countries other than South Africa. This study, therefore, addresses a gap in the literature and explores the use of social media by researchers at a leading South African university.

The purpose of this study is to explore how the University of Cape Town (UCT) Libraries can support the scholarly use of social media by researchers at the University. This chapter will outline how the study was carried out, the research approach and design, the reasons behind the choice of research instruments and how they were designed, and the limitations of the study.

3.2 Research design and approach

3.2.1 Introduction

Choosing a research design involves making decisions about the sampling, data collection and data analysis process (Terre Blanche *et al.* 2006: 48-49; 57). The research design is a comprehensive plan for data collection in an empirical research project (Bhattacharjee, 2012: 35). It provides the framework for how the data will be gathered and analysed and how the conclusions will be presented (Leedy 1993, p.127). Trochim calls the research design the “glue that holds the research project together” (Trochim 2001, p.171).

This study took a mixed methods approach, which involves using both quantitative and qualitative data. The mixed methods approach mixes qualitative and quantitative methods. For this study, this was achieved by using both a questionnaire and interviews as data collection methods. The questionnaire gathered primarily quantitative data and included open-ended components to some questions, while the interviews gathered qualitative data.

Authors have defended the use of a mixed methods approach for various reasons. A mixed methods approach is encouraged, for example, by Bhattacharjee (2012: 35) who writes, “Sometimes, joint use of qualitative and quantitative data may help generate unique insight... hence, mixed mode designs that combine qualitative and quantitative data are often highly desirable.” Denscombe (2001: 173) argues that the two methods are not mutually exclusive and that social researchers rarely “rely on one approach to the exclusion of the other”. Harrison, quoted in de Vos (2002: 369), goes so far as to argue that the divide between qualitative and quantitative methods is superficial and that quantitative methods cannot exist without qualitative knowledge, while Durrheim (in Terre Blanche *et al* 2006: 47) takes a more measured view by arguing that quantitative and qualitative research have different strengths.

While the quantitative data that were gathered for this study provided an overview of the use of social media by scholars at UCT, the intent behind collecting qualitative data was to gain further insight into why some researchers use social media during the research process and others do not.

Quantitative and qualitative methods have different strengths. These are examined here to clarify the reasons behind their use in the current study.

3.2.2 Quantitative methods

According to Denscombe (2001: 174), quantitative research “tends to be associated with numbers as the unit of analysis” and its aim is to quantify a phenomenon and then analyse it by means of statistical methods. Kumar (2005: 12) argues that quantitative research is conducted to determine the extent of a problem. Quantitative data provide “a more general understanding of a problem” (Cresswell & Plano Clark, 2011: 8) and the results are generalisable. This means that if a portion of the population is studied using quantitative methods, the results can be applied to the rest of the population (Durrheim in Terre Blanche *et al*, 2006: 132).

The quantitative research method, also known as a structured approach, is one in which everything is pre-determined, such as the objectives of the research, its design, and the questions to be asked of the research subjects (Kumar, 2005: 12).

Quantitative research, therefore, was chosen as an appropriate data gathering method for the current study because the researcher needed to gain an overview of the extent of scholarly social

media usage at UCT and obtain a general understanding of the issue. However, true statistical analysis did not take place, as the data was analysed simply by calculating frequencies and averages.

Data gathered from the questionnaire was not purely quantitative, as some qualitative data was included. Open-ended options were added to some questions. Respondents were merely asked to add to a list of options for some questions, such as social media tools used for specific purposes, while for others, respondents were asked to provide more information on a question, such as why social media is or is not used.

3.2.3 Qualitative methods

Qualitative data provide a “detailed understanding” of a problem (Cresswell & Plano Clark, 2011: 8). Denscombe (2001: 175) argues that “qualitative researchers tend to rely on a detailed and intricate description of events or people...to convey the complexity of the situation”. Patton argues that qualitative methods ensure that issues are studied in depth and detail (Patton, 2002: 14).

Also known as the unstructured approach, this method allows flexibility in the objectives, the research design and the questions to be asked. Whereas quantitative methods explore the extent of a problem, qualitative methods explore the nature of a problem. This method is used when the research need is to describe a phenomenon (Kumar, 2005: 12).

Qualitative data is described using language rather than numbers. Unlike quantitative research, qualitative research takes information from interactions such as observations and recordings and converts it into the written word (Denscombe, 2001: 174).

Qualitative research was chosen for the current study to augment the quantitative data that were gathered. The purpose was to gain a more in-depth understanding of the topic at hand by interviewing respondents of the questionnaire who volunteered to be interviewed by providing their contact details.

3.3 Population and sampling

3.3.1 Selection of participants

The purpose of this study was to determine how the University of Cape Town (UCT) Libraries can support the scholarly use of social media by researchers at UCT. The target population that was to be studied, therefore, involved researchers at UCT. This included all academic staff employed at UCT in 2014 as well as all postgraduate students enrolled to complete a Master's or Doctoral thesis at UCT in 2014. The total population comprised 10534 people, with 1665 academic staff members and 9369 postgraduate students (Hendry, 2014).

The original intent of the researcher, in order to ensure a good response rate to the survey, had been to distribute the questionnaire to all academic staff employed at UCT in 2014 as well as all postgraduate students who were enrolled in 2014 to complete a Master's or Doctoral dissertation. This goal, specifically with regard to academics could, however, not be realised as the targeted population of 1665 academic staff was deemed by UCT's Department of Human Resources as too large and the researcher was asked to reduce this number to at least 1200.

In order to make sure that a representative sample of academics was chosen, the researcher ensured that the eight Faculties within the University of Cape Town: Humanities, Science, Engineering and the Built Environment, Health Sciences, Commerce, Law, the Graduate School of Business, and the Centre for Higher Education Development were represented. Respondents were then randomly chosen from these subgroups; 1198 out of 1665 staff members were chosen.

Sampling was not carried out on the postgraduate population.

Interview candidates were identified using convenience sampling, which entailed interviewing volunteer respondents of the questionnaire. Respondents to the questionnaire were given the option of providing their contact details should they be willing to be interviewed further on the topic of the scholarly use of social media by researchers.

3.3.2 Challenges encountered

The main challenge encountered in this part of the study was the disappointingly poor response rate to the questionnaire: 67 of 1198 academic staff responded to the questionnaire and only 100 of 9369

postgraduate students responded. The response rate therefore amounted to 1.58%. The consequence of this was that the results of data obtained from the questionnaires cannot be generalised to the larger population and the information gathered from this study therefore cannot be regarded as a true reflection of the use of social media by researchers at UCT.

The fact that a number of constraints were imposed by UCT resulting in a poor response rate can be seen as a key factor contributing to this. Some of the most important issues in this regard are the following:

- *Distribution of questionnaires*

The researcher was required to liaise with two separate UCT Departments, namely the Human Resources Department for access to staff, and the Institutional Information Unit for access to postgraduate students.

As mentioned previously, the Human Resources Department deemed the total population of 1665 academic staff too large to survey and the researcher was permitted to contact, *via* the Human Resources Department, a maximum 'sample' of 1200 persons. No reasons were provided for this requirement and the specific maximum percentage of approximately 72% of academic staff members to be surveyed.

Sampling was not used on the portion of the population that comprised postgraduate students due to the timing of the distribution of the questionnaires; the student survey had already been distributed by the Institutional Information Unit when the request from the Human Resources Department for sampling (the academics) was received by the researcher. However, a problem was encountered here as well.

It was the intention of the researcher to specifically target postgraduate students who were enrolled to complete a Master's or Doctoral dissertation. These individuals were, however, not selected by the Institutional Information Unit when the questionnaire was distributed. As a result, the questionnaire was distributed to all 26000 students enrolled at UCT, both undergraduate and postgraduate. As this was unacceptable and did not comply with what was asked for by the researcher, she requested a retraction, but this was denied by the Department.

In spite of this setback, the composition of the questionnaire automatically filtered out undergraduate students, as one of the first questions in Section 1 asked respondents to indicate their level of studies and only the following three options were provided: Master's student, Doctoral student, or Post-doctoral researcher. The target group was therefore successfully identified.

- *Timing*

The delay in distributing the questionnaires was a further problem encountered in this study. Official University ethical clearance for the academic staff survey was obtained on the 23rd of September 2014, but their questionnaires were only distributed on the 3rd of November. Questionnaires to postgraduate students were distributed a little earlier, on the 20th of October 2014, but still later than originally intended by the researcher.

The delay in distribution came about as a result of two factors:

- The researcher was not permitted to send out the questionnaire herself, but had to rely on the two separate UCT departments mentioned previously to do this: the Department of Human Resources and the Department of Institutional Information. Correspondence and discussion regarding sampling also slowed the process down considerably.
- In addition, before the two above-mentioned departments could distribute the questionnaires, contact details for all respondents had to be obtained from another department on campus, namely the Department of Information and Communication Technology.

This delay in distribution of the questionnaire would have impacted negatively on the response rate mainly because the dates coincided with the end of lectures for the year. This meant the beginning of examinations for the students and the beginning of marking of examinations for academic staff. Time and inclination of academics to respond to a questionnaire at this stage would not have been a priority.

A proportion of Master's students who received the questionnaire would have been those who were completing a Master's by coursework. The response rate would therefore have been negatively impacted because those writing examinations would have been reluctant or unable to respond.

- *Reminders*

Creswell (2009: 150) advises that a survey should be distributed at least four times to ensure a high response rate. Denscombe (2001: 21) affirms this and writes that in large-scale questionnaire surveys, the researcher should incorporate tactics to contact those who did not initially respond to the survey in order to increase the response rate.

Responses to the questionnaire for the current study gradually decreased during the first week after distribution. The researcher's request to the relevant Departments for a reminder to be sent out to academic staff and students to complete the survey was refused. This refusal to remind participants about the questionnaire would have negatively impacted on the response rate.

3.4 Research instruments

3.4.1 Introduction

Data was collected by means of a questionnaire that was distributed to the population to be studied, namely the academic staff and postgraduate students at UCT. The questionnaire primarily secured quantitative data, providing an overview of the status of scholarly social media usage at UCT.

Following this, interviews were conducted on seven survey participants who volunteered to be interviewed by providing their contact details via the questionnaire. Five out of these seven respondents were students and two were academic staff. One held a dual role: that of Assistant Lecturer and Doctoral student. Three interviewees were in the 21-30 age range, and one each was in the 18-20, 31-40 and 41-50 age range. The interviews gathered qualitative data by providing insight into the reasons behind why researchers at UCT use or do not use social media.

3.4.2 The questionnaire

A questionnaire was chosen as the primary research instrument in order to reach as many of UCT's academics and postgraduate students as possible. It was created using Google Forms (<https://docs.google.com/forms>) and invitations to participate were sent out via email. The majority of the questions in the questionnaire were closed-ended, with some open-ended questions providing the option for respondents to provide more detail.

3.4.2.1 Advantages of using questionnaires

- Wide coverage

Unlike interviews, which require personal interaction and therefore a significant investment of time, questionnaires can be sent out to many people simultaneously (Denscombe, 2001: 7; Rugg and Petre, 2007: 145). The population to be surveyed for the current study was a large one, and therefore a questionnaire was chosen as the appropriate method to achieve this and reach as many UCT researchers as possible.

- Inexpensive and anonymous

Questionnaires are inexpensive and offer greater anonymity than other data gathering methods (Kumar, 2005: 130). Free software, such as email, Google Forms (drive.google.com), or a free version of survey software such as SurveyMonkey (<https://www.surveymonkey.com>) can be used for their distribution. Google Forms was chosen for the current study. Face-to-face interaction is not required for questionnaires if the target population is literate, so anonymity can be ensured. Since the population in question is literate, questionnaires were chosen as a suitable mode for the gathering of data.

3.4.2.2 Disadvantages

There are a number of disadvantages to using questionnaires. A disadvantage that was deemed relevant to the current study was the fact that questionnaires often elicit a low response rate. Kumar (2005) deems a 50% response rate good and warns that a response rate of as low as 20% may be expected. A low response rate can be avoided by improving the quality of the cover letter, so as to increase interest in the study. Ensuring the layout and length of the questionnaire is ideal as a further method of avoiding a low response rate. Respondents will also be less inclined to return a questionnaire that is complex and overly lengthy.

The questionnaire (see appendix A) that was used in this study was short and completion time was estimated at less than 15 minutes. The cover letter is included as Appendix B. It introduced the study and covered the purpose of the research. Participants were told how many questions to anticipate within the questionnaire and how long it was estimated to take to complete.

3.4.2.3 Content of the questionnaire

Closed-ended questions were chosen as the primary means of gathering data within the questionnaire to determine the “degree, frequency, and comprehensiveness” (De Vos, 2002: 180) of the topic and because the (potential) sample chosen was a large one. Closed-ended questions ensure that the researcher obtains the information that is needed. As the responses are often categorized, it makes analysis of the responses easier (Kumar, 2005: 135; Neuman, 2000: 261).

A disadvantage of closed-ended questions can be that, as responses are restricted to those chosen by the researcher, they can lack depth and variety. In an effort to overcome this, the researcher provided an “Other” option to most questions, in which respondents could include answers not provided in the pre-selected lists. Another disadvantage mentioned by Neuman (2000: 261) is that closed-ended questions force respondents to “provide simplistic answers to complex issues”. Interviews were therefore included in this study to ensure that the issue was explored in more depth.

Questions in the questionnaire were divided into three sections:

- A demographics section was included to gain an understanding of the kinds of researchers at UCT who are using or not using social media during the research process.
- The social media usage section of the questionnaire began with a question about personal social media usage, which was asked to establish whether there was a link between scholarly social media usage or lack thereof and personal social media usage. The questionnaire then separated those who used social media during the research process and those who didn't. The structure of the questionnaire automatically enabled the latter group to omit questions that covered specific social media usage. Questions to the former group included types of social media tools and the reasons for their usage as well as how these fitted in to the research lifecycle. These questions aimed to inform libraries on how social media usage could be promoted and how to entice researchers to use the tools.
- The last section of the questionnaire included questions about the Library's role in supporting the scholarly use of social media. These were asked to provide guidance to libraries in how to support this activity.

3.4.3 The interviews

Interviews were chosen as a research instrument to follow up on and to complement questions asked in the questionnaire, as well as to pursue answers in more depth and detail (Denscombe, 2001: 112). Different interview questions were prepared for those who used social media for their research and for those who did not use social media for their research (see Appendices C and D).

