

Information seeking challenges when moving across cultures: the case of Saudi female international students in Australia.

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This paper presents preliminary findings from a longitudinal qualitative PhD study on the information needs of Saudi female international students (SFIS) studying in Australia, and the search and information channels they use for seeking daily and academic information. More specifically, the study aims to explore and describe how the information needs and preferred sources of SFIS may change once they arrive in Australia. Using an exploratory research approach, data were collected in June 2015 through five semi-structured interviews. Preliminary findings drawn from a grounded theory analysis showed that the students' information needs and the information sources they used prior to their arrival, changed once they arrived in Australia. Before leaving home, the majority of students prioritised information on Australian culture and possible discrimination. Following their arrival, university administration and English fluency needs took precedence, and this trend remained until the last stage of their study. The students found that their English fluency in accessing university information presented more of a challenge than accessing day-to-day information, which was often available in both Arabic and English, or could be translated online. Further, Saudi relatives with Australian residency assisted students with their information collection in Australia. Recommendations to universities include greater attention to translation services especially when designing information portals, and reassessment of campus assistance and support services given to international students to enhance their academic experience.

Key words: social media, information needs information seeking, Saudi female international students.

Introduction

Recent advancements in communication and technologies have changed not only the way international students communicate with their remote families, but also how they access and seek information (Alzougool et al. 2103). Given the fact that many of today's international students have grown up using technology such as computers, mobile phones, and the Internet (Prensky 2001), the need to understand how international students seek information to satisfy their information needs becomes crucial (Alzougool et al. 2013). Recent studies on the information seeking behaviour (ISB) of international students reveal that students rely on a wide range of online sources to meet their information needs (Alzougool et al. 2013). Among the various online information sources, using search engines such as Google was cited as the most preferable way in which students started their information seeking activities (Morris & Teevan 2012). More recently, social technologies (also known as "social media") such as social networking and media-sharing sites were also identified among the many sources international students use to seek and discuss information about health, trends, events and news about their home countries (Binsahl & Chang 2012; Chang et al. 2012; Sin et al. 2011). Examples of social websites which were also used as a source of information include social-networking sites such as Facebook, micro-blogs such as Twitter, and media-sharing sites such as YouTube (Saw et al. 2012).

Recent studies also found that international students differ with respect to their information needs and information seeking strategies and tend to use various websites depending on their needs (Alzougool et al. 2013; Sin & Kim 2013). Saw et al. (2012) reported Facebook as a source for academic information for their study's participants, whilst Binsahl and Chang (2012) found in their study that Facebook was used by their study's participants only for news. Therefore, researchers identified the need for more research on international students and their daily information needs, especially with regard to particular influences related to a student's nationality (Sin & Kim 2013; Kim 2013; Chang et al. 2012).

In response to this need, this paper investigates questions related to the way in which SFIS conduct everyday life research, what type of information needs they have, and what information sources and practices they use to fulfil these needs. The study also aims to identify any changes that may happen in the students' information needs and ISB over time and across cultures. As part of an ongoing research

study, this paper presents the initial findings from five semi-structured interviews of Saudi women, who were students in Australia in June, 2015.

Regarding the study context, there are three main motivations for conducting this research on Saudi female students. Firstly, with the expected increased growth in the number of international Saudi female students (SFIS) who are culturally unique, there is an increasing need to understand their information needs and ISB; this is expected to be different from other international students (Binsahl et al 2015). Secondly, Binsahl et al. (2015) attribute the lack of studies on Saudi women students to the highly gender-segregated culture of the Saudi society, which makes it particularly difficult for male researchers to conduct studies on this group of students. In fact, many researchers describe Saudi women as the 'hard-to-reach population' (Al-Kahtani et al. 2006; Al-Saggaf & Williamson 2004). Finally, the primary author of the paper is also an SFIS herself, which presented some unique opportunities for better engagement with the study's context. Being from the same cultural context, the primary author of this paper was able to enjoy optimum access to the selected participants, interviewing in both Arabic and English, as well as having a better understanding of the participants' cultural and social values. However, there are also possible limitations and biases – therefore, working with the other authors of the paper countered possible limitations and biases and ensured continual unpacking and interrogation of key concepts where necessary and possible. Therefore, exploring the information needs and information seeking strategies of SFIS offers a good opportunity to explore the phenomenon being investigated in this study.

The paper is organised as follows: a summary of literature on related research involving international students' ISB is presented first. This is followed by a discussion on the experiences of Saudi female international students in Australia. The research questions and methodology are described, and the results are shown. A discussion of the findings concludes the paper.

Literature Review

Information is a fundamental need, and international students are confronted with the need for information related to: university requirements as well as the host country's customs, work, educational systems, and daily lives. Effective information acquisition is crucial as it contributes to a smoother cross-cultural adjustment process (Sin & Kim 2013). However, despite the many online and offline Australian sources provided to international students, Alzougool et al. (2013) found that some international students still prefer to refer to their home country sources rather than international or local websites. Esfahani and Chang (2012) reported students' cultural backgrounds as influential in visiting students' information seeking behaviour. This finding was supported by Kim (2013) who found that Korean students from a collectivist culture preferred some information in a visual form, whilst the more individualistic nationals from the United States' preferred text. In Australia, Hughes (2013) noted there was also an imbalance in international students' ability to access literal information; however, there were also fluency-related difficulties regarding critical analyses of such text. Therefore, unless there is understanding on how international students from diverse backgrounds fulfil their information needs, it will be difficult to develop strategies that meet and also influence the expectations and needs of these students (Song 2004).

