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An Investigative Analysis of Students' Use of Web 2.0 Applications at Albaha University

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Abstract

In recent years, the field of education has been significantly influenced by the unprecedented rise of digital technology, including web 2.0 applications. These platforms enable students to enter discussions, to engage with information, and to access diverse learning resources. This quantitative, experimental study examined the influence of students' use of web 2.0 applications in particular social networking applications on their university education at Albaha University in Saudi Arabia. A total of 242 students participated (male = 50.8 percent ; female = 49.2 percent) and there were significant gender differences regarding the use of social networking applications. Students tended to use smartphones more than other devices, and 74.6 percent of the students had used social networking applications for educational purposes. Additionally, average daily use of social networking applications was 4 to 6 hours. Interestingly, the students displayed good awareness of how to use social networking applications, and 79.3 percent had used these platforms for more than five years.

1   Introduction

The rise of the digital age, particularly following the emergence and first commercial applications of the Internet in the 1990s, had a transformative impact on the media landscape. Moreover, since the turn of the new millennium, the rapid advancement of Internet technology, including Web 2.0, gave rise to social networking applications (SNAs), which had an especially prominent effect on communications and media. As a matter of fact, SNAs are currently ubiquitous in almost all aspects of daily life and they are multifunctional in that they can be-and now are- used for diverse purposes, including communication, marketing, advertising, recruiting, and learning [13]. Although the definition of SNAs varies in the scholarly literature, the term is generally used to denote a set of online applications, relying on the underpinning of Web 2.0, that enable users to exchange and create multimedia content; that is, user-generated content (UGC). Recent studies [4-6] indicate that the use of new and emerging SNAs, including Facebook, YouTube, Twitter, and Instagram, can influence academic attainment, as well as other aspects of behavior, in students. SNAs are essentially tools for communication and information sharing within well-defined networks, and so it is natural that they are associated with concrete benefits [7-9]. It is noteworthy that educators can leverage many of these benefits and a growing number of students and teachers in primary, secondary, and tertiary institutions are integrating SNAs into routine pedagogy to add value and-in particular-to promote interactivity. A considerable body of evidence suggests that SNAs can streamline the communications that are so central to academic life, thereby enhancing the process of education. At the same time, given the continuously developing nature of digital technology, as well as the development of novel state-of-the-art software and hardware, SNAs are acquiring more features over time that enhance the value they can provide to students, educators, and other users. It is critical to use SNAs appropriately in an educational environment, especially in view of their benefits and limitations. For this reason, there is a strong demand for further research into the influence of SNA use in university education. Consequently, this research study investigated the use of SNAs among students at Albaha University in the Kingdom of Saudi Arabia (KSA). In particular, a sample of 242 students was recruited in order to gather data to address the following questions: Question 1: How do students use SNAs at Albaha University? Question 2: What devices do students use to connect to SNAs at Albaha University? Question 3: Why do students use SNAs at Albaha University? Question 4: What is the level of awareness of SNAs among

students at Albaha University? The paper is structured as follows: Section 1 introduces the study, discusses its significance, and presents the research questions; Section 2 describes relevant studies and establishes links between this study and others; Section 3 outlines the research methodology, which includes a detailed account of the data collection process; Section 4 discusses the findings; Section 5 presents the research implications, its contribution, and recommendations for future work.