Semi-structured, one-to-one interviews were conducted. The semi-structured approach allowed for an interview schedule which set out the questions to be asked, but also allowed for flexibility with regard to the order in which questions were asked and for the interviewee to develop on or elaborate his/her response (Denscombe, 2001: 113; Rugg and Petre, 2007: 138).

3.4.3.1 Advantages

Interviews were used in the current study in order to gather more in-depth information and to augment the data gathered from the questionnaire as the investigator is able to gather more information about particular questions through probing (Kumar, 2005: 131). Additional advantages of semi-structured interviews that pertain to this particular study are: ensuring a better response rate than other survey approaches (Denscombe, 2001: 8; Kumar, 2005: 131; Neuman, 2000: 273) and allowing researchers to control the line of questioning (Cresswell, 2009: 179).

3.4.3.2 Disadvantages

A disadvantage of interviews is that, as they necessitate one-on-one contact, they can be time-consuming and therefore expensive (Kumar, 2005: 131; Denscombe, 2001: 8; Neuman, 2000: 273). The interviews conducted for this study were not overly time-consuming, as seven interviews were conducted, each amounting to approximately 30 minutes in duration.

In addition, as each interaction is unique, the quality of information gleaned from each interview might vary (Kumar, 2005: 131 and 132). Researcher and interviewer bias might also play a part in lowering the quality of data gleaned from interviews. If the researcher is the interviewer, his or her own bias might be unwittingly brought to the questions in the interview (Kumar, 2005: 132). In order to ensure that the information obtained from each interview was consistent, the researcher attempted to minimise commenting about answers to the questions and interrupting the interviewees. This ensured that each interviewee was asked the same questions, and thus, the conversations conducted with each interviewee were similar.

Seven interviews were conducted for the present study and the longest interview was 33 minutes in duration. The same questions were asked of each interviewee

3.4.3.3 The interview schedules

The first group of interviews that were conducted with those who responded in the questionnaire that they do use social media during the research process were divided into three sections:

- Questions in section 1 concerned respondents' views about the use of social media during the research process and covered topics that were identified in the literature review as benefits to or drivers of scholarly social media usage. This included interrogating what drove these respondents to use social media during the research process and asking them to comment on whether social media was changing the research process. These questions were asked in order to gain greater insight into the drivers of social media usage.
- Questions in section 2 and 3 of the interview were based on questions asked in the questionnaire about how social media was being used, in order to delve deeper into the reasons behind the scholarly use of social media by these researchers and their views on how the Library could support this activity.

The interviews conducted with those who responded in the questionnaire that they did not use social media during the research process were also divided into three sections:

- Questions in sections 1 and 2 of these interviews concerned the personal use of social media and potential drivers of scholarly social media usage. The questions were asked in order to gain insight into why some researchers choose not to use social media and to inform libraries about what the hindrances are.
- Questions in section 3 were asked to establish whether the Library had a role to play in the encouragement of the use of social media during the research process.

3.5 Data analysis and interpretation

Data that was secured via the questionnaires was collated automatically on a Google spreadsheet. This spreadsheet was exported to Microsoft Excel and the information was analysed manually by calculating the number of times certain categories appeared. In some cases, responses in different

categories were cross-tabulated. For example, the number of Doctoral students and Master's students who use social media during their research were tabulated and compared.

The data secured from the interviews were recorded and transcribed. These transcriptions were analysed using conventional content analysis (Hsieh and Shannon, 2005: 1279). This method involved reading the data repeatedly, and then allowing categories to emerge from the responses obtained for each question (Kassarjian, 1977: 12).

3.6 Conclusion

The research approach for this study was a mixed methods approach, with responses gleaned from a questionnaire being supplemented by interviews with volunteer respondents. The population studied included all researchers at the University of Cape Town during 2014.

Data was analysed manually using Excel spreadsheets for the data from the questionnaire and applying conventional content analysis to the interview transcriptions.

In the next chapter, the data obtained will be analysed.

Chapter 4: Data Analysis

4.1 Introduction

As described in the previous chapter, a questionnaire was distributed via an online survey to postgraduate students and academic staff at the University of Cape Town (UCT). The aim of the questionnaire was to acquire an overview of the extent of social media usage for research purposes amongst UCT researchers.

Respondents to the questionnaire were requested to provide their contact details if they were willing to volunteer to be interviewed. Interviews were conducted with all volunteers who were contactable.

This chapter presents and discusses the findings of the questionnaire sent to UCT researchers and the interviews conducted with respondents who volunteered to be interviewed via the questionnaire.

4.2. The questionnaires

4.2.1 Demographics

The literature shows that demographics and discipline could be drivers of social media usage (Pearce *et al*, 2011; Ruleman, 2012; Shema, 2012). In order to test this and also to establish the composition of the respondent population, respondents were asked to reveal their age, gender, the Faculty in which they were working or in which they were studying, as well as their academic position (if they were employed) or academic level (if they were a student).

4.1.1.1 Age

The largest group of respondents (38%) fell into the 21-30 age range, followed by the 31-40 age range, with 28% of respondents. 15% of respondents reported that they were in the 41-50 age range and 9% reported that they were in the 51-60 age range. The fewest respondents were in the 18-20 age range (5%) and the 60 and older age range (5%).

4.2.1.2 Gender

The questionnaire attracted more female (60%) than male (40%) respondents.

4.2.1.3 Faculty

Respondents were asked which Faculty they were employed by or studying in. Figure 2 shows that the largest group of respondents came from the Health Sciences Faculty (25%), followed by the Humanities Faculty (22%), and the Science Faculty (19%). The Commerce Faculty and the Faculty of Engineering and the Built Environment (EBE) made up 15% and 14% of respondents respectively. The Law Faculty and the Graduate School of Business each drew 2% of the respondents, while the Centre for Higher Education Development (CHED) drew 1% of respondents.

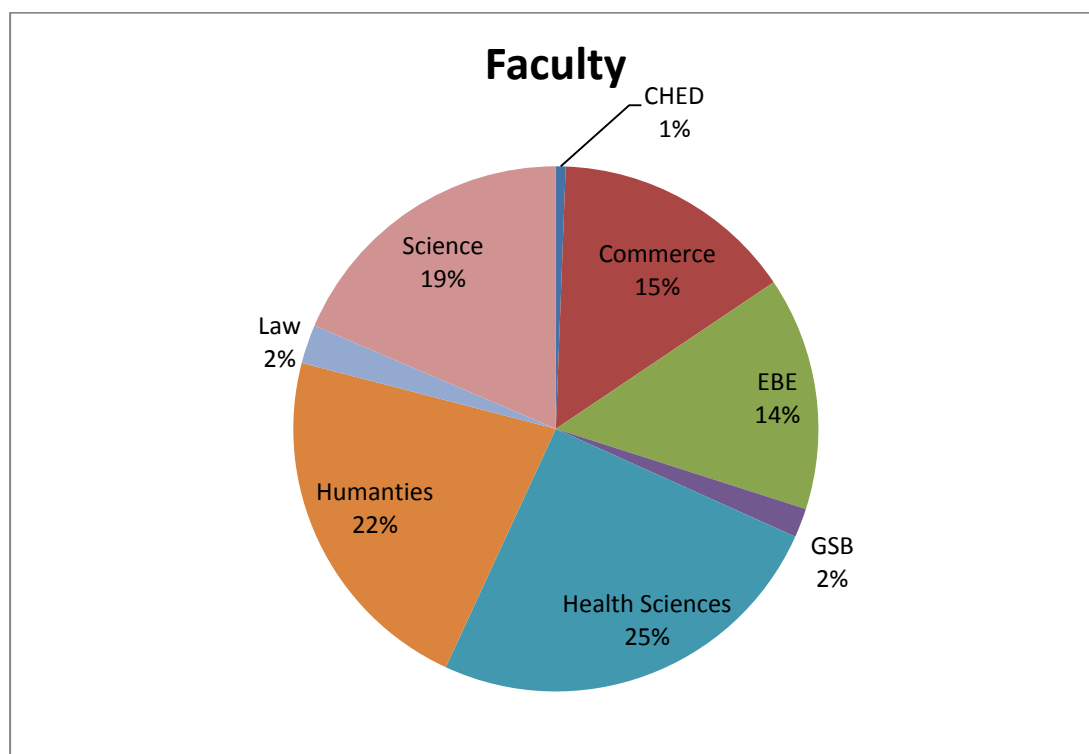


Figure 2 Faculty

4.2.1.4 Position/Academic Level

Respondents were asked to indicate the academic position they held at the University, or, if they were students, to indicate their academic level. The largest group of respondents were Master's students (27%). Doctoral students, Junior Research Fellows, and Lecturers made up 14% of respondents each. 12% of the respondents were Senior Lecturers. An equal number of Associate Professors and Post-Doctoral Researchers (7%) responded. Professors made up 4% of respondents and Assistant Lecturers 2%.

Of the total respondents, six indicated that they held dual roles: Assistant Lecturer and Doctoral Student; Junior Research Fellow and Doctoral Student; Lecturer and Doctoral Student, and Senior

Lecturer and Doctoral Student. For the purposes of this analysis, the academic position was counted rather than the academic level.

4.2.2 Social media usage

In order to establish whether there was a correlation between personal social media usage and usage of social media for research purposes, respondents were asked to indicate whether they used social media in their personal capacity and whether they used it for research purposes.

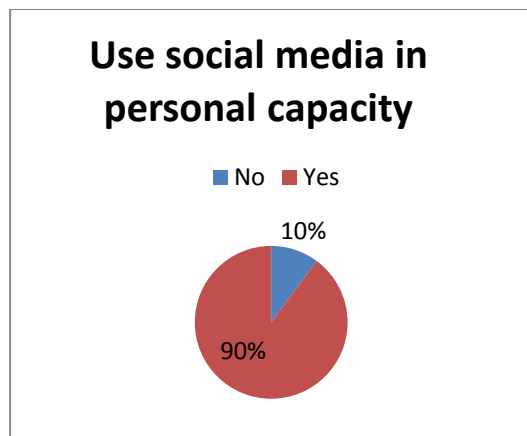


Figure 3 Use social media in personal capacity

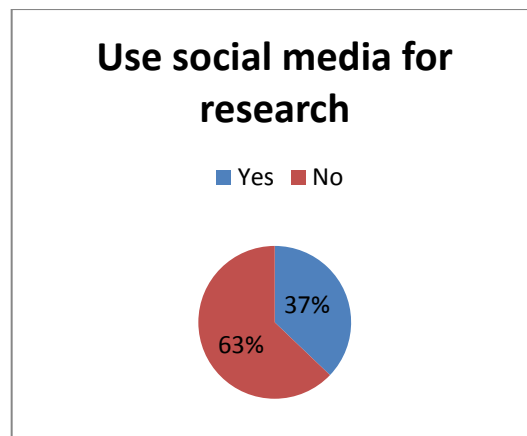


Figure 4 Use social media for research

A comparison of these figures reveals that a greater percentage (90%) of the respondents indicated that they use social media in their personal capacity than those who use it for research purposes (37%). It also shows that a smaller percentage of respondents indicated that they did not use social media in their personal capacity (10%) than those who indicated that they did not use it for research purposes (63%).

4.2.2.1 Type of tool used for research purposes

Tools were categorised according to activities that take place via social media during the research process and respondents were asked to choose which tools they would use for each activity. This question also provided the opportunity for respondents to add tools that were not listed.

a. Collaborating on research / Writing collaboratively

It was clear from the results that Google Docs is the most popular tool amongst respondents for collaboration, with 62% of responses.

Wordpress made up 14% of responses, Blogger 7% and Dropbox 4%. Less popular tools for collaborating were Facebook, GitHub, Google Drive, Scrivner, Twitter, and Whatsapp, with 1% of responses each. Other tools added by respondents were MSWord, the UCT Libraries website,

skills.universe.com. With the exception of skills.universe.com, the latter tools cannot be classified as social media tools, and would therefore indicate that these respondents were unclear about what constituted social media tools for collaboration.

b. Social networking/sharing content

In response to the question of which tools were used for social networking or sharing of content, Facebook was the most popular tool (17% of responses). Other popular platforms were LinkedIn (13%), Twitter (13%), Skype (11%), Dropbox (11%), Academia.edu (11%), ResearchGate (8%), Google+ (7%), and Google Hangouts/Chat (6%). Whatsapp made up 1% of the responses. Other tools added by respondents and that made up less than 1% of responses were Mendeley, Figshare, skills.universe.com, Skydrive, and Facebook chat.

c. Image and video sharing

In response to the question about which tools are used for image and video sharing, YouTube was the most popular choice (70% of responses). Pinterest followed with 11% of responses, and Picasa with 2% of responses. Other tools added by respondents were Tumblr, Instagram, Figshare, Flickr, Google Drive, Twitter and Vimeo. These tools made up 2% of responses each.

d. Managing references/sources

Respondents were asked to choose from a list of bibliographic management software platforms that had a social aspect to their functionality. The most popular sites amongst respondents were RefWorks and Mendeley (36% and 33% of responses respectively). EndNote made up 9% of responses, while Zotero and CiteULike each drew 7% of responses. Other tools added by respondents were MS Word, Papers and BibTex.

e. Sharing presentations

In the area of sharing presentations, Slideshare was the most popular tool (41% of responses), followed by YouTube (39%). Less popular choices were Dropbox (7%), and Prezi (5%). Other tools added by respondents were “my personal blog” and Vula (an online learning management system used at UCT).

f. Social bookmarking and tagging

Delicious was the most popular tool for this activity with 33% of responses, followed by Facebook and EverNote with 11% of the responses each. A tool added by one respondent was a browser plugin, indicating that the concept was not understood.

g. RSS Feeds

Feedly was the most popular tool for this activity with 60% of responses, followed by Facebook, with 10%. One respondent indicated that they used “multiple sites”.

h. Content curation

The most popular tool was Pinterest with 35% of responses. A tool added by respondents was Tumblr, with 24% of responses. Tools added by respondents in the “Other” category were Storify, Scoopit, Twitter, and NVivo with 6% of responses each.

4.2.2.2 Reasons for not using tools

Respondents were asked to choose from a list of four options to indicate why they did not use particular tools. These options were:

- I am not familiar with this tool
- I have tried to use this tool, but it has not proved useful for my research
- The benefits of using this tool are unclear to me
- I find this tool difficult to use

Figure 5 illustrates the results.