Consequently, with the aim of extending the literature on international students' information seeking behaviour, this study explores the information needs and ISB of SFIS - a group of international students who are culturally and socially different from other international students (Al-Hazmi & Nyland 2010; Binsahl & Chang 2012). In May 2015, the Saudi Gazette (2015), citing the Ministry of Education, stated that in 2014 there were 35,537 Saudi women studying overseas; 3,354 studying a bachelor's degree, 15,696 a master's degree, and 3,206 were PhD candidates. Of these, 1,445 were located in Australia and New Zealand. From the day of their arrival, Saudi women find Australia is a multicultural country with secular jurisdictions and a liberal society. Hall (2013) explained that Saudi Arabia is a conservative Islamic country, with the Qur'an as its constitution and a jurisdiction based on Shari'ah (Islamic Law). Unlike other international students, Saudi women are restricted from publishing their photographs on the Internet, or indeed on paper (Binsahl & Chang 2012). Hall (2013) explained that, whilst women over 45 years of age may travel abroad without guardian permission (Bacchi 2015), social pressure is such that according to the Saudi culture, no woman can travel without her guardian (also called *Mahram*). A precondition of taking up a study scholarship is that women agree to be accompanied by their guardian,

and this usually means that a male member of their family accompanies them; this accounts for the number of dependents in Australia (Saudi Gazette, 2014).

By studying in Australia, SFIS also move from the text-based and exam-based education system currently in place in Saudi Arabia (Oshan 2007), to a research and web-based system whereby technologies such as wikis, blogs, and social networking sites (SNS) are integrated into the curriculum through online learning systems (Kennedy & Judd 2010). In contrast to western college students who started using computers during early childhood (Jones & Madden 2002), until 2004, female Saudi students were not granted internet access in public university computer labs (Harden & Al Beayez 2012). Saudi female students may therefore lack the skills that students from the most advanced countries have in applying these technologies to their information seeking strategies. Moreover, in Saudi Arabia, Arabic is the national language and for Saudi students, learning English can be a greater challenge than it is for other international students, such as those who speak Roman or Germanic languages, because the differences in Arabic and English are so stark (Hyen 2013). This consequential language barrier leads to difficulty adjusting not only to the educational system (Heyn 2013) but also to the challenge of obtaining everyday information; this has the potential to adversely affect students' cross-cultural adaptation (Binsahl, Chang & Bosua 2015).

There is ample research on Saudi students' initial responses to open societies such as North America, Europe and Australia (Midgley 2009; Al-Hazmi & Nyland 2010; Clerehan et al. 2012; Lefdahl-Davis & Perrone-McGovern 2015). These authors report on the academic and social challenges resulting from the transition from a highly gender-segregated culture to a new, mixed and open environment. However, due to language forms, assistance is also required for basic day-to-day necessities, such as identifying neighbourhoods where halal food and appropriate accommodation is available, finding transport, and making friends (Smith, Nayda & Rankin 2011). Young women students are especially impacted by an open society, given their position in Saudi Arabia under Islamic law (Al-Zahrani 2010).

Despite many challenges, time builds confidence, and students reported a change in their attitudes towards some cultural aspects, such as studying in a mixed environment (Al-Hazmi & Nyland 2013; Hall 2013). Lefdahl-Davis and Perrone-McGovern (2015) reported that the majority of their study participants became used to the new freedom of travelling, readily visiting public places, and exploring new disciplines and fields of knowledge. This aspect of growing confidence formed part of this research, where the research questions followed the type of information that study participants sought before and after their arrival in Australia, and the media used to obtain it.

To the best knowledge of this researcher, there is no published research focusing on information needs and ISB of ISFS. While international students' ISB and information needs have been investigated by many scholars, most of these studies were quantitative and focused on academic and research information seeking activities (Liao, Finn & Lu 2007; Earp 2008; Korobili, Malliari & Zapounidou 2011). Little attention has been given to examine how international students obtain information about everyday life in general, and in particular, via social technologies. Moreover, most of the literature on international students' ISB has been conducted on Asian students, who constitute the largest group of international students (Sin & Kim 2013; Sin et al 2011). Thus, the results cannot be generalised to other international students from different cultures. Researchers found that students from different cultures show different information needs (Komlodi & Carline 2004; Kim 2013). Consequently, in response to the increasing need to conduct more studies on the ISB of international students from different cultures, this study aims to fill the gap by investigating information needs of SFIS and the sources they refer to when they seek their information.

Research Questions

This study addressed the following research questions.

1. What are the information needs of SFIS prior to and following their arrival in Australia?
2. Which online and off-line sources do SFIS use for solving their information problems?

Methodology

Given the exploratory nature of the study, a qualitative research approach was followed. A semi-structured interview method was followed in order to construct a profile of the students, which included

their information needs, research practices and websites and apps necessary to obtain the desired information based on students' day-to-day experiences and perceptions (Mehra and Bilal, 2013).

In June 2015, five Saudi female students studying in Melbourne agreed to voluntarily participate in one-on-one interviews. During the interview meeting, participants were first asked to fill a background questionnaire. Each participant then participated in an initial face-to-face interview and was also asked to fill a daily diary log over a period of two consecutive weeks (14 days in total) to record tasks and activities they do every day in relation to their daily information seeking activities. Questions used in interviews ranged from general questions on the students' information needs and sources prior and after their arrival to Australia to more in-depth questions related to the changes in the information needs and ISB of SFIS over time and after their transition to Australia.

Participants were given the chance to answer the interview questions in Arabic or English, as they preferred. Interview responses were recorded, translated if necessary, and transcribed. To assure participants' confidentiality, each participant was assigned an identifier for analysis. Transcripts were then sent to the interviewees to confirm the transcribed answers represented exactly what they intended. The transcribed data were then coded in three phases of analysis: open, axial, and selective, using Corbin and Strauss's (2014) grounded theory approach. Emerging themes were categorised using Neuman's (2006) labelling template. In addition, descriptive statistics generated from the background questionnaire provided a quantitative assessment of the participants' social media experiences (Mehra & Bilal 2013).

Of the five study participants, three were studying the English language, one was completing a Master's degree and the remaining participant was a PhD candidate. At the time of conducting the interviews, one participant was a long-term resident (7 years) in Australia, two had been residents for more than 18 months, and the remaining two participants reported they had arrived some 10 months ago. Two participants had family responsibilities, as outlined in Table 1 below.

Table: Participants' profiles

Participant	Study level	Family responsibilities	Discipline	Length of residency
A	Intermediate English course	Yes	Social studies	Less than a year
B	Advanced English course	No	Business	2 years
C	Advanced English course	No	Arts	Less than a year
D	Postgraduate studies	No	Education	2 years
E	PhD candidate	Yes	Health	7 years

Results

Themes emerging from the data concerned: 1) changing information needs following arrival in Australia from Saudi Arabia 2) preferred information sources and 3) changing information seeking strategies. This section presents the three themes.