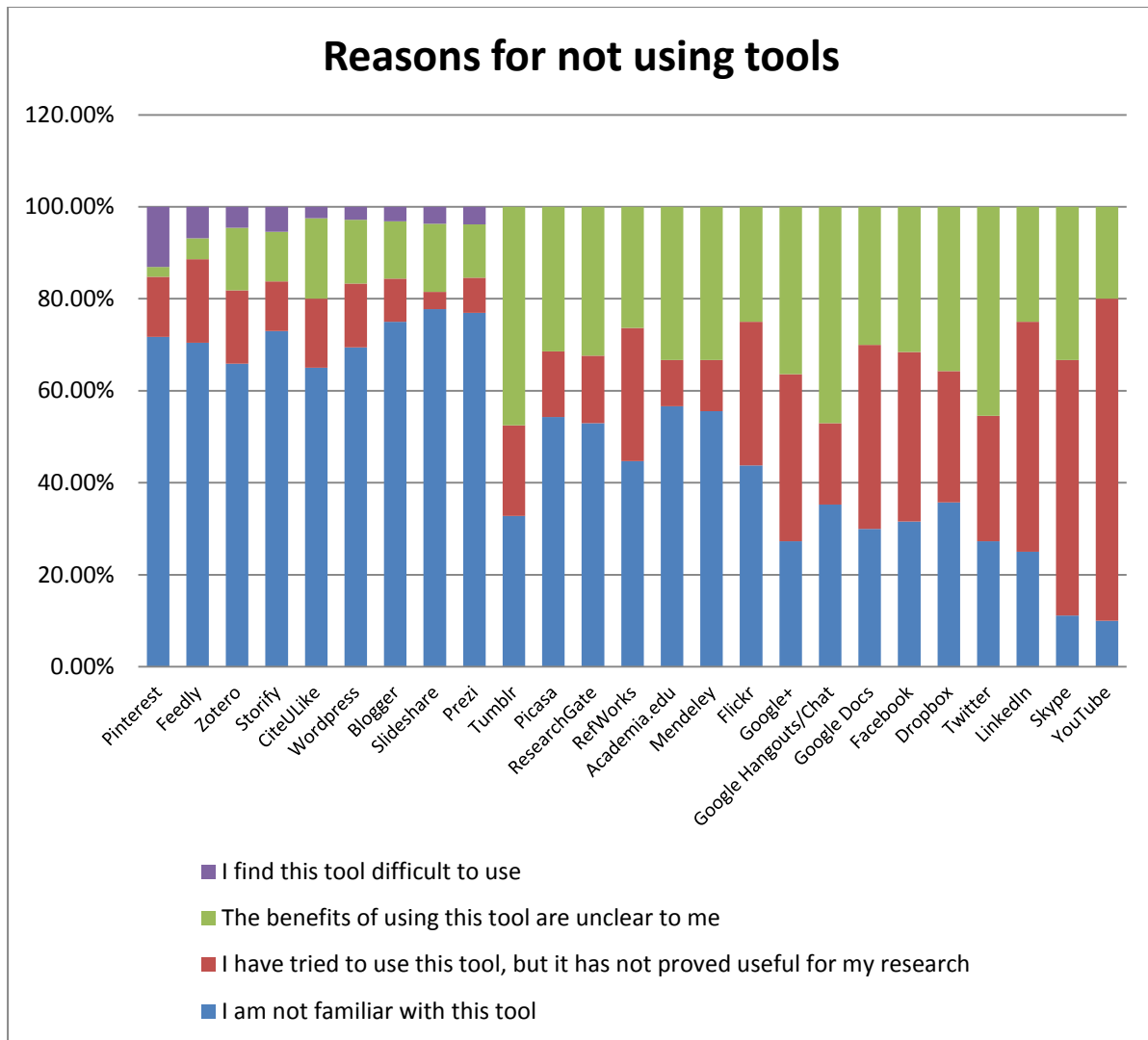


Figure 5 Reasons for not using tools

What can be seen from these results is that researchers are most frequently hindered from using some tools because they are unfamiliar with them or because the benefits of using them are unclear.

Respondents were asked to add any other reasons not included in the list of options that prevented them from using social media for research. Some respondents said they did not have time or the inclination to learn about new tools:

“I am not terribly interested in a number of these tools (e.g. Twitter).”

“I have an information overload already so I've always stayed away from Twitter.”

“In most cases where there are multiple tools for a single purpose, which tool i use depends on exposure to the tool.”

One respondent was unaware of the potential for social media tools to be used during research:

“i didn't think they could be used as research tools.”

4.2.2.3 Reasons for using tools

Respondents were asked to indicate why they used particular tools. Four choices were provided:

- This tool is easy to use.
- I like the immediacy of contact afforded by this tool
- I was encouraged to use this tool by peers or because I am using it as part of a collaborative project
- Using this tool enhances my research profile

Figure 6 illustrates the responses received.

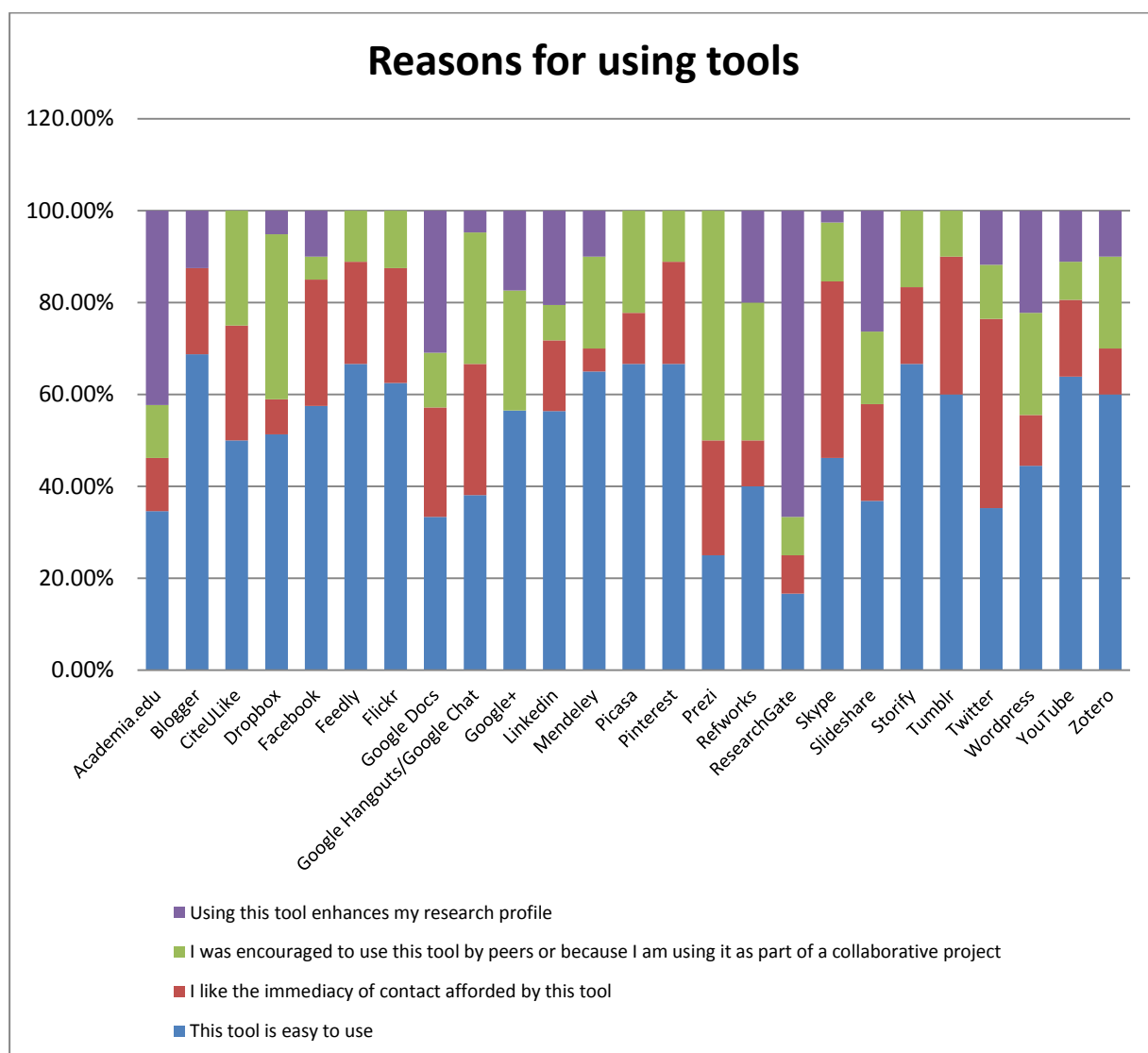


Figure 6 Reasons for using tools

It can be seen from these results that the majority of tools are chosen because they are easy to use. Academia.edu and ResearchGate were seen by a large proportion as tools that enhance one's research profile.

4.2.2.4 Uses of social media for research

Respondents were asked why they use social media during the research process and provided with a list of activities from which to choose.

The most popular activity was the sourcing of information and sources (13% of responses). This was followed by keeping up to date with the literature (11%), and using social media tools to cite publications (8%). Sharing their own or others' publications and reflecting on the literature each made up 7% of responses. Reading blogs made up 6% of responses and reading discussion lists made up 5% of responses. Other uses of social media that made up less than 1% of responses and were added by respondents were that of "accessing and storing information", "getting people to complete my surveys", and using "raw data on Facebook".

Another popular activity was making contact with peers in the field (12% of responses). Using social media tools to connect with people outside of the academy made up 8% of responses and collaborating on research made up 7%. Communicating while at a conference made up 5% of responses.

3% of responses were writing blogs, and 1% contributing to a wiki. Posting on discussion lists made up 2% of responses.

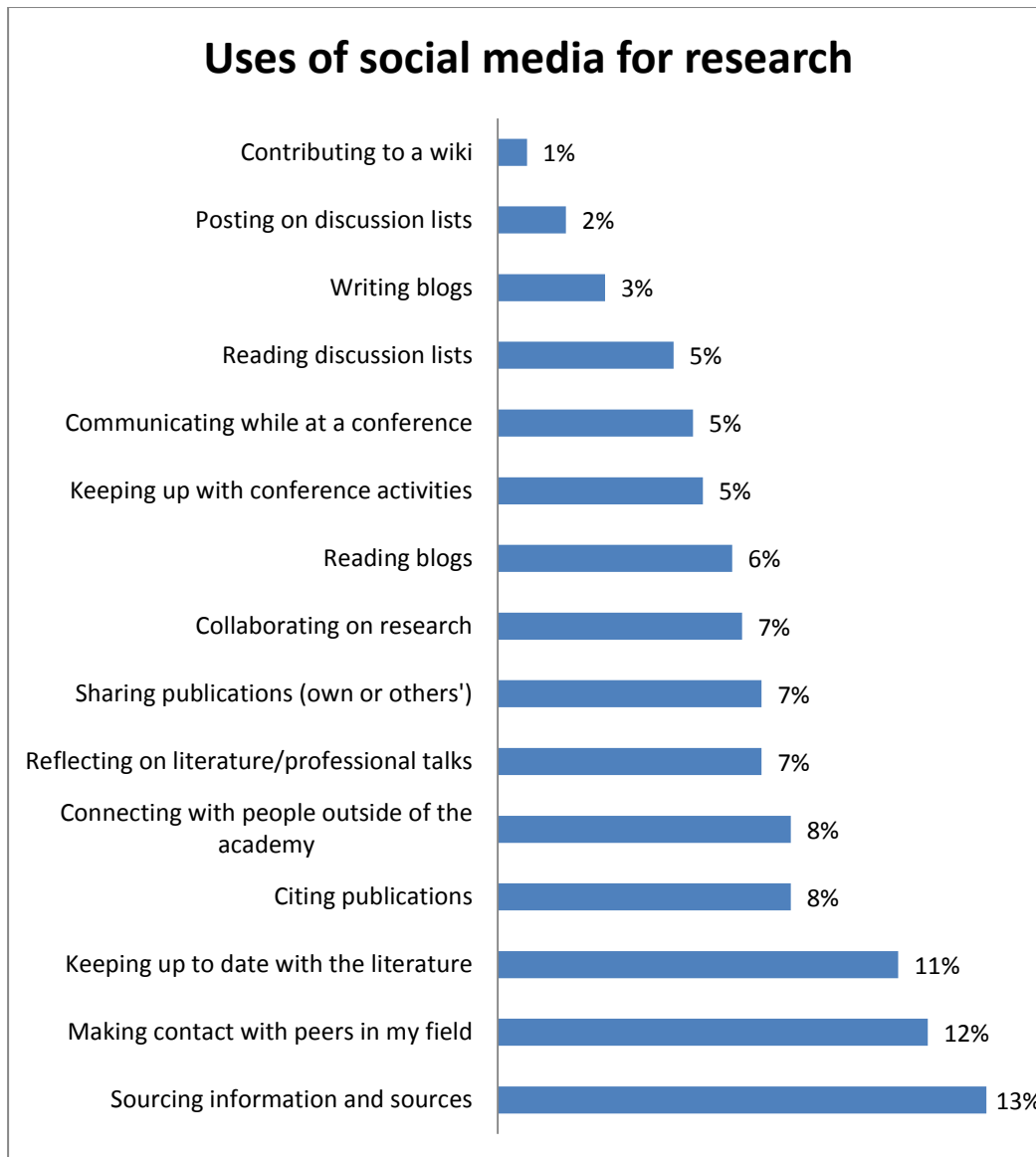


Figure 7 Use of social media for research

4.2.2.5 Scholarship and the research process

As discussed in Chapter 2, scholarship involves the following main components:

- Conceptualisation, involving a research and/or grant proposal, finding collaborative partners, and conducting a literature review.
- Data collection
- Data analysis
- Findings, which involves presenting the research findings in a particular type of research output, such as a journal article, book chapter, or conference proceedings.
- Engagement, which involves teaching

- Translation, which can be linked to Boyer’s component of Application. (Czerniewicz, 2013: 2-3).

These components were employed in the questionnaire to establish how social media was being used by UCT researchers during the research process.

Figure 8 shows how the respondents employ social media during different components of the research process. From the results, it can be seen that data collection is the most popular activity amongst the respondents as it makes up 24% of the responses. Conceptualisation of the research topic was the next most popular choice, with 22% of responses.

The components that were the least popular or involved the least use of social media were data analysis and translation. One may conclude that data analysis is generally not a “social” activity, and that therefore these results would be expected.

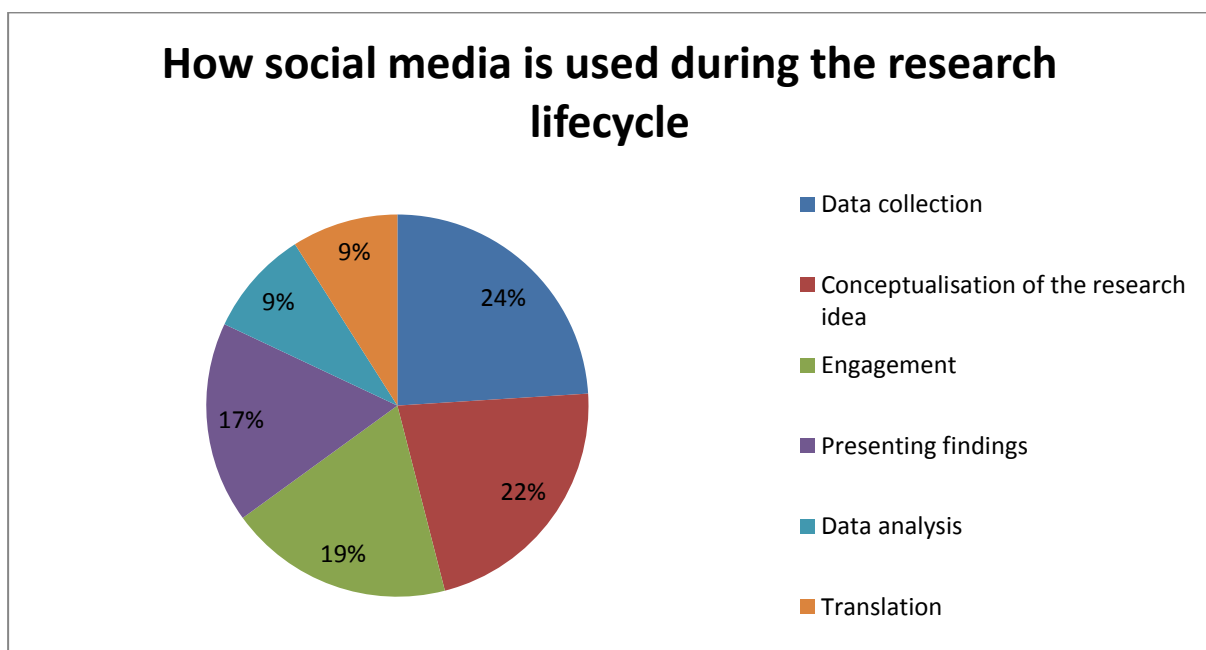


Figure 8 How social media is used during the research lifecycle

4.2.2.6 Drivers of social media usage for research

In order to establish what the drivers of social media usage are amongst UCT researchers, respondents were asked what drives or encourages them to use social media tools during their research. The choices provided were:

- I am comfortable with the technology and find it easy to use.

- Immediacy
- Peers' encouragement
- Career incentives, such as greater recognition or promotion, are linked to the use of social media for research
- Enhancing my research profile
- Reaching a wider audience
- Ability to contact peers outside of my institution
- Research advocacy
- Library support/training
- Other: Please specify

The most common driver for social media usage identified in the literature is encouragement from peers (CIBER, 2010; Gruzd *et al*, 2012; Nandez and Borrego, 2012; Nicholas and Rowlands, 2011; Carpenter *et al*, 2010). The current survey did not confirm these findings. The most popular driver amongst the respondents to this survey was being comfortable with the technology and finding it easy to use (19% of responses). Peers' encouragement was the sixth most popular choice (10% of responses).

Other popular drivers for social media usage were immediacy (17%), reaching a wider audience (15%), enhancing one's research profile (13%), and the ability to contact peers outside of one's institution (13%). Drivers that drew fewer responses were research advocacy (6%), career incentives (5%), and library support and training (2%). Under the "Other" option, one respondent said that social media was: "an easy way to keep up to date with contemporary debates in my broader field".

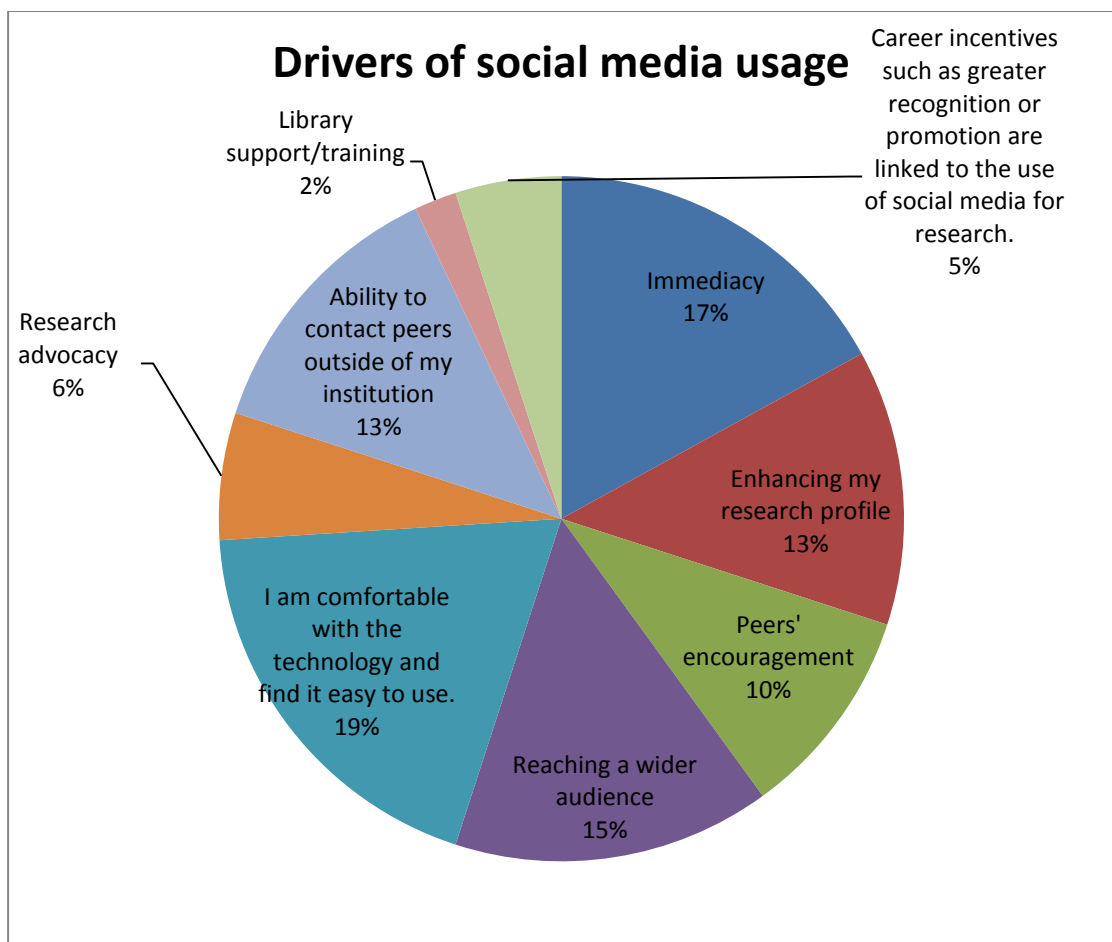


Figure 9 Drivers of social media usage

4.2.2.7 Hindrances to the use of social media for research

Respondents were asked to choose from a list of hindrances to using social media during the research process. Figure 10 shows the results. The most common hindrance, with 27% of responses, was that the benefits of using some tools were unclear. This was also included as an option when respondents were asked why they do not use social media tools for research and it was also found there that this was the most popular option. Another popular hindrance was a lack of time to investigate new tools for use in research, with 21% of responses.

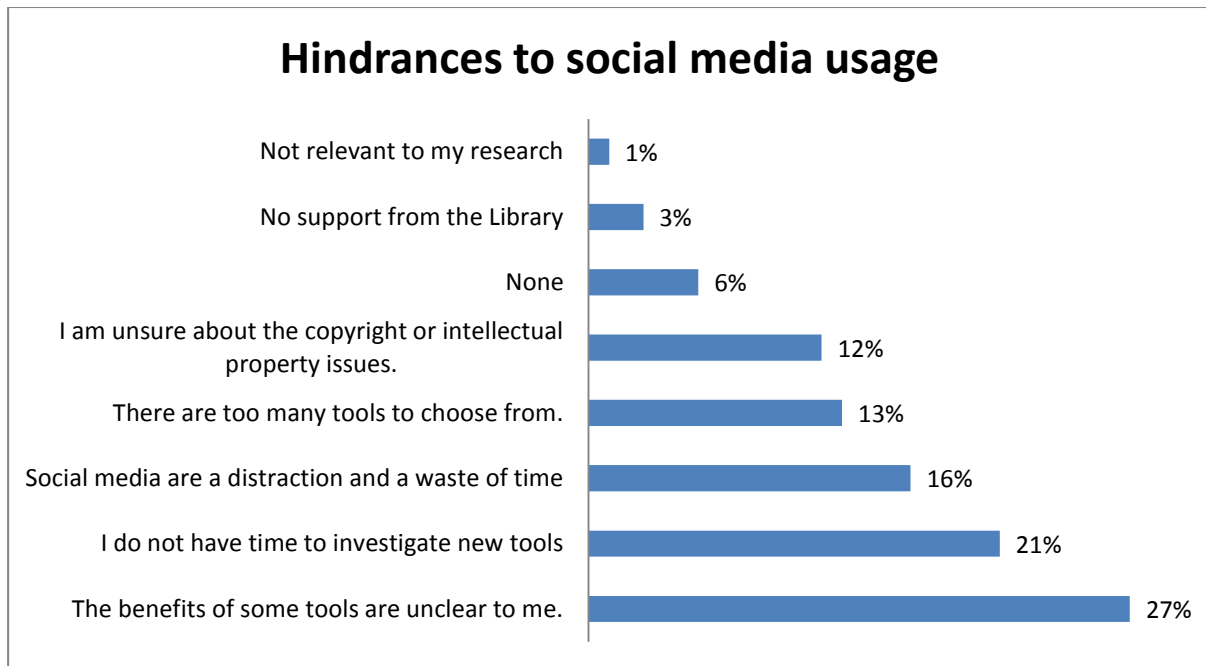


Figure 10 Hindrances to social media usage

Respondents were asked to add hindrances that were not included in the list of choices. The following themes emerged from the responses:

- Lack of knowledge about how to use social media:
“Don’t know how and where to start.”
- A feeling that social media is not relevant to a particular research field:
“I am not aware that social media has anything to contribute towards my research and have therefore not pursued using it.”

“Social media is not a tool i will think of during research unless it’s an integral part of the research”

“Use of social media in my research is not appropriate as my target population does not have access to social media”
- A feeling that social media is not relevant to a particular research design or methodology:
“As someone who doesn't do any primary research (i.e. actually speaking to participants in a research study) I don't see how social media would help the research process at all.”

“My research design and sample does not lend itself easily to social media as a research tool. E.g. I am conducting research in informal settlements where residents do not have

access to the internet. Although they do use whatsapp and I used this to communicate with many (and some use facebook, but I prefer not to have my personal life open to them because this can compromise researcher/participant relationships)”

- A mistrust of the information on social media:

“It is not peer-reviewed”

“Social media can give you some new insight but how can it be validated if the information is correct or not”

“It isn't as reliable as other sources”

“Distrust the information from social media; not peer-reviewed as far as I know”

- A feeling that social media is for personal, not professional use:

“I construe social media as personal or non-work related.”

4.2.3 Libraries and the support of social media for research

4.2.3.1 The library's role in the support of social media usage

Respondents were asked to choose the kind of role they would like the library to play in the support of the use of social media during research. Figure 11 shows the results. It can be seen that the most popular choice was the library promoting and making researchers aware of the various tools that would be useful for research (26%). Less popular choices included research advocacy and redistribution of content (15%), and curation and preservation of information (11%).

One of the response options was that the Library did not have any role to play in the support of social media during research. 8% of respondents were of the opinion that the library did not have a role to play at all in this area. One respondent felt very strongly that social media was not useful to him/her: “I'm not interested in social media – I have a life TALKING to people”.

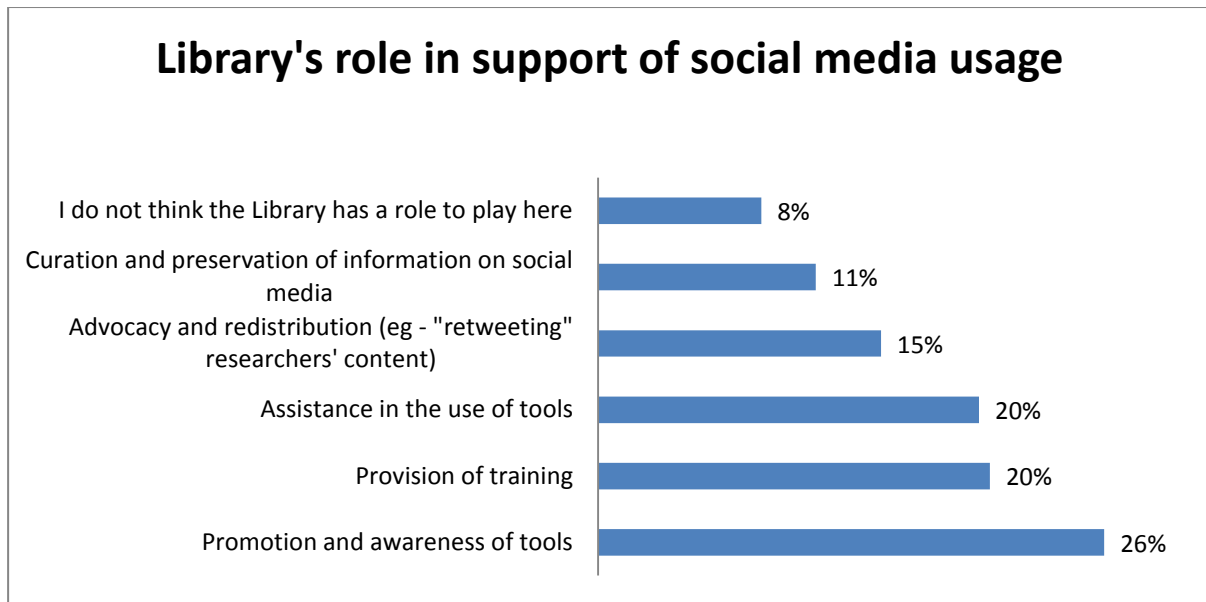


Figure 11 Library's role in the support of social media usage

Respondents were asked to add any other role they thought the library could play in supporting social media usage. Responses included:

“Maintain a list of tools and research groups”

“Maybe showcase what the use of social media could be in research?”