Theme 1: Change in focus of information needs after arrival in Australia

This theme describes the changes in the topics of information the participants needed and sought from the point they decided to study in Australia until they were established as a university student. This theme was chosen to address the research objective of identifying any changes in the participants' information needs over time and across different cultures. All participants reported changes in the topics their searches focused on ~~their search~~ before and after their arrival to Australia. The following sub-themes describe the participants' search focus: 1) before/prior to arrival in Australia and 2) following/post arrival to Australia.

1.1: Focusing on information about Australia prior to arrival

The majority of participants (80%) said they prioritized searching for attitudes of Australians towards Islam. They were more concerned about the effect their dress and lifestyle might have and possible

resulting discrimination, than academic issues. Participants reported that their educational needs were managed by either their educational agent or by a relative residing in Australia. Other concerns included matters associated with living in Australia, such as locating accommodation, arranging finance, and settling in children, which in some cases was the responsibility of the *Mahram* (male guardian). Participant E (PhD candidate) said:

“After I decided to study in Australia and before I travelled . . . the most important thing . . . was to get information about Australia’s lifestyle, culture and Australian’s perception about Muslims, as I was afraid about religious discrimination . . . Information about (living) expenses (were) also important . . . accommodation information was not important as I relied on my brother.”

1.2: Focusing on academic and general information post-arrival.

University life was challenging in identifying ancillary courses for research skills and English fluency for all participants and accessing neighbourhood services such as public transport and family needs.

Participant A with children explained:

“After I arrived Australia . . . and started my English course, I searched for information on improving [my] English (fluency) . . . finding childcare for my son and other information, like public transport was also important for me.”

However, the majority (80%) described finding academic information, such as how to accomplish their study tasks, more complex than accessing day-to-day information. The majority of participants identified their limited English skills as an obstacle in gathering academic information, both in terms of online and personal communications in Australia. Participant B cited her reluctance to keep asking for assistance from educators, so she directed many queries for information to friends. She said:

“I think finding academic information was more difficult than finding daily information. For daily information I can just search Google or ask friends in my own language . . . But for academic information, (you need good) English . . .and as my English (fluency is low) it was difficult . . . Of course, with Google you can search using Arabic but the sources suggested were not good as . . . (searching) in English. Your assignment is in English . . . so you need to search in English.”

The majority (4/5) also attributed the difficulty of finding academic information to their limited search skills resulting from the Saudi educational system. Participant A described the transition to the Australian educational system as challenging and said:

“Unlike in Saudi where all the academic materials are given to us by our teacher, here (in Australia) I have to depend on myself and do a lot of search for everything starting from the class timetable till the assignment structure.”

Participant E (PhD candidate) was an exception who found searching and accessing daily information more difficult than accessing academic information. She had a very good level of English and had been studying in Melbourne for about 7 years:

“I think daily information was more difficult . . . to find than academic information where (the) language centre or supervisor and academic online websites . . . But daily information . . . it was difficult to trust people’s answers the first time and instead you (kept searching) until are confident you have the right answer”.

Theme 2: Preferred information sources

This theme addresses the second research question of this study that aims to identify participants’ preferred sources of information. All participants indicated that they limited their information search to a few online websites, asking friends and family and using social media. The sub-themes here include reliance on: 1) the Web, 2) friends and family and 3) social media for information.

2.1: Reliance on the web for information.

Prior to departure to Australia, all participants used search engines, with Google being nominated as their

preferred search engine. Participants described their use of Google as the first step when they wished to seek any information.

Four out of the five interviewees reported using the *Mubtaath* website¹ prior to their arrival as a source for searches related to everyday life. Participant A noted that this website was a social hub where information was available from Saudi students already in Australia. Through these channels, consensus answers to requested information became clear. Participant A described the relationship between Google and *Mubtaath* by saying:

“Prior to my arrival, I used to check Mubtaath every day. It is the first option suggested by Google to any question I asked about living and studying in Australia.”

None of the participants used online Australian sources before their departure due to their limited English fluency skills and inability to use these skills to follow links, even if known. The majority was not even aware of these services available online. Only one participant, the PhD candidate, reported using online academic websites, such as ResearchGate and Google Scholar:

“For academic information related to my research, I prefer to use academic online sources such as the medical search engine ‘Pub med’ and ‘Google scholar’. In ‘ResearchGate’, I found that most of the questions I want to ask were already asked by most researchers and already answered by professional academic and professors. I used it as a source of information on . . . statistical analysis”.

2.2: Reliance on friends and family for information.

Participants also reported gathering information from relatives and friends on conditions in Australia, particularly Melbourne, before leaving for Australia. Participant B remarked that a relative living in Australia was her primary source of information, rather than an online search. Further, the relative's friends welcomed participant B into their group.

Participant E, who had lived in Australia for seven years, was the only interviewee who reported issues on arrival in Australia:

“For the first . . . few weeks, I remember how difficult it was for me and my brother to find accommodation . . . we didn't have any friends here”. This participant mentioned that the pair did not know that accommodation was advertised online, so they walked from building to building asking people for accommodation, which was time-consuming. The interviewee said that integration for Saudi students into Melbourne life was now far easier than before.

Two participants also referred to a particular Saudi educational agent “*Masiratna*”² who facilitated access to university offers. Participant C said this agent was a student in Australia and attended the same Saudi university, and therefore knew what was acceptable to the Ministry, met the Saudi university's course requirements, and facilitated entry into an Australian university English course.

Once established in Australia, participants used mobile phones or the online tool, WhatsApp, to communicate with others and access information.

2.3: Social media as a source of information.

Participants' information channel selections broadly followed the rise of international trends in communications. The move to Australia accelerated their adoption of the most efficient media to gain information to solve immediate problems: finding accommodation, integrating into established Saudi student groups, and solving complex administrative university matters. Social technologies such as WhatsApp, Twitter, YouTube, and Snapchat were preferable sources of information for the majority; however, social media was only considered appropriate in relation to non-urgent information. For

¹ *Mubtaath*, (Arabic website name), means “A Scholarship Student”. Created by Saudi scholarship this website aims to help new students find all the information they may need during their scholarship experience.