“For those that use social media, I guess the library has a role to play”

4.2.3.2 Altmetrics and Advocacy

In order to gauge whether the library could play a role in the sphere of Altmetrics, respondents were first asked to indicate whether or not they used any Altmetrics tools. Figure 12 shows the results of this question. Only 7% of responses indicated that the respondents had used Altmetrics tools and 56% were that they had not heard of it.

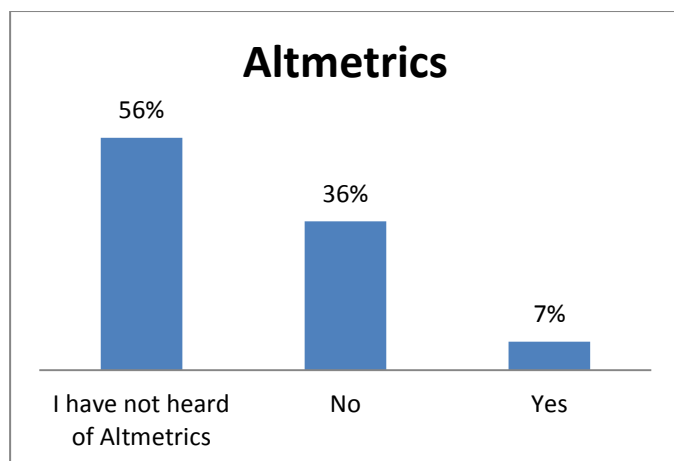


Figure 12 Use of Altmetrics tools

Respondents were then asked whether they would value a service offered by the library in which their research was promoted via social media and monitored via Altmetrics tools. Figure 13 shows these results. 40% of responses were that they would find this service valuable. 8% of responses were that they would not find this service valuable. Responses to the “Other” option were “Not at the moment” and “Maybe”.

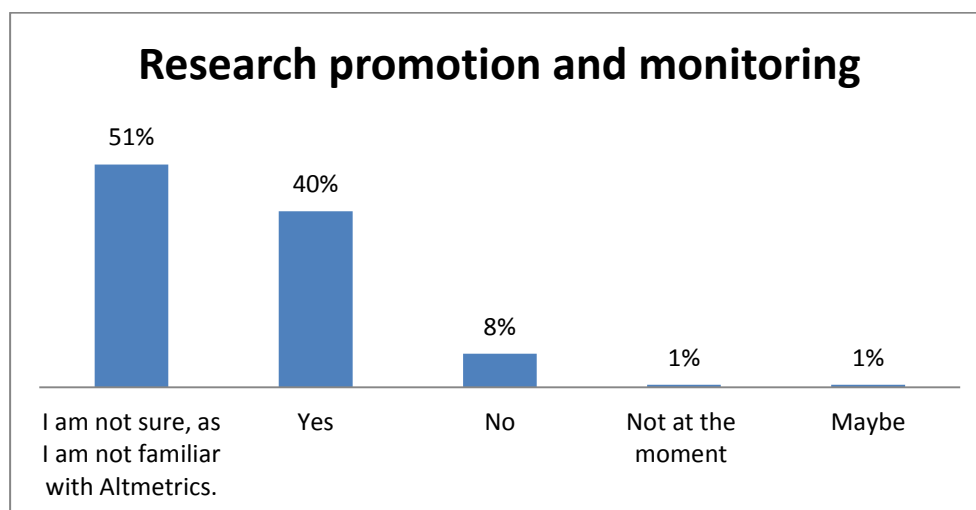


Figure 13 Research promotion and monitoring

4.2.3.3 Reasons the library should not play a role in the support of social media usage

In an open-ended question respondents were asked to provide their own reasons for believing the library had no role to play in supporting social media for research purposes. Table 1 shows the results.

1	As a biological scientist, social media are not valuable as a research tool. Facts are more valuable than opinions and valuable academic contact is better made should journals and direct contact with researchers publishing in your field
2	I am unsure the benefits will be greater than the cost.
3	I answered "no" as a research information gathering tool; the latter role of promoting completed research would indeed be useful in my opinion
4	I do not know if this is relevant to law.
5	I have not given this much thought
6	I regard social media as a menace. This is a purely personal view, but as an economist I am supposed to view society as a rational organism, and social media seem to distort such rationality as might actually exist.
7	In my research, it is peer reviewed papers that are important
8	It is clear that I have little or no appreciation for the role of social media in research, and so having a central repository for content and training is essential.
9	It is good research support by the Library
10	N/a
11	N/A
12	science has an important vetting process that is already being largely eroded by new trends like open access publishing, and social media continues along this path.
13	Social media is not relevant to my research. It maybe to other research, but I am not qualified to answer in this regard.
14	The library holds the expertise.
15	To create awareness and educate staff and student about their credibility for research.

Table 1 Reasons the library should not play a role in supporting social media usage

4.2.4 Social media use: Demographics and discipline

The literature shows that age, gender, and discipline can play a role in determining whether social media is used or not during the research process. One of the findings of the CIBER Report (2010) was that researchers under 35 were more likely to use at least one social media tool for their research. A

clear link between age, gender and social media usage has been found by various authors (Collins and Hide, 2010; Shema *et al*, 2012). In addition, a link between gender, discipline and social media usage has been demonstrated (Shema *et al*, 2012: 7; Bakhshi, 2013).

To test these findings, cross-tabulation was applied to the age, gender and Faculty data and the question of whether social media was used for research.

a. Age

Cross-tabulation was applied to the age data and the question of whether social media was used for research. Figure 14 breaks down social media usage during the research process by age range.

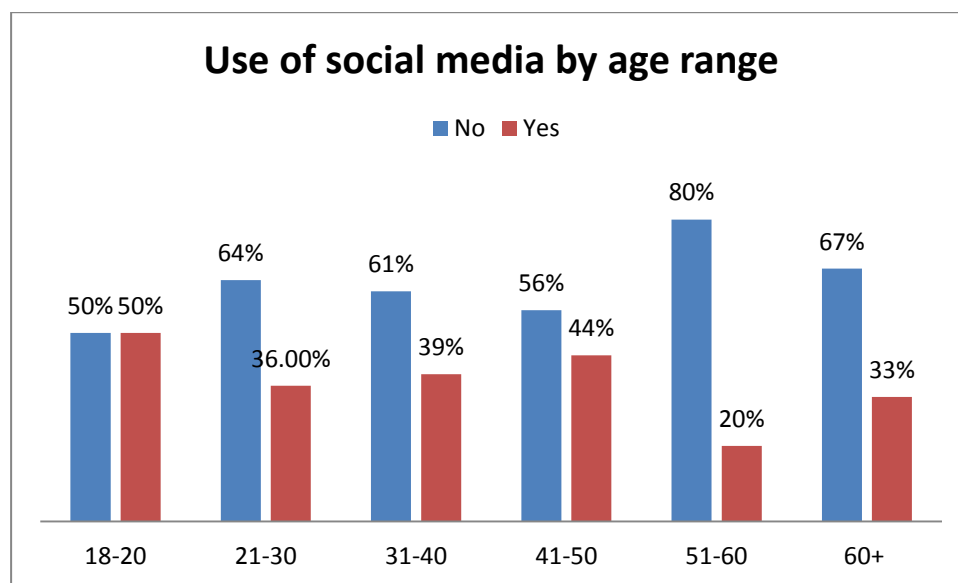


Figure 14 Use of social media by age range

From these results, it can be seen that social media usage is equally distributed in the 18-20 age range. A greater percentage of respondents in the 41-50 age range reported that they used social media for research than those in the other age ranges and a greater percentage of respondents in the 51-60 age category reported that they did not use social media for research than in the other age ranges.

b. Gender

Figure 15 shows the breakdown by percentage of male and female responses to the question of whether they use social media during the research process. The figures indicate that there was only a marginal difference in responses according to gender. 62% of females and 64% of males who responded stated that they did not use social media for research. 38% of females and 36% of males who responded stated that they use social media for research:

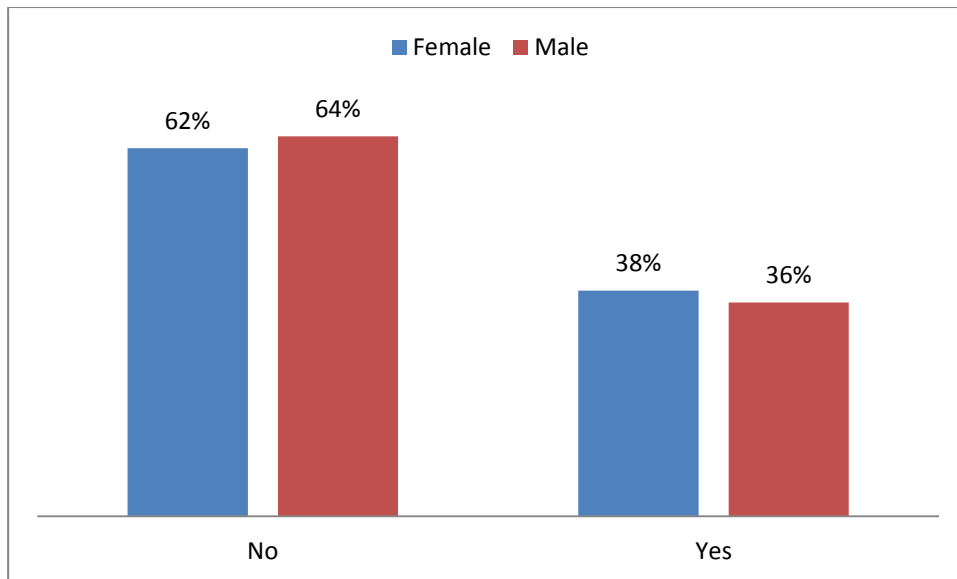


Figure 15 Use of social media for research by gender: percentages

c. Faculty

Figure 16 shows the proportion of males and females in each Faculty who indicated that they use social media during the research process. These figures demonstrate that in most Faculties, more females than males indicated that they use social media, with the exception of the Faculty of Engineering and the Built Environment (EBE).

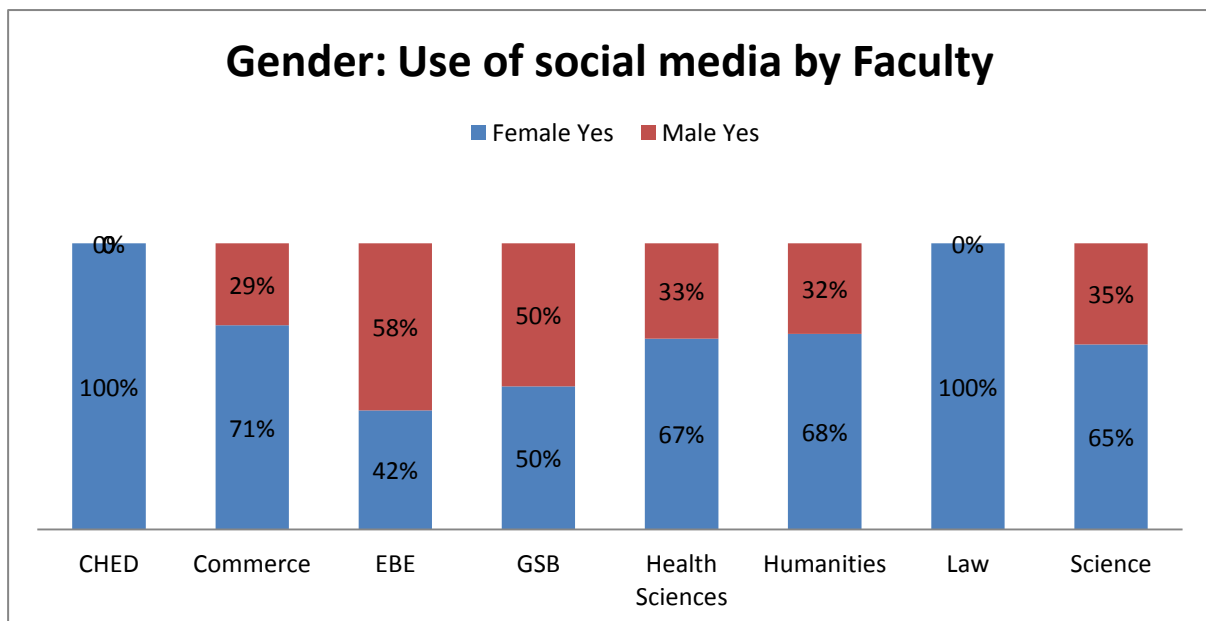


Figure 16 Gender: social media use by Faculty

4.3 The interviews

Respondents to the questionnaire were requested to provide their contact details if they wished to be interviewed. The aim of the interviews was to gain greater insight into the issue of social media usage amongst UCT researchers. 18 questionnaire respondents volunteered to be interviewed. Of these, seven were ultimately interviewed. Some were uncontactable, while others were unable to commit to an interview because of their busy schedules. In spite of the low number of interviews, it was fortunate that five out of the eight faculties were represented, and that a mix of postgraduate students and academic staff, along with a range of age groups were represented.

Different interview schedules were applied with those who said that they used social media during the research process and with those who said they did not. What follows is a presentation of the responses received from these two groups.

4.3.1 Interviews with those who said they do not use social media during the research process

It emerged during interviews with this group that two of the four interviewees had misinterpreted the term “social media”. One interviewee uses ResearchGate and LinkedIn during the research process, while another uses LinkedIn. Neither respondent had viewed these as social media tools and only when they were interviewed did they realise that they were, in fact using social media tools during the research process.

4.3.1.1 Personal social media usage

Interviewees were asked whether the use of social media in their personal capacity fits naturally into their routine or whether it was something that they had to find time to do. One interviewee said that it was something extra for which they had to find the time. Three interviewees saw social media as destructive in some way: they saw it as a “waste of time”, “an irritation”, and “disruptive”, that one got “sucked into it” and that it encouraged procrastination. One interviewee had chosen not to use social media at all.

In order to find out whether technology played a role in preventing this group from using social media during research, interviewees were asked whether they found the tools intuitive or if they struggled to become familiar with them. Three interviewees said that they did not find social media tools in general difficult to work with. This question was not relevant to one interviewee, who had chosen not to use social media at all.

4.3.1.2 Drivers of social media usage

Interviewees were asked whether there were any factors that would drive them to use social media.

The following options were presented by the interviewer:

- Ease of use/technology
- Immediacy
- Peers' encouragement
- Ability to contact peers outside of your institution
- Enhancing your research profile
- Anything else

The responses showed that none of these prompts could be seen as significant drivers of social media usage. Ease of use and technology was evenly split between the interviewees. Immediacy was not seen as something that would encourage social media usage by the interviewees. Two interviewees said that they used table of contents alert systems, and therefore they had no reason to use social media for this purpose. One said that it would possibly be a driver, while another said that, while this would be the biggest driver, social media “doesn't produce tangible results when it comes to research”.

Peers' encouragement or word of mouth was also not seen as a significant driver of social media usage. Only one interviewee said that it would “definitely” change their opinion of social media usage: “If other people are using it, it's easier...”. Another said that the circumstances of the project would determine whether this would be a driver of social media usage. Two interviewees were not convinced of this factor as a driver. One said that it would not be a driver at all, since meeting face to face would be preferable to communicating via Facebook.

Only one interviewee thought that the ability to contact peers would be an encouragement to use social media during research. One interviewee said that social media was not necessary, since contacting authors through the contact details on academic papers was as convenient, while another said that there would have to be substantial benefits to using social media for this purpose. One interviewee said that this factor would not be a driver at all.

Enhancing one's research profile was seen as a possible driver for social media usage amongst the interviewees. However, two of them said that they would only use ResearchGate or LinkedIn for this purpose, and not mainstream tools such as Facebook or Twitter. “I don't want my social persona to be conflated with my professional persona,” said one interviewee, while another said, “I created a

LinkedIn account recently so I think I would use that because I think that's a much more professional platform on which to advertise such things rather than, say, Facebook or Twitter."

When asked if there were any other factors that would encourage the use of social media during the research process, one interviewee said that she would follow professors in her field if they were on social media. Another said that the only factor that would encourage the use of social media would be if he were doing research on social media itself. One respondent did not feel that there were any other factors that would encourage the use of social media, while another said that she knew everyone in her field, and that therefore, it was not necessary for her to use social media.

4.3.1.3 Libraries and the use of social media

Three of the interviewees felt that the library should promote and make researchers aware of tools via social media, email, the library website, and the online learning management system, Vula. One interviewee felt it would be useful "if the library had a list of things and promoted them and said 'these are the functionalities'".

Redistribution of research was seen by two interviewees as a valuable role for the library to play, but both had difficulty envisioning exactly how this would happen. There was also concern about "spamming" researchers, or information overload. One interviewee suggested an annual PDF list of prominent tweets or social media content, separated into categories by topic or field. One interviewee said that training would be a valuable role for the library to play.

Two interviewees said that preservation and curation of content would be useful, although one said that, given the amount of social media content created on a daily basis, the library would have to be selective about what it preserved.

One interviewee felt very strongly that the library had no role to play in this area:

"I don't really see what the library could do in terms of actually facilitating any use of social media. I don't see any reason for the library to devote time, effort and resources. Part of me feels a little but cynical about faffing around social media when the things that we actually do need to do our work are not being addressed."

4.3.1.4 Feelings about social media and research

Interviewees were asked whether they had any objections to social media in general. The concept of distraction was mentioned again by one interviewee. Concerns were raised over intellectual property issues, which were felt by one interviewee to be too vague: "...people share stuff or change it and no

one seems to really care where it came from or whose property it really is... ". Another felt that it had no benefit in research, and should just be used socially "to communicate with peers".

Interviewees were asked to reveal their thoughts about social media and research and to say whether they thought the two belong together at all. It was felt by three out of four interviewees that social media had a place in research. One interviewee said it "definitely" has a place, while another said it was inevitable that social media would be used during research. The interviewee who said it definitely had a place felt that it was convenient for keeping in touch with peers, but was concerned about the legitimacy of information found on social media: "...you also have to weigh up the fact that these are people's opinions". The interviewee who said it was inevitable that social media would be used during the research process said that networking was already a part of academia, and that therefore, social media had a place in it "because you need to collaborate with people".

4.3.2 Interviews with those who said they use social media during the research process

Questions asked during these interviews can be divided into four categories:

- Use of social media
- Social media and research
- Social media and impact
- Library support

4.3.2.1 Use of social media

Interviewees were asked what led them to use social media for research. For one interviewee, use of social media for the purposes of research had evolved, because she was using social media "for social purposes": "I would email academics with questions and then...because we shared interests...it would go over to Facebook. So if you see anything interesting, you tag them."

For two interviewees, social media was turned to out of necessity because it was necessary in their field of study. For one, social media was a way of ensuring that her research was disseminated and shared with the public at large, while another was using it to contact participants for studies and to share feedback with them.

Interviewees were asked whether their social media usage had become part of their daily, weekly, or monthly routine. All interviewees said it had become part of their daily routine, although they

generally used it when they needed it. “If ResearchGate sends an alert, I’ll look at it immediately,” said one interviewee. “I mostly use it when I need it, sometimes multiple times a day.”

In answer to the question of whether social media usage was something that fits naturally into their existing workflow, or whether they had to find time to use it, interviewees were all in agreement that social media fits naturally into their workflow. “It’s just another way that I can get information,” said one. Another said it was “fundamental” to the research they were doing. One interviewee said that, while it fits naturally into the flow of recruiting participants to studies, when it came to writing or reading articles, it was not necessary, and therefore something extra.

Responses differed to the question of whether interviewees used “mainstream” or “custom-made” tools. The term “mainstream” is used to refer to social media tools that were developed for use by anyone, whether engaged in academia or not, such as Facebook and Twitter. “Custom-made” refers to social media tools that were developed specifically for use by researchers and those engaged in academia, such as ResearchGate and Academia.edu.

One interviewee said she preferred mainstream tools because “my life doesn’t have a clear work/play divide”. She also felt that she cannot easily share material on ResearchGate and Academia.edu with those who are not in academia. Another said that she liked to use a combination of both mainstream and custom-made tools, while the third said that she preferred using custom-made tools:

“What I like about that is it seems more professional than Twitter or Facebook. The other reason why I prefer using those is that if I go onto Facebook or Twitter, I get distracted by other things and then I end up doing personal things instead of just doing work.”

Huwe (2011), Lippincott (2008), and Pearce (2010) suggest that creating profiles of social media users assists libraries to develop customised training programmes. Interviewees were therefore asked whether they were readers or participators on social media. Two interviewees said that they preferred to read rather than create posts, while the third said that she did both.

4.3.2.2 Social media and research

Interviewees were asked whether they had any reservations about the use of social media. Three suggestions were provided:

- Information technology issues
- Control of information
- Blurring of personal and professional boundaries

One interviewee said she had few reservations except that she felt she was less spontaneous with her social media communication than she was when she started using it and that she would now, for example, create a draft of a blog post before publishing it.

The blurring of personal and professional boundaries was a concern for another interviewee:

“For me, Twitter is either work or private and I would have another Twitter handle for private matters. I don’t think one should blur them at all.”

The third said that she had reservations about control of information and the blurring of personal and professional boundaries. Regarding control of information, she said,

“We have videoed interviews with people, which is obviously sensitive data because it’s private questions about their lives. So we’re quite hesitant about where we put those things. It has to be stored somewhere where it can be safeguarded and where we can easily share it with other researchers, but at the same time we don’t want it hacked.”

Her concerns about personal and professional boundaries involved Facebook and Twitter:

“Facebook is one area where there’s a blurring between professional and personal boundaries, so I’m friends with people on Facebook who are colleagues or participants through recruitment. Obviously most of what I post on Facebook is personal rather than academic and so I also have to keep in mind who is seeing this and that’s one of the reasons I don’t use Twitter so much – for the same reason because it’s blurring of personal and professional boundaries. I prefer to keep it for professional communication. I don’t really Tweet about personal things because it’s from the same user.”

A further concern she expressed involved the kind of information she posted on social media and the protection of her professional image.

Interviewees were asked whether they agreed with the following statement: “Collaboration, conversation, and interdisciplinarity are already part of the research process, so some see the affordances of social media as an extension of an already open process.” All interviewees agreed with the statement. One interviewee focussed on interdisciplinarity and collaboration in their response, while another focussed on openness. One hoped that social media would encourage interdisciplinarity, while another felt that social media had increased collaboration in their field.

The interviewee who focussed on openness said that this attitude of openness was “person-centred”: “I can say I like the work of Maria and I can follow all of her work instead of just following

the journals and getting journal alerts.” She felt that traditional scholarship methods were impersonal:

“You engage with the journal, you don’t engage with the person. And then if you want to engage with them that’s another process. What are you going to use? Email. You’re not going to go through the journal. So I think it’s false to think it’s an open, easy process. I think technology has moved way beyond what the traditional research media are.”

Interviewees were asked whether they thought social media was taking scholarship in a different direction. All interviewees agreed that it was and all felt that this was related to the way knowledge was being shared:

“Especially with ... open access, because you just share things and share links. It’s definitely changing the way we research and the way that we share that research.”

“For instance, blogging,” said another. “It’s a completely different output to traditional research. Look at Pierre de Vos’s *Constitutionally Speaking*, for example... It’s used as a resource by media houses, by other academics, by people allied to anything to do with what’s constitutional and what’s not, to influence public opinion. Society doesn’t read academic journals. So I think it is taking it in a very different direction”.

“I think there’s an emphasis on making scholarship applicable and easy for other people to access. Because you can write journal articles and so on, but it’s not really accessible for the public. Whereas if you have a website, for example, you can’t put the information up there in the same way.”

Interviewees were asked whether they believed social media was a fad or whether they thought it represented a fundamental shift in scholarly communication. All interviewees agreed that it represented a fundamental shift:

“Definitely a fundamental shift. I guess the best way to visualise that is to see how younger and older researchers use it. And with older there’s some guys who have really excellent blogs and who really know how to use social media so it’s not just an age thing.”

“It’s a shift, it’s not a fad. A fad implies, ok we’re going to take up the yo-yo this year and then next year we’re going to have the dingbat and the year after we’re going to be playing marbles. It’s not of that nature. It’s far more endemic to everything we do – to the way we communicate nowadays.”

“It’s very different from the more academic ways of getting information out there. And I think because it’s so different, it’s really targeting a different group of people. Academics want to read what they’re interested in. I think it will stay because it’s filling a gap.”

Interviewees were asked what benefits they had derived from using social media for research. Immediacy and speed, knowledge sharing, and communicating with different audiences were benefits that were mentioned. “It just makes things happen quicker,” said one, referring to serendipitous links that occur between her and other researchers or friends who are interested in her research. Another mentioned the benefit of sharing her research with various audiences and getting recognition from peers:

“Knowing that there are alternatives to failing at the traditional methods. If one consistently fails at traditional methods you can get a bit downhearted. But if you find success in other methods – even though they might not be recognised by UCT and NRF, at least you’ve got peer recognition.”

Interviewees were asked whether social media allowed them to do anything that traditional scholarship did not. Again, sharing research quickly, “getting little soundbites out” to various audiences, immediacy, and reaching research participants freely and quickly were mentioned as affordances not offered by traditional scholarship activities.

4.3.2.3 Social media and impact

Shema *et al* (2012: 1) write that blogs allow “informal post publication peer-review”. Interviewees were asked whether they had experience with this phenomenon. Two of the three interviewees had experienced it:

“Yes, to a certain extent. Most of the time, people just go ‘this is awesome’ and I’d really like them to be more critical. But getting feedback is great. Your ideas get formed so much better and in a faster timeframe. You get people commenting after work, so by the next week you have an infinitely better article already. But if I blog something, maybe it takes me a week to get it into the right words. It’s on the blog, and by the evening I have comments already,”

Another interviewee said that she regularly requested critique from colleagues:

“Yes, certainly through emails and so on – I mean I ask people to do that before I send something to be published. I might ask people in the know to look at this paper – am I missing the point and so on.

The peer review process is a grilling process, so you want to try to get everything tidied up before you send your submission in.”

The interviewee who had not experienced this thought it was probably because she did not blog enough for it to have happened.

Based on the question posed in the questionnaire about Altmetrics, interviewees were asked whether they thought the existence of Altmetrics indicated the beginning of a change in the peer review process and whether they thought it was a valid form of assessment. Two out of three interviewees felt that it was the beginning of a change in the peer review process and that it was a valid form of assessment. One interviewee felt that Almetrics needed time to develop to become an alternative to traditional peer review, while the other felt that it was a valid form of assessment, but it should not replace traditional peer review:

“It’s not *the* valid form. It’s *a* valid form. The peer review system as it stands is not without flaw. So if one can combine the best of a bad lot, maybe you get a better idea of what’s good and what’s bad. If you’ve got different ways of measuring things, it’s better than having one way of measuring things which might be very faulty. If you can plug those gaps with other methods, that may also have their own faults... But I think what you have is a better mix. I don’t think one should move to Altmetrics entirely without the traditional methods, but I think the traditional methods are going to become less and less relevant to be honest. People want what’s relevant in life. Real living – not some edifice of a previous culture which is the academic space.”

The interviewee who could not comment on these statements said that she had not encountered or considered Altmetrics before.

4.3.2.4 Library support

Interviewees were asked to elaborate on their responses to the question in the questionnaire in which they were asked to list the kind of library support they would expect in this sphere. Two interviewees said that training courses in how to use social media tools would be valuable. One said that she would not need this, but that it would be valuable for beginner social media users. Another suggested different levels of training: basic for beginners, intermediate courses that covered how to use the tools more efficiently, and advanced courses for those who were at that stage.

Regarding how they would like to be made aware of training and tools, all interviewees agreed that email would be preferable. One interviewee felt that posting an advertisement on social media was

problematic, because it assumed that researchers were already using social media. Another suggested an email group, so as to reach interested researchers.

Two interviewees felt that redistribution of social media posts by researchers would be valuable. There was, however, doubt about the usefulness of sending out tweets or messages about all the research happening at the University, since this would result in information overload. A suggestion was offered to create separate social media accounts for different fields, so as to reach specific audiences.