² *Masiratna* is an education and training-counselling agency that offers Saudi and Gulf Cooperation Council (GCC) students outstanding opportunities to study in Australia. It is the first educational agent, managed and owned by a Saudi scholarship student in Australia.

instance, in the case of the need for immediate information. All participants reported searching Google or asking a knowledgeable friend using voice contact. Issues such as the delay in getting response from their friends was a major cause dissuading them from using social media. Participant E considered the delay in getting responses to her inquiries through WhatsApp an issue that discouraged her from using this platform when needing information. For participant E, using WhatsApp was useful only for casual matters, such as children's entertainment or to manage time-zone differences between Saudi Arabia and Australia.

Participant C, the only interviewee who actively used social media (Instagram and Twitter) prior to leaving Saudi Arabia, reported that her Instagram account was set up to be in touch with or contact a Saudi individual who lived in Australia who could help with information when required:

“Her account was popular as she always posted pictures and valuable information about what we as Saudi females would need in Australia. In her account I found information about Australian public transport, Halal restaurants, and tourist places”.

Once established in Australia, interviewees described WhatsApp and Snapchat as instrumental in keeping in touch with family and friends, predominantly the former. Further, the use of different social media sites evolved over time among the Saudis. Surprisingly, they collectively dropped Facebook, whilst a minority (40%) kept on using Twitter. When students were asked about the reasons they stopped using Facebook, the majority reported the following reasons (in order of importance): their friends' discontinued use of Facebook; dissatisfaction of SFIS with this platform and the recent introduction of new social media applications, such as Snapchat and WhatsApp. Interestingly, SFIS described WhatsApp and Snapchat as being more attractive, more private and easier to use than Facebook. Therefore, the majority reported frequent and daily use of WhatsApp, Snapchat, Instagram and YouTube. WhatsApp and Snapchat were mainly used to communicate with close friends and family members, while YouTube was used for entertainment (such as watching movies) and academic purposes (watching videos on how to improve their language). Instagram and Twitter, on the other hand, were used as a source of social and political news. Participant D described her social media use as a source of information and said:

“I prefer different [social media websites] for different information needs. If I am looking for news I prefer Twitter. Twitter is the most popular source of news in my country . . . Instagram is the source of general information such as . . . fashion and food. YouTube is my preferred source for videos . . . to improve my language skills. There are many Arabic and English videos that help”.

However, when the students were asked whether they refer to their institutional social media when in Australia, the majority (4/5) said that they didn't know that their institutions were on social media and said even if they had known, they would not refer to them due to their English deficiency and the availability of other Arabic and more easily-understood English accounts. The only student who reported that she was a follower of her institution's Twitter and Facebook accounts was the PhD student, who has been living in Australia for about 7 years and who described her language skills as 'very good'. However, she described her institutional social media as useless and wasting her time as she couldn't get what she was looking for due to the information overload in these accounts. This made them less attractive to her when compared to the institution's website, which was well-organized and easier to use.

Finally, despite the use of social technologies as an information source for different information, when it comes to seeking information about health and spiritual matters, the majority reported using Google or asking expert advice (5/5). The majority described Google as the only platform to use when they want to ask personal and sensitive information (e.g. health or religious information), due to reasons of trusting information, trust in their friends' knowledge and privacy. Participant A justified her answer by saying:

“For health or religion (sic) information, I prefer to use Google or to ask only experts in these fields and I trust that they can give me the right answers. I wouldn't put my question on the social media... on social media I have followers and friends who I don't know personally and can't trust them or their knowledge... therefore, for religious inquires, I prefer to check Islamic websites (e.g. Ahl-alsunnah) which are managed by scholars who have the same beliefs as mine.”

Theme 3: Changing information seeking strategies post arrival.

This theme describes the influence of moving to Australia on SFIS' information-seeking practices. The majority of participants considered the transition to Australia a positive experience that helped them to improve their information seeking skills. They reported the reasons for this as follows:

3.1: Better Accessibility

Most participants described the Australian experience as improving their ability to access information. Participant A attributed the change to the numerous mobile Internet plans, which facilitated online searching. Participant D said:

“I think after I came to Australia I started to rely more on my mobile. This is because here I can charge my mobile and get unlimited access to social media such as Twitter. The Internet speed here is also much better than in Saudi ... It is much cheaper and convenient than calling.”

3.2: More reliance on online sources.

Participant E, who had little online experience before coming to Australia, reported asking her peer group for information. Additionally, in Australia, she found herself exposed to a wide range of online sources and technologies that facilitated her learning and information seeking:

“When I came first here . . . it was the first time to know about Facebook ... It was also the first time to hear about finding academic articles from Google Scholar ... I think by living in Australia, I become a digital person ... I just Google anything or source it on Twitter or asking my friends on WhatsApp.”

3.3: Influence of a Mahram's presence on information seeking strategies

Interestingly, for three out of five participants, the presence of their Mahram meant that they had to seek more information, not only about their own needs, but also their husband's (for married SFIS) or brother's (for single SFIS) needs to be able to both settle into Australia. Participant E talked about searching on social media accounts – websites and Instagram – for such information due to the presence of her Mahram.

“It is a precondition to Saudi females who want to get the scholarship that their Mahram (husband, brother or father) agrees to come with them ... one of my duties towards him is to help him settle by helping him to meet Saudis and finding a car so he can go to his language centre. I searched Mubtaath and the Saudi Club in Melbourne and websites and Instagram.”

3.4: Changes in parents' use of social media

Interestingly, when participants described their transition to Australia, which is known for its great distance from Saudi, they reported changes in their parents' technological adoption and use. Participant B said:

“After my brother and myself moved overseas, my parents started to think of finding the easiest and convenient ways to communicate with us ... Tango, WhatsApp and even Instagram. I think if we didn't go overseas he wouldn't think of using technology at all.”