Two interviewees felt that curation and preservation of their social media content would be valuable. One suggested a PDF with links to posts created over a specified period. This interviewee also doubted the value of preserving all social media content: “We have to come to terms with the fact that social media is transient,” she said. Another felt that preservation should be selective: “There would have to be a very meaningful Twitter exchange for it to be archived. Why would the library duplicate existing archives?”

Conclusion

This chapter has presented an analysis of data gathered via an online questionnaire and interviews with volunteer respondents. Insight was provided into the extent of social media usage by respondents according to age, gender, Faculty, and academic position. Responses to questions about why and how the studied population uses social media, why they choose not to use social media, and the drivers, hindrances to social media usage were analysed, and how UCT libraries can support this activity were analysed.

In Chapter 5, the data will be interpreted and conclusions will be drawn.

Chapter 5: Interpretation and Conclusion

5.1 Introduction

The primary research question for this study was “How can the University of Cape Town libraries support the scholarly use of social media by researchers?” The research sub-questions were:

- Which social media tools are used by researchers at UCT for their research?
- Are these tools used for the creation of research, collaboration in research and dissemination of research and if so, how?
- What, if anything, hinders researchers from using social media for their research?
- What are researchers’ expectations of the Library in terms of support for the use of social media?

Data collected via the questionnaires and interviews sought to answer the primary research question as well as the sub-questions presented in this study.

This chapter presents an interpretation of this data under the headings of the sub-questions in an attempt to answer the primary research question and then suggests strategies that UCT Libraries’ staff can employ to support the use of social media by researchers.

5.2 Summary of research findings

Reasons for the low response rate to this study were provided in Chapter 3. It is submitted that the poor response rate could also be attributed to a lack of understanding of the potential of social media usage for research amongst UCT researchers. There might therefore have been a feeling amongst those who were targeted as participants that the survey was not relevant to them.

The following interpretation, therefore, relates only to respondents to the study and not to all UCT academics.

5.2.1 Are social media tools used by researchers at UCT for their research?

A large percentage of respondents said that they used social media in their personal capacity. A relatively small percentage of respondents said that they use social media during their research. An examination of the responses to why social media is not being used revealed that the majority of the

respondents did not know how to begin using social media for their research, and were unaware of its potential for use during their research.

As discussed in Chapter 2, there is a link between social media usage and demographics, such as age and gender, as well as the researcher's discipline (Ruleman, 2012; Brown, 2009; Shema *et al*, 2012). This study found that, amongst respondents to the questionnaire, those in the 18-20 year age range were most likely to use social media, while those in the 51-60 year age range were the least likely to use it. More females than males used social media across the Faculties.

5.2.2 What are the tools used for?

As discussed in Chapter 2, the research process comprises various stages: conceptualisation of the research theme, data collection, data analysis, presenting the findings, engagement, and translation (Czerniewicz, 2013: 2). This study found that respondents were less likely to use social media to analyse their data and more likely to use it to collect their data, conceptualise their research, engage with others, and present their findings. This can be attributed to the fact that data analysis is generally a solitary activity, and therefore does not lend itself to social media usage.

That Translation emerged as an activity for which not many respondents used social media could be attributed to the fact that the questionnaire did not clarify what this component entailed. It is therefore assumed that some respondents would have skipped this component due to a lack of understanding of the concept.

Various tools are being used by the respondents for collaborating on research and writing collaboratively, social networking and sharing of content, image and video sharing, managing references, sharing presentations, bookmarking and tagging, RSS feeds, and content curation. It emerged that most tools were used by respondents because they were easy to use and that Academia.edu and ResearchGate stood out as tools that many respondents felt enhanced their research profile. Most respondents were using social media tools to gather data, conceptualise their research idea, engage with others, and to present their findings.

That blogging software such as Wordpress and Blogger were chosen by respondents as tools for collaborating on research and writing collaboratively is an indication that respondents are using blogging as a way of connecting via social media during their research.

A national study found that Facebook had the second largest active user base in South Africa in 2015, with 11.8 million users, and YouTube followed with 7.2 million users. (World Wide Worx, 2015). The

current study found that these tools were also popular amongst UCT researchers who were using them for social networking/sharing of content and image and video sharing.

This questionnaire question relates to the interview question about whether researchers prefer to use mainstream or custom-made tools. There was no clear-cut answer to the question of whether respondents use custom-made or mainstream tools, but a factor was an unwillingness to blur professional and personal boundaries. Custom-made tools were felt by some, therefore, to be for professional activities, while mainstream tools were perceived to be for personal activities.

The question about which tools were used for social bookmarking and for tagging garnered very few responses, some of which were “none”. This can be attributed either to the possibility that the concept was not properly understood by respondents, or that it is not a popular research activity. Other unpopular activities, given their low response rates, were following RSS feeds and content curation. The fact that RSS feeds were unpopular amongst respondents could be attributed to the elimination of RSS feeds from a number of leading sites, such as Google Reader, Twitter and Firefox in recent years (McDowell, 2015)

5.2.3 What, if anything, hinders researchers from using social media for their research?

In addition to what has been discussed in the analysis in Chapter 4, what emerged from the questionnaire responses and which was confirmed by the interviews was that respondents are opposed to using social media for research for a number of reasons. The literature shows that researchers experience various hindrances to using social media. These include scepticism about their value (Weller, 2012), the fact that some researchers view them as a distraction or a waste of time (Minocha and Petres, 2012), a lack of trust in the reliability of information on social media (Jones & Cope, 2011), a dearth of custom-made tools for researchers (Brydon, 2010), and a lack of infrastructure (London School of Economics, 2012).

One of the more popular responses to this study was that respondents saw social media as a distraction and a waste of time. This was confirmed in numerous responses in the interviews with those who said they do not use it during their research and one interviewee from the group who said they use social media during their research said that mainstream tools tended to distract her from her work.

This study found that a common hindrance amongst respondents was that there are too many tools to choose from. Respondents reported that they did not have time to investigate and experiment with all the tools to establish whether they would be useful during their research. A consequence of

this was that many respondents reported that they felt that it was unclear what the benefits of using some tools would be.

Respondents provided various responses to an open-ended question in which they were asked why they felt the library had no role to play in the support of social media and these are relevant to the topic of researchers' reservations towards social media. Themes that emerged were that social media is not useful for research in particular fields, and the cost of using social media would be greater than the benefits. A further objection was a feeling that the information gleaned via social media was not reliable, as some raised the issue of peer review.

5.2.4 What are the drivers of social media usage?

In conjunction with understanding the hindrances to social media usage, knowing what drives researchers to use the tools will also assist the library in focussing its efforts to support its usage.

This study found that the most common driver of social media usage amongst questionnaire respondents was ease of use. Respondents were more likely to use tools if the technology was not a barrier to its use and it was user-friendly.

Other popular drivers fell into the category of communicating with other researchers and with the general public. Respondents used social media because it enabled them to make rapid and immediate contact with others ("immediacy"), they were able to reach a wider audience, it enhanced their research profile, and it enabled them to contact peers outside of their institution.

The interviews revealed that librarians have a challenging task ahead of them when encouraging UCT researchers to use social media. Those who said that they did not use social media felt strongly that there was little that would drive them to use it. Interviewees' responses to the question of what led them to use social media for research are also applicable here. Unlike respondents to the questionnaire, interviewees who reported that they did not use social media for research felt that other tools, such as table of contents alert systems, face-to-face meetings, and email served their purposes for communicating with other researchers and for keeping up to date with the literature.

One of the less popular drivers was library support. This could be attributed to the fact that the library currently provides no support for social media usage amongst researchers and therefore that researchers had little or no experience of it. Some of the responses to the open-ended option in this question verified these findings, as they included reference to a lack of information about how

particular tools would be useful for research. This finding should persuade the library to adopt a leading role in this sphere.

For both groups of respondents – those who said they use social media for research and those who said they didn't, for questionnaire respondents as well as interviewees – a factor in using social media for research was initially using it for personal purposes: those who were already using it were easily able to transition to using it for their research. Familiarity with the tools and how they work, then, would be a factor in using social media for research. By contrast, interviewees who do not use social media for research said that it did not fit naturally into their day, even for personal purposes, and that it was disruptive.

5.2.5 What are researchers' expectations of the Library in terms of support for the use of social media?

As discussed above, respondents did not feel that library support would be an encouragement to use social media during research. For the library to play a role in this sphere, therefore, it has to overcome the challenge of this perception.

In spite of this finding, however, the responses to both the questionnaires and the interview questions regarding the library's role in supporting social media usage showed that respondents were most inclined to want the library to provide training in and promotion of tools. A large proportion wanted the library to provide support in the form of Altmetrics training. Although curation and redistribution of research on social media were less popular options, the interviews revealed that this might have been because respondents were unsure of how this might be executed. Concerns were raised about the amount of information available via social media, and respondents were doubtful about the usefulness of redistributing or curating everything that researchers created via social media.

5.3 Strategies for UCT Libraries to support the use of social media by researchers

5.3.1 Introduction

Having interpreted the findings of the answers to the research sub-questions, this section addresses the primary research question of this study: “How can the University of Cape Town libraries support the scholarly use of social media by researchers?” by presenting strategies that UCT Libraries can employ to support social media usage by its researchers.

5.3.2 Understand the types of social media users and how they use social media for research

In order to adequately support social media usage amongst UCT researchers, the library needs to understand its users – their demographic profile, where they work, what their academic status is, and what kind of social media users they are. This will assist the library in customising training and information sessions about social media tools for specific groups of people.

5.3.3 Become familiar with social media and Altmetrics tools

Effectively supporting researchers’ social media usage requires familiarity with current social media tools and their potential uses during the research process. Librarians should be encouraged to investigate new tools, examine their potential for application during the research process, attend relevant training courses, and form communities of practice that exchange information on this topic.

From the literature, it was established that knowledge of Altmetrics tools “strengthens the librarian’s educational role” as the librarian plays a role in helping researchers understand and manipulate the impact of their research output (Sutton, 2014: 5). Altmetrics tools can be used in conjunction with social media tools to monitor the impact of scholarly social media posts.

The majority of the respondents to this study were not familiar with Altmetrics and had not used it. Librarians should therefore ensure that they are familiar with the concept of Altmetrics, as well as the debates around impact measurement in general. Training and information sessions held to introduce the concept to researchers would be a strategy to employ to introduce researchers to Altmetrics and assist them to use it.

5.3.4 Understand researchers' needs and how they use social media

The questionnaire presented a list of 26 tools from which respondents could choose. Eight additional tools were added in the “other” option to this question by respondents who used them in addition to the tools presented. As these tools represent only some of the available social media tools and since there is an abundance of tools available, it is acknowledged that it would be an onerous task for the library to keep abreast of social media tools and their potential uses. In addition to the proliferation of tools, the technology changes frequently. The library should therefore employ the following strategies in order to effectively support the use of social media by UCT researchers:

1. Conduct regular surveys of UCT researchers, similar to the current study, to determine which tools are commonly used amongst researchers at UCT.
2. Source and study available social media guides for researchers, such as those of Cann *et al* (2011), Minocha and Petres (2012), and Bik and Goldstein (2013). These guides not only list available tools, but also explain how they can be used at each stage of the research process.
3. Employ “emerging technologies librarians”, such as those alluded to by Carlucci-Thomas (2010). These librarians are employed specifically to keep abreast of new technologies that are relevant to and have potential for use within libraries and by library users. An emerging technologies librarian would ensure that the library is aware of new social media tools and their potential for use within the research process.

5.3.5 Understand hindrances to and drivers of social media usage

This study found that hindrances to and reservations about social media use during research sometimes arise as a result of misconceptions. Some respondents, for example, said that they had reservations about using social media because they believed that the information shared via social media was not peer reviewed, or that they were unsure about intellectual property issues. It is necessary for librarians to understand and address these misconceptions, in order to encourage the use of social media amongst UCT researchers.

Similarly, knowing what drives researchers to use social media during their research will assist the library in developing training interventions and information sessions about social media.

5.3.6 Conduct training, consultation, and information sessions on social media and Altmetrics tools

The data regarding hindrances to social media usage provides evidence for the need for the provision of training in or information sessions about particular tools. In addition, librarians have to demonstrate the value of social media to researchers, as researchers are sceptical of them, and fail to appreciate their worth (Weller, 2012).

If, as discussed previously, librarians attend training sessions themselves and develop communities of practice around social media usage amongst researchers, it will ensure that they can proactively introduce new tools to researchers during information or training sessions. It will also ensure that they are prepared when a researcher approaches them for assistance with a particular tool. Sifting through and making sense of which tools would be useful for researchers would address researchers' uncertainty about which tools to use. Training and information sessions could address the lack of clarity about the benefits of using some tools. They would also reassure researchers that social media is not just for personal use, but has a place in research.

5.3.7 Raise awareness about social media tools relevant to researchers

Separate to training and information sessions, this approach was requested by both respondents to the questionnaire and interviewees and would involve the library creating and maintaining lists of social media tools and making these available to researchers. Emails, a web page dedicated to this, and a PDF list were options presented by respondents and interviewees.

5.4 Conclusion

This study found that, amongst respondents, social media is not commonly used for research. Those who do not use the tools have reservations about their usefulness, do not know which tools to choose, and feel that they do not have time to explore the proliferation of tools available. Those who are using the tools, however, are employing them for various purposes during the research process.

Both groups of respondents – ie – those who said they use social media during the research process and those who said they do not use it - would value training and information sessions about how to use social media during the research process. UCT Libraries should therefore take up the challenge to support the use of social media by UCT researchers.

Despite the low response rate to this study, it provides valuable insight into the state of social media usage amongst UCT academics. As the first of its kind in South Africa, it provides a foundation on which further research can be based.

Further study could be conducted on aspects of social media usage in academia that have been highlighted here. These aspects include:

- Perceptions of social media amongst academics: A number of respondents were reluctant to use social media due to a view that it lacked peer review and because they felt that issues around copyright and intellectual property were unclear. These topics could be explored in more depth through interviews and focus groups.
- The use of social media amongst particular demographic groups: This study found that age, gender, and discipline play a role in the adoption of social media amongst respondents. A case study could be conducted that explores these aspects in further depth to find out why particular groups are more prone to use social media than others.
- Interventions by South African academic libraries to support social media: Case studies could be written on steps taken by libraries to support social media amongst their users.

It can be seen from this study that researchers are using social media tools for their research, to gather data, discuss their research, and engage with each other. UCT librarians, therefore, certainly have a role to play in the support of social media usage by researchers.