3.5: Changes in cultural beliefs about asking males

Four participants reported changes in their perception of some cultural concepts, mentioning that they ask their classmates when they have any academic questions, regardless of their gender and nationality. However, the majority also emphasized the time and place to ask males by saying “*ONLY academic and general questions and that ONLY within the class boundary.*”

Discussion and Conclusion

This paper presents preliminary findings of a study that explores Saudi women's *information needs and preferred sources of information*. The study also aims to identify any *changes* in Saudi women's information seeking strategies prior to and after their arrival in Australian. Based on the findings, a number of patterns amongst Saudi women regarding their needs and usage of sources to get information

can be drawn:

- Saudi female international students' *information needs changed between pre-and post-arrival* in Australia. Initially, searching focused on fears of cultural discrimination, and upon arrival, this focus changed to searching for services and specific information, such as finding one's way around the university's administration system. There is substantial research on fear of discrimination; Brown and Aktas (2012) noted Turkish students, although aspirational about studying in the United Kingdom, harboured trepidation by immersing themselves in another society. McClelland et al. (2015) pointed out that it is a prime concern of all universities to offer a safe environment to students, especially international arrivals, to achieve their potential in positive circumstances.

- Similar to Chang et al.'s (2014) findings, the participants in this study used *multiple sources and contacts for information*: other persons (e.g. close family and friends), search websites, mobile devices, and various social media channels. To gather information on Australia prior to their arrival, the majority used family connections, Google, and Saudi websites, such as *Mubtaath*. No participants used formal Australian websites (university or governmental websites) or informal websites (institutional social media). Unsurprisingly, this was mainly due to limited English fluency and the many Arabic sources available for Saudi students. Similarly, Alzougool et al. (2013) found that international students preferred to access pre-arrival information using home country sources, rather than searching in their destination country. The conclusion from this finding is that there is advantage in using online translation services to search for information in Arabic, and then implement translation of the required information into English. There is considerable research attention on such translation services; Al-Rehili et al. (2012) earlier produced a program that use voice requests in English or Arabic and produce a translation, including pronunciation. Sakr and Hasegawa-Johnson (2013) used a data gathering and analysis program to collect the required information in any language and produce it either as text or speech in the selected language.

- Once in Australia and especially in the first few months after their arrival, *participants sought assistance* for getting answers to their daily queries only through their offline and social media networks. Similar to Kim, Lee and Sin's findings (2011), SFIS use different types of social media as information sources for different information. Some of these, such as YouTube and Twitter seem to have emerged as important information sources even in academic contexts. However, it has also been found that, despite their use of online sources, none of the students reported their use of the Australian websites or social media as a source of their daily information. This was attributed to their limited English levels and lack of awareness of the wide range of online services provided to international students by their institution. Participants in this study thought their institutional website and social media focused only on academic information such as that related to courses. In fact, none of them knew that these websites and social media were also used to help international students to fulfil their non-academic information such as housing and health information. The only student who reported her use of both formal and informal Australian websites was a research student who has been living in Australia for a long time (7 years). This means that due to her lengthy stay in Australia, the student has gained better research skills and language level, which increased her search abilities and knowledge of sources. This finding confirms the assumptions of Binsahl Chang and Bosuaet al. (2015), which suggest that students' length of stay and educational level (PhD vs English language level) would influence their information needs and use of Australian sources. Additionally, this study suggests the influence of information quality and system usability on SFIS' intention to use their institutional social media. This finding is confirmed by recent studies on the factors that influence intentional use of various technologies, such as online learning systems (Lin 2007); knowledge management systems (Wu & Wang 2006), and e-commerce (Wang 2008).

- In contrast to Sin et al (2011), SFIS considered finding *academic information more challenging* than daily information. One justification for the difference could be the different levels of English each group of students had. While the majority of participants in this study were doing an English course, Sin et al's (2011) participants were postgraduate students. This finding supports a call for universities and language centres to increase academic support, especially in the early weeks of a course, to ensure that students are integrated with the class and capable of contributing to the discussions. Therefore, it is recommended to design online and offline academic support services with easily understood language and translation features.

- Further, while daily information related to career and finance was ranked among the most needed information by Sin et al's (2011) study participants who described this type of information as the least important. This finding comes in line with Binsahl, Chang and Bosua's (2015) assumption that finance and career information would be of less impertinence to SFIS due to their unique financial status. In fact,

participants were grateful for their government's financial support for their education and for family members, i.e. funding was not as large an issue as that experienced by other international students (Al-Hazmi & Nyland 2010). Another reason to justify the difference in information needs between SFIS and other international students could be the different future plans to the two groups of international students. In fact, unlike other international students who may be motivated to study in Australia with the intention of getting the permanent residency (Gomes 2015) and thus finding career information would be crucial for them, all Saudi students know that their stay in Australia will be temporary and as long as they finish their studies they have to go back Saudi unless they extend their scholarship to get a higher degree (Hall 2013).

- The study's findings for *information search practices of the participants* were similar to other studies on the information seeking literature of international students (Chang et al.2012; Earp 2008). Generally, SFIS preferred to start their search through Google for information, then turned to their social networks (WhatsApp) if frustrated (Morris & Teevan 2012). Google was cited as appropriate for locating information, university-related or other special-interest information. This also included searching for personal (health) or sensitive (religious) information. WhatsApp, Instagram and YouTube supported special interest information, such as entertainment and chatting. Scarpino and Alshif (2013) also found substantial advantages for Saudis living in the United States in keeping regular contact with home; especially WhatsApp, due to its free services. Interestingly, despite the fact that participants in the current study considered WhatsApp as the only private technology where they can share their private information such as personal photos with their social network, when it comes to asking sensitive and religious information, none of the students reported their use of WhatsApp as a source of health or religious information. One major concern was their social network's knowledge. Several participants commented on the need to seek health and religious information only from experts. A finding of Zhang's study (2013) described participants' lack of trust in their social network's knowledge about health information, which prevented them from using Facebook as a source of health information. The inappropriateness of using social media for asking questions on personal topics, such as health, and religion, was also expressed by Morris et al.(2010).

- There was evidence of *trends in social media*. For instance, while Saudi women in Binsahl and Chang's (2012) study identified Facebook as an important technology to keep them in touch with their friends and get up-to-date information, findings in the current study shows that social trends and preferences moved to WhatsApp and Snapchat, which in 2015 dominated both communication and information-gathering amongst the Saudis. Factors such as peer pressure and the introduction of new social media are common reasons for the change in social media preferences. Recent studies on the factors that affect user's intention to continue using Facebook suggest the following: the strong influence of peer pressure (Al-Debie et al 2013, Kim 2011), users' satisfaction with Facebook experience (Shi et al 2010); and the recent introduction of new social media applications (Aljasir et al.2012).

- Interestingly, when it comes to *the impact of the move to Australia* on Saudi women, participants described how the transitional experience has positively increased their reliance on online sources for their information needs, due to better Internet accessibility and the Australian educational system, which is described by participants as an online and search-based environment. Additionally, participants also mentioned the positive influence of the transition to Australia on their parents' technological use. In her article, Albeity (2014) discussed the potential of having a scholarship student in the family. It seems that the transition to Australia impacts the use of social media, not only for Saudi female international students, but also for their families. At the same time, SFIS also described the transition to the Australian education system more challenging for them. In addition to the language issues, the majority talked about the impact of the presence of their Mahram and children, as well as their limited research skills due to having moved from being more passive recipients of information to becoming more dependent on their own searching for information they needed. This finding confirms the assumptions of Binsahl, Chang and Bosua (2015) on the influence of SFIS' language deficiency, transition to Australia and presence of *Mahram* on their information needs and ISB.

In summary, although this is a small sample, there are findings that support existing literature arguing for the need to monitor social media use by international students so that universities and government authorities can target their online administration to provide improved services and support for their student 'clients' (Alzougool et al. 2013; Saw et al. 2013). Key implications from this study show the importance of: 1) providing 'pre-arrival' information back to students' in their home countries; (2) working with existing SFIS and familial networks in Australia to provide more essential information, including information on settling into a new country; (3) introducing SFIS to Australian host institution

websites and taking them through the essential sections, assuming they cannot navigate these easily, especially if their English fluency is limited, and (4) noting that the patterns of social media use are diverse amongst the student population and that not all students will use similar platforms. In terms of collaborations between service providers in providing information to international students, the current study gives insights into the common sources SFIS use in seeking information during pre- and post-arrival. In order to increase understanding of Saudi international students' specific information needs, Australian service providers are encouraged to collaborate more with Saudi-related sources to improve information provision services to Saudi international students.

References

- Alanazi, A, Liu, B & Forster, J 2011, 'Saudi Arabian IPOs and privatized firms profitability', *Review of Middle East Economics and Finance*, vol. 7, no. 1, pp. 67-90.
- Albeity, H 2014, 'Saudi scholarship students and the problems they face', *Arab news*, 11 July, viewed 30 July 2015, <http://www.arabnews.com/news/599976>.
- Al-Debei, M, Al-Lozi, E & Papazafeiropoulou, A 2013, 'Why people keep coming back to Facebook: Explaining and predicting continuance participation from an extended theory of planned behaviour perspective', *Decision support systems*, vol. 55, no. 1, pp. 43-54.
- Al-Hazmi, A & Nyland, B 2010, 'Saudi international students in Australia and intercultural engagement: A study of transitioning from a gender segregated culture to a mixed gender environment', Paper presented to *21st International Student Advisers' Network of Australia/International Education Association Conference*, Melbourne, Australia, pp. 1-11.
- Al-Jasir, A, Woodcock, A, & Harrison, S 2012, 'Facebook Non-users in Saudi Arabia: Why Do Some Saudi College Students Not Use Facebook?', *International conference on management and social sciences*, viewed 21 March 2015, <http://psrcentre.org/images/extraimages/4.%20312713.pdf>.
- Al-Rehili, A, Al-Juhani, D, Al-Maimani, M, & Ahmed, M 2012, 'A novel approach to convert speech to text and vice-versa and translate from English to Arabic Language', *International Journal of Science and Applied Technology*, vol. 1, no. 2, pp. 57-64, viewed 26 July 2015, <http://www.warse.org/IJSAIT/static/pdf/file/ijisait03122012.pdf>.
- Al-Saggaf, Y 2011, 'Saudi females on Facebook: An ethnographic study', *International Journal of Emerging Technologies and Society*, vol. 9, no.1, pp. 1-19.
- Al-Saggaf, Y & Williamson, K 2004, 'Online Communities in Saudi Arabia: Evaluating the Impact on Culture Through Online Semi-Structured Interviews', Paper presented at *the Forum: Qualitative Social Research*, vol. 5, no. 3, pp. 1-20, Viewed 15 May 2015, http://http://bilby.unilinc.edu.au/webclient/StreamGate?folder_id=0&dvs=1438228518982~287&usePid1=true&usePid2=true.
- Al-Zahrani, A 2010, 'Women's sexual health care in Saudi Arabia: A focused ethnographic study' PhD thesis, University of Sheffield, viewed 13 March 2015, http://etheses.whiterose.ac.uk/1436/2/Alzahrani,_Ahlam.pdf.
- Alzougool, B, Chang, S, Gomes, C, & Berry, M 2013, 'Finding their way around: International students' use of information sources', *Journal of Advanced Management Science*, vol. 1, no.1, pp. 43-49.
- Bacchi, U 2015, 'Saudi Arabia mulls allowing women to travel without men's permission - if they have good reason', *International Business Time*, 10 June, Viewed 23 July 2015, <http://www.ibtimes.co.uk/saudi-arabia-mulls-allowing-women-travel-without-mens-permission-if-they-have-good-reason-1505400>.
- Binsahl, H, Chang, S & Bosua, R 2015, 'Identity and belonging: Saudi female international students and their use of social networking sites', *Crossings: Journal of Migration and Culture*, vol. 6, no.1, pp. 81-102.
- Binsahl, H & Chang, S 2012, 'International Saudi female students in Australia and social networking sites: What are the motivations and barriers to communication?', In K Richardson, S Chang & T McGrath (eds), *Proceedings of*

the 23rd International Education Association Inc ISANA Academy Association Conference, Auckland, New Zealand, pp.1-12.

Brown, L & Aktas, G 2012, 'Turkish university students' hopes and fears about travel to the west', *Journal of Research in International Education*, vol. 11, no.1, 3-18.