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Appendices

Appendix A: Questionnaire

UCT researchers and social media

Introduction

Thank you for taking the time to complete this questionnaire. The purpose of my research is to find out whether researchers at UCT use social media during the research process, and if so, how the library can support this activity.

The questionnaire consists of 20 questions. It should take you less than 15 minutes to complete, as most of the questions are closed-ended.

Your response is completely confidential: results are received electronically and in table format. The last question, which asks you to leave your contact details, is entirely voluntary, and required only if you would be willing to be interviewed on this topic.

Thank you.
Janine Dunlop
M.IT candidate: University of Pretoria

1. Age group

(MOTIVATION: One of the findings of the CIBER Report (2010) is that researchers under 35 were more likely to use at least one social media tool, but that the demographic changed when specific tools were examined. I would therefore like to use this question in two ways: to find out whether age plays a role in take-up of social media in research at UCT and, by cross-tabulating this question with question 8, find out whether age is a factor for the take-up of particular tools.)

- 20-30
- 31-40
- 41-50
- 51-60
- 60+

2. Gender

(MOTIVATION: Shema et al (2012) found that men dominated science blogging. I would like to establish whether there is a difference in the way men and women in various disciplines at UCT use social media during the research process.)

- Male
- Female

3. Faculty

- Commerce
- Centre for Higher Education Development (CHED)
- Engineering & the Built Environment (EBE)
- Graduate School of Business (GSB)
- Humanities
- Health Sciences
- Law

- Science

4. Position/Academic level

- Junior Research Fellow
- Assistant Lecturer
- Lecturer
- Senior Lecturer
- Associate Professor
- Professor
- Master's student
- Doctoral student
- Post-doctoral researcher

5. Do you use social media in your personal capacity?

- At least once a day
- At least once a week
- At least once a month
- Less frequently than once a month
- Never

6. Do you use social media during the research process?

- Yes
- No

If your answer is "No", please go directly to question 15.

7. How often do you use social media for research purposes?

- At least once a day
- At least once a week
- At least once a month

**8. Type of tool used for research purposes
(Choose as many as you like)**

Collaborating on research/Writing collaboratively

- Wordpress
- Blogger
- Google Docs
- Other: Please specify

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.....

Social networking/Sharing content

- Facebook
- Twitter
- Skype
- Dropbox
- Google Hangouts/Google Chat
- Google+
- Academia.edu

- LinkedIn
- ResearchGate
- Other: Please specify

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.....

Image and video sharing

- Pinterest
- Flickr
- Picasa
- YouTube
- Other: Please specify

.....
.....

Managing references/sources

- CiteULike
- Mendeley
- Refworks
- Zotero
- Other: Please specify

.....
.....

Sharing presentations

- Slideshare
- YouTube
- Prezi
- Other: Please specify

.....
.....

Social tagging and bookmarking

- Delicious
- Other: Please specify

.....
.....

RSS Feeds

- Feedly
- Other: Please specify

.....
.....

Curation of content

- Pinterest
- Other: Please specify

.....
.....

9. The tools are listed in this question, along with possible reasons for not using them. Please choose at least one reason per tool you do not use, or specify another reason. Leave those you do use blank.

Tool	I am not familiar with this tool	I have tried to use this, but it has not proved useful for my research	The benefits of using this tool are unclear to me	I find this tool difficult to use	Other: Please specify
Wordpress					
Blogger					
Google Docs					
Facebook					
Twitter					
Skype					
Dropbox					
Google Hangouts/Google Chat					
Google+					
Academia.edu					
Linkedin					
ResearchGate					
Pinterest					
Flickr					
Picasa					
YouTube					
CiteULike					
Mendeley					
Refworks					
Zotero					
Slideshare					
YouTube					
Prezi					
Feedly					
Pinterest					
Wordpress					

10. The tools are listed in this question, along with possible reasons for using them. Please choose at least one reason per tool you use, or specify another reason. Leave those you do not use blank.

Tool	This tool is easy to use	I like the immediacy of contact afforded by this tool	I was encouraged to use this tool by peers or because I am using it as part of a collaborative	Using this tool enhances my research profile	Other: Please specify

			project		
Wordpress					
Blogger					
Google Docs					
Facebook					
Twitter					
Skype					
Dropbox					
Google Hangouts/Google Chat					
Google+					
Academia.edu					
Linkedin					
ResearchGate					
Pinterest					
Flickr					
Picasa					
YouTube					
CiteULike					
Mendeley					
Refworks					
Zotero					
Slideshare					
YouTube					
Prezi					
Feedly					
Pinterest					
Wordpress					

11. If you indicated in question 8 that you use tools other than those listed, please list them here and indicate your reasons for using them

Tool	This tool is easy to use	I like the immediacy of contact afforded by this tool	I was encouraged to use this tool by peers or because I am using it as part of a collaborative project	Using this tool enhances my research profile	Other: Please specify

12. Why do you use social media during the research process?

(Choose as many as you like)

- Sourcing information/sources
- Keeping up to date with the literature
- Reflecting on literature/professional talks
- Citing publications
- Sharing publications (own or others')
- Collaborating on research
- Making contact with peers in your field
- Connecting with people outside of the academy
- Reading blogs
- Commenting on blogs
- Writing blogs
- Reading discussion lists
- Posting on discussion lists
- Contributing to a wiki
- Communicating while at a conference
- Keeping up with conference activities
- Other: Please specify

.....

13. How do you use social media in the research lifecycle?

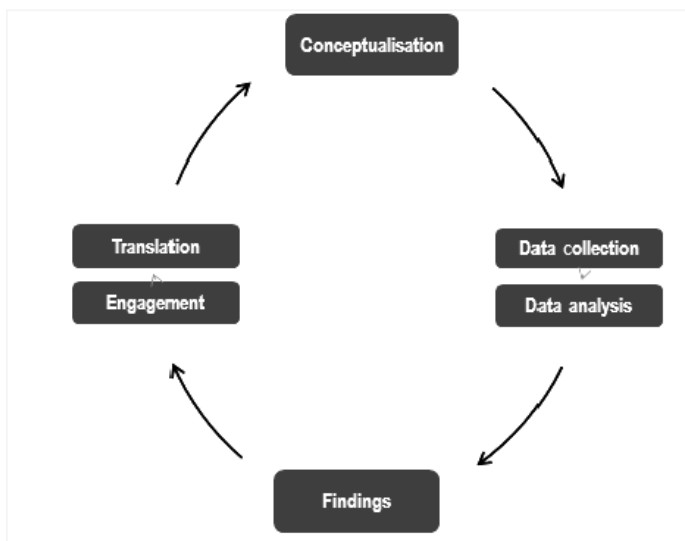


Figure 1: The scholarship landscape in the form of the traditional research cycle, varying to some extent by academic discipline

Figure 1

Czerniewicz (2012) developed a model to illustrate the research process (Fig.1). This question (Q10) asks you to think about whether you use social media during each stage of the process. (Choose as many options as you like.)

- Conceptualisation of research idea
- Data collection

- Data analysis
- Presenting findings
- Engagement
- Translation

14. What drives or encourages you to use social media during your research?

(Choose as many as you like)

- I am comfortable with the technology and find it easy to use.
- Immediacy
- Peers' encouragement
- Career incentives, such as greater recognition or promotion, are linked to the use of social media for research
- Enhancing my research profile
- Reaching a wider audience
- Ability to contact peers outside of my institution
- Research advocacy
- Library support/training
- Other: Please specify

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15. Which general factors, if any, hinder you from using social media during your research? (Even if you use social media during the research process, certain factors might discourage you from their use.)

(Choose as many as you like)

- There are too many tools to choose from.
- I do not have time to investigate new tools.
- Social media are a distraction and a waste of time.
- The benefits of some tools are unclear to me.
- I find the technology difficult to use.
- I am unsure about the copyright or intellectual property issues
- No support from Library
- Other: Please specify

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- None

16. What role would you like the Library to play in the support of social media for research purposes?

(Choose as many as you like)

- Provision of training
- Assistance in the use of tools

- Promotion and awareness of tools
- Advocacy and redistribution (eg – “retweeting researchers’ content)
- Curation and preservation of information on social media
- Other: Please specify

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- I do not think the library has a role to play here

17. Research impact can be affected by the use of social media and can be measured via methods such as Altmetrics. (Briefly, Altmetrics measures the impact of your research output on social media and other “non-traditional” publication vehicles by counting re-tweets, mentions on social media, comments, and links.) Do you use any Altmetrics tools, such as ImpactStory?

- Yes
- No
- I have not heard of Altmetrics.

18. One of the new services the Library would be able to offer in this environment is the promotion of your research (see Q13: Advocacy and redistribution) via social media and monitoring of its impact via methods such as Altmetrics. Would you find this kind of service valuable?

- Yes
- No
- I am not sure, as I am not familiar with Altmetrics.

19. If you think the library has no role to play in the support of social media for research purposes, please elaborate on why you think so.

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20. If you would be willing to be interviewed briefly on this topic, kindly enter your contact details in the space below.

Name:

Email address:

Telephone number:

Appendix B: Cover letter

Subject line: **Survey: Researchers and social media**

I am currently undertaking research towards my Master's in Information Technology through the University of Pretoria. The purpose of my research is to find out whether researchers (academics and postgraduate students) at UCT use social media during the research process, and if so, how the library can support this activity.

I would very much appreciate it if you could take the time to complete my questionnaire on this topic. It consists of 19 questions and should take you approximately 15 minutes to complete.

Your response is completely confidential: results are received electronically and in table format. The last question, which asks you to enter your contact details, is entirely voluntary, and required only if you would be willing to be interviewed on this topic.

The following link will take you to the online questionnaire:

https://docs.google.com/forms/d/1NQaLnXXKw4yyFcqG7Zo6Fx3iWSJbShxoom86xFV6YD0/viewform?usp=send_form

Thank you.

Janine Dunlop

M.IT candidate: University of Pretoria

janine.dunlop@gmail.com

Appendix C: Interview Schedule

Interview Schedule: For those who use social media during research

Introduction:

The purpose of my research is to find out whether social media is used by researchers at UCT during the research process. As you know, I sent out questionnaires to get an overview of the extent of social media usage. You responded that you use social media during the research process. These interviews are to gain more insight into how and why social media is used for research.

The interview will be recorded and transcribed, after which the recordings will be deleted. Your responses will be kept anonymous. No identifying information will be included in the analysis.

You may choose not to be recorded. Do you consent to being recorded?

Questions

1. What led you to use social media for research?

2. Collaboration, conversation, and interdisciplinarity are already part of the research process, so some see the affordances of social media as an extension of an already open process. Do you agree with this statement?

3. Do you think social media is taking scholarship in a completely different direction?

4. Based on Q7: How often do you use social media for research? (once a day; once a week; once a month):

Please elaborate on your answer to this question.

- Has social media been incorporated into your daily/weekly/monthly online routine?
- Have you found it fits naturally into your research workflow, or is it something “extra” that you have to find time for?

5. Do you use mainstream or custom-made tools?

Q8 asked you to list the tools you use.

Are you more comfortable using mainstream tools like Twitter and blogging, or tools that have been built specifically with academics in mind, such as ResearchGate or Academia.edu?

6. Based on Q12 (Why do you use social media during the research process?)

Are you more of a reader or a participator on social media? (Would you prefer to blog about a topic, or read about it on blogs? Do you tweet about your research, or read about your topic on Twitter?)

7. Based on Q13 (How do you use social media in the research lifecycle?)

Explain which tools you would use for each of the categories you chose and how you would use them.

- A. Conceptualisation of research idea
- B. Data collection
- C. Data analysis
- D. Presenting findings
- E. Engagement

8. What benefit(s) do you find from using social media during research?

9. What do social media allow you to do in the research process that you couldn't do before?

10. Have you had any experience with what Favaro and Hoadley (2014) call "Public peer review", where your peers have commented on a blog post or a contribution of yours to a social media site and critiqued your writing or your stance on a topic?

11. Have you followed the developments in the sphere of altmetrics?

- Do you see this as the beginning of a change in the peer review process?
- Do you think almetrics is a valid form of assessment?

12. Do you think social media usage for research is a fad, or do you think it represents a fundamental shift in scholarly communication?

13. Do you have any reservations about use of social media?

- Privacy issues;
- Control of information issues;
- Blurring of personal/professional boundaries;
- Other

14. Based on Q16 (What role would you like the Library to play in the support of social media usage for research purposes?)

If you chose A-E, please elaborate:

- What kind of training sessions/assistance would you need?
- How would you like to be made aware of tools?
- How could the Library help with redistribution of your research?
- How could the Library help in the curation and preservation of information on social media?

If you chose F, please elaborate:

- Why do you think the Library has no role to play in this area?

Conclusion: Thank you for taking the time to answer my questions.

Appendix D: Interview Schedule

Interview Schedule: For those who do not use social media during the research process:

Introduction:

The purpose of my research is to find out whether social media are used by researchers at UCT during the research process. As you know, I sent out questionnaires to get an overview of the extent of social media usage. You responded that you do not use social media during research. These interviews are to gain more insight into why social media is not used for research.

The interview will be recorded and transcribed, after which the recordings will be deleted. Your responses will be kept anonymous. No identifying information will be included in the analysis.

You may choose not to be recorded. Do you consent to being recorded?

Questions:

1. Based on Q5 (Do you use social media in your personal capacity?)

Please elaborate on this:

- Has social media been incorporated into your daily/weekly/monthly online routine?
- Have you found it fits naturally into your life, or is it something extra that you have to find time for?
- Do you find the tools intuitive or have you struggled to become familiar with them?

2. Based on Q14: (What drives or encourages you to use social media during your research?)

What, if anything, would drive or encourage you to use social media during your research?

- i. Technology/ease of use
- ii. Immediacy
- iii. Peers' encouragement
- iv. Ability to contact peers outside of your institution
- v. Enhancing your research profile
- vi. Other

3. Please elaborate on your answer to Q15:

- Do you have any objections to social media, either for research or private application?
- If so, what are they?
- What are your feelings about social media and research? Do you think they belong together at all?

4. Based on Q16 (What role would you like the Library to play in the support of social media usage for research purposes?)

If you chose A-E, please elaborate:

- What kind of training sessions/assistance would you need?
- How would you like to be made aware of tools?
- How could the Library help with redistribution of your research?
- How could the Library help in the curation and preservation of information on social media?

If you chose F, please elaborate:

- Why do you think the Library has no role to play in this area?

Conclusion: Thank you for taking the time to answer my questions.