Chang S, Alzougool, B, Berry, M, Gomes, C, Smith, S, & Reeders, D 2012, 'International students in the digital age: do you know where your students go to for information? Paper presented at the *Australian International Education Conference*, Australia, Melbourne, viewed 22 July 2015, http://aiec.idp.com/uploads/pdf/2012_chang_fri_1235_212_paper.pdf.

Chen, W 2010, 'Internet-usage patterns of immigrants in the process of intercultural adaptation', *Cyberpsychology, Behavior and Social Networking*, vol.13, no.4, pp. 387-99.

Clerahan, R, McCall, L, McKenna, L, & Alshahrani, K 2012, 'Saudi Arabian nurses' experiences of studying Masters degrees in Australia', *International Nursing Review*, vol. 59, no. 2, pp. 215-221.

Communications and Information Technology Commission 2015, *ICT Indicators Charts End of Q4 2014*, viewed 26 July 2015, <http://www.citc.gov.sa/English/Reportsandstudies/Indicators/Indicators%20of%20Communications%20and%20Information%20Techn/ICT%20Indicators%20Q4%202014%20english%20final.pdf>.

Corbin, J & Strauss, A 2014, *Basics of qualitative research: Techniques and procedures for developing grounded theory*, 4th edn, Thousand Oaks, CA: Sage.

Department of Foreign Affairs and Trade 2015, *Saudi Arabia*, viewed 23 July 2015, <http://dfat.gov.au/geo/saudi-arabia/pages/saudi-arabia-country-brief.aspx>.

Dubai School of Government 2013, *Transforming Education in the Arab World: Breaking Barriers in the Age of Social Learning*, viewed 15 May 2015, [http://www.arabsocialmediaareport.com/UserManagement/PDF/ASMR 5 Report Final.pdf](http://www.arabsocialmediaareport.com/UserManagement/PDF/ASMR%205%20Report%20Final.pdf).

Esfahani, L & Chang, S 2012, 'Factors impacting information seeking behaviour of international students: Towards a conceptual model', In Richardson, K, Chang, S & McGrath, T (eds), *Proceedings of the 23rd International Education Association Inc. ISANA Academy Association Conference*, Auckland, New Zealand, pp. 1-11.

Gomes, C 2015, 'Footloose transients: International students in Australia and their aspirations for transnational mobility after graduation', *Crossings: Journal of Migration and Culture*, vol. 6, no. 1, pp. 41-57.

Gomes, C, Berry, M, Alzougool, B, & Chang, S 2014, 'Home away from home: International students and their identity-based social networks in Australia', *Journal of International Students*, vol. 4, no. 1, pp. 2-15.

Hall, T 2013, 'Saudi male perceptions of study in the United States: An analysis of King Abdullah Scholarship Program participants' PhD thesis, Western Kentucky University, viewed 19 February 2015, <http://digitalcommons.wku.edu/cgi/viewcontent.cgi?article=1049&context=diss>.

Harden, G & AL beayeyz, A 2012, 'A Comparative Analysis of Social Networking Site Use in Two Distinct Cultures: Evaluating the IT-Culture Conflict', *Global Media Journal*, vol. 12, no. 22, pp. 1-17.

Holtz, M 2015, 'King Abdullah an 'advocate of women'? What he did and didn't achieve, *The Christian Science Monitor*, 23 January, viewed 23 July 2015, <http://www.csmonitor.com/World/Middle-East/2015/0123/King-Abdullah-an-advocate-of-women-What-he-did-and-didn-t-achieve>.

Hughes, H 2013, 'International students using online information resources to learn: Complex experience and learning needs', *Journal of Further and Higher Education*, vol. 37, no.1, pp. 126-146.

Heyn, M 2013, 'Experiences of Male Saudi Arabian International Students in the United States' PhD thesis, Western Michigan University, viewed 6 January 2015, <http://scholarworks.wmich.edu/cgi/viewcontent.cgi?article=1169&context=dissertations>

- Joinson, A 2008, 'Looking at, looking up or keeping up with people?: motives and use of Facebook', In *Proceedings of the Association for Computer Machinery's Conference on human factors in computing systems*, Florence, Italy , pp. 1027-1036..
- Jones, S & Madden, M 2002, 'The Internet goes to college: How students are living in the future with today's technology', Pew Internet and American Life Project, Washington, viewed 20 March 2015, [http://www.pewinternet.org/files/old media/Files/Reports/2002/PIP_College_Report.pdf.pdf](http://www.pewinternet.org/files/old_media/Files/Reports/2002/PIP_College_Report.pdf.pdf).
- Kim, B 2011, 'Understanding antecedents of continuance intention in social-networking services', *Cyberpsychology Behavior and Social Networking*, vol. 14, no. 4, pp. 199-205.
- Kim, J 2013, 'Information and culture: Cultural differences in the perception and recall of information', *Library & Information Science Research*, vol. 35, no.3, pp. 241-250.
- Kim, K. S, Lee, Y. E, & Sin, S. C. 2011, 'Social media as information source: Undergraduates' use and evaluation behavior', *Proceedings of the American Society for Information Science and Technology*, vol. 48, no.1, pp.1-3.
- Komlodi, A & Carlin, M 2004, 'Identifying cultural variables in information seeking', *American Conference on Information Systems (AMCIS)*, 31 December, viewed 22 March 2015, <http://aisel.aisnet.org/amcis2004/68>
- Korobili, S, Malliari, A & Zapounidou, S 2011, ' Factors that influence information seeking behavior: The case of Greek graduate students', *The Journal of Academic Librarianship*, vol. 37, no. 2, pp. 155-165
- Lefdahl-Davis, E & Perrone-McGovern, K 2015, 'The cultural adjustment of Saudi women international students: A qualitative examination', *Journal of Cross-Cultural Psychology*, vol. 46, no. 3, pp. 406-434.
- Liao, Y, Finn, M & Lu, J 2007, 'Information seeking behavior of international graduate students vs. American graduate students: A user study at Virginia Tech 2005', *College & Research Libraries*, vol. 68, no.1, pp. 5-25.
- Lillyman, S & Bennett, C 2014, 'Providing a positive learning experience for international students studying at UK universities: A literature review', *Journal of Research in International Education*, vol. 13, no. 1, pp. 63-75.
- Lin, H 2007, 'Measuring online learning systems success: applying the updated DeLone and McLean model', *Cyberpsychology & behavior*, vol.10, pp. 817-820.
- McClelland, G, Horne, M, Dearnley, C, Raynsford, J, & Irving, D 2015, 'Experiences and Outcomes among undergraduate health professional higher education students with protected characteristics: Disability, gender, and ethnicity', *Journal of Psychological Issues in Organizational Culture*, vol. 6, no. 1, pp. 38-64.
- Mehra, B & Bilal, D 2007, 'International students' perceptions of their information seeking strategies', *Proceedings of the Annual Conference of Canadian Association for Information Science*, Canada, viewed 23 July 2015, <http://www.cais-acsi.ca/ojs/index.php/cais/article/view/712/468>.
- Midgley, W 2009, 'When we are at uni our minds are at home: Saudi students worrying about wives', In Fallon, F (eds), Paper presented to *20th International Student Advisers' Network of Australia/International Education Association Conference*, Canberra, ACT, pp.1-7.
- Morris, M & Teevan, J 2012, 'Exploring the complementary roles of social networks and search engines', *Human-Computer Interaction Consortium Workshop*, viewed 22 July 2015, <http://s3.amazonaws.com/academia.edu.documents/31056797/hcic12.pdf?AWSAccessKeyId=AKIAJ56TQJRTWSMTNPEA&Expires=1437541366&Signature=y%2FRHCvIY25Pu5daogvs4y9wR6QY%3D&response-content-disposition=inline>.
- Morris, M, Teevan, J & Panovich, K 2010, 'What do people ask their social networks, and why?: a survey study of status message q&a behavior', *Proceedings of the SIGCHI conference on Human factors in computing systems*, pp. 1739-1748.
- Neuman L. W 2006, *Social Research Methods: Qualitative and Quantitative Approaches*, 6th edn, London, Eng: Pearson.

Oshan, M 2007, 'Saudi women and the internet: gender and culture issues' PhD thesis, Loughborough University, viewed 13 January 2015, Loughborough University Institutional Repository.

Royal Embassy of Saudi Arabia 2015, *About Saudi Arabia*, viewed 23 July 2015, <https://www.saudiembassy.net/about/>

Sakr, A & Hasegawa-Johnson, M 2013, 'Topic modeling of phonetic Latin-spelled Arabic for the relative analysis of genre-dependent and dialect-dependent variation', *4th International Conference on Arabic Language Processing*, May 2-3, Morocco, vol. 20, no. 2, pp. 65-69.

Saudi Gazette 2014, 'Over 16000 Saudi students in Australia: Ambassador', *Saudi Gazette*, 6 November, viewed 23 July 2015, <http://www.saudigazette.com.sa/index.cfm?method=home.regcon&contentid=20141106223514>.

Saudi Gazette 2015, 'More women than men in university, says ministry', *Al Arabiya News*, 28 May, viewed 23 July 2015, <http://english.alarabiya.net/en/perspective/features/2015/05/28/More-women-than-men-in-Saudi-universities-says-ministry.html>.

Saw, G, Abbott, W, Donaghey, J, & McDonald, C 2013, 'Social media for international students - it's not all about Facebook', *Library Management*, vol. 34, no. 3, pp. 156-174.

Sawyer, R 2011, 'The impact of new social media on intercultural adaptation' Senior honors projects, University of Rhode Island, Kingston, viewed 22 July 2015, <http://digitalcommons.uri.edu/cgi/viewcontent.cgi?article=1230&context=srhonorsprog>. Accessed 22 July 2015.

Scarpino, J & Alshif, A 2013, 'The impact of social networks on Saudi residents living in the United States', *Issues in Information Systems*, vol. 14, no.1, pp.72-81.

Shi, N, Shi, K, Lee, K, Cheung, H & Chen 2010, 'The Continuance of Online Social Networks: How to Keep People Using Facebook?', *43rd Hawaii International Conference on System Sciences*, pp.1-10.

Sin, SC & Kim, KS 2013, 'International students' everyday life information seeking: The informational value of social networking sites', *Library & Information Science Research*, vol. 35, no. 2, pp. 107-116.

Sin, SC, Kim, KS, Yang, J, Park, JA, & Laugheed, ZT 2011, 'International students' acculturation information seeking: Personality information needs and uses', *Proceedings of the American Society for Information Science and Technology*, vol. 48, no.1, pp.1-4.

Smith, M, Nayda, R, & Rankin, E 2011, 'Assisting international students' adjustment to a new culture', *Nurse Educator*, vol. 36, no. 3, pp. 93-95.

Statista 2015a, *Penetration of leading social networks in Saudi Arabia as of 4th quarter 2014*, viewed 26 July 2015, <http://www.statista.com/statistics/284451/saudi-arabia-social-network-penetration/>.

Statista 2015b, *Leading social networks worldwide as of March 2015, ranked by numbers of active users (millions)*, viewed 25 July 2015, <http://www.statista.com/statistics/272014/global-social-networks-ranked-by-number-of-users/>.

Susilo, A 2014, 'Exploring Facebook and Whatsapp as supporting social network applications for English learning in higher education', Paper presented at *Conference on Professional Development in Education*, Widyatama University Indonesia, Bandung, Indonesia.

Thompson, P 2013, 'The digital natives as learners: Technology use patterns and approaches to learning', *Computers & Education*, vol. 65, pp. 12-33, viewed 20 July 2015, http://ac.els-cdn.com/S0360131513000225/1-s2.0-S0360131513000225-main.pdf?_tid=54dcec40-56a0-11e5-ac69-0000aacb361&acdnat=1441768412_7d8e59b4384e6040b84d4c604e2859d6.

Wang, S 2008, 'Assessing e-commerce systems success: a respecification and validation of the DeLone and McLean model of IS success', *Information Systems Journal*, vol.18, pp. 529-557.

Wu, H & Wang, M 2006, 'Measuring KMS success: A respecification of the DeLone and McLean's model', *Information & Management*, vol. 43, pp.728-739.