2   Literature Review

The ubiquity of Internet-enabled consumer electronics, ranging from iPhones to tablet devices, has increased with the rising affordability and accessibility of digital hardware and software. Due to this, access to SNAs via Internet-enabled devices has increased around the world, including among students [10,11]. The literature [12,13] indicates that the purposes with which each user approaches any given SNA, of which there are many, tend to vary, including socialization, learning, or news [14,15]. In education, SNA adoption has occurred incrementally and over the years researchers have sought to gain insight into the impact of SNA use on aspects of academic life. For example, Feshchenko's research [16] examined Russian students (n = 375) from 25 universities, revealing that, for 95 percent of the students, SNAs had been used. Of these students, 28 percent and 41 percent of the time spent on SNAs was for research and entertainment purposes, respectively, whereas 24 percent was allocated to learning. Elsewhere in the literature [17], an India-based study examined SNA use among social science students at Aligarh Muslim University. The SNAs that the researchers selected were YouTube, Twitter, and Facebook, among others. In terms of the study's findings, it was noted that most students were aware of SNAs and that they used these platforms to assist in their academic work. The primary learning-related uses for SNAs, according to the students, were information sharing with fellow students, raising questions, and entering into discussions. Additionally, research focusing on students in higher education in Nigeria has been conducted [17] revealing that, even in this contrasting context, the use of SNA was substantial among students, especially for social cohesion and communication. It is also notable that a Malaysia-based research project [14] revealed that, via SNAs, those involved in academic life could conveniently exchange information-ranging from assignments to teaching material-with teachers outside of lessons. At the same time, the researchers highlighted

the importance of student groups on SNAs, which facilitate collaboration even with other universities and departments. The findings mentioned in previous studies indicate the important ways in which SNAs can facilitate teaching and learning, thus enhancing academic performance. As such, the use of SNAs in education, as well as identifying ways to support the use of this technology for educational purposes, is worthwhile. This study conducted an experiment to investigate the influence of SNAs on university students and to examine how students interact with SNAs. Notably, many higher education institutions still depend on traditional learning systems and they overlook the opportunities associated with using SNAs (e.g., improving global participation through collaborative learning). Therefore, addressing the context of SNA use at Albaha University, the present study contributes to the ongoing discussion surrounding the use of SNAs in higher education. In the rest of this paper, further concepts relevant to the study are examined.

2.1   Use and Application of Twitter in Education

Launched in 2006, Twitter is an SNA that has significant potential as a learning tool [18,19], especially in terms of facilitating lecturer-student communication [20]. For example, lecturers can share multimedia materials with their students using Twitter, they can establish groups, and they can bring like-minded students together to stimulate discussion. Twitter not only enables students to reflect and exchange information in an open forum, but it also opens a two-way communication channel between lecturers and students. Whether for sharing links, perspectives, or pithy thoughts [21], or whether for creating mind maps [22], Twitter can play a valuable role as an educational tool [23].

2.2   Use and Application of Facebook in Education

As the SNA with the largest global user base (approximately 400 million users), Facebook is distinctive in several respects [24]. This is especially the case in terms of the opportunities associated with this SNA to facilitate and enhance teaching and learning [25,26]. Students can discuss important topics on Facebook [27], and they can leverage the advanced communications infrastructure that this SNA offers to interact [28]. It is noteworthy that empirical studies that have evaluated the impact of Facebook use for educational purposes on academic attainment have yielded promising results [29]. The key features identified in [29] include opportunities for interactivity, es-

pecially compared to the limited chances that students have to discuss and engage in traditional classrooms.

2.3 Use and Application of WhatsApp in Education

WhatsApp is a mobile-based SNA that prioritizes secure, instantaneous messaging. It is commonly installed and used on smartphones. Critical advantages associated with WhatsApp [30,31] include the fact that it is freely available, easy to use, and reliable. Studies such as [32] indicate that students often benefit from WhatsApp's ability to permit close coordination, updating, and interaction [33]. In view of the above, it is clear that SNAs, despite their potential drawbacks, are important tools that can be leveraged in university education. Therefore, this study sought to investigate the influence of SNAs on students at Albaha University. Further details about how the research was conducted are given in the following section.

3 Methodology

3.1 Research Method

This study focused on the results of an experiment conducted on the students of Albaha University. This research was meant to comprehensively study and evaluate the effectiveness of the students use of SNAs and to analyze the level of participants' awareness and their experiences of using SNAs at the university. The research methodology included a survey approach to investigate the students' experiences of using SNAs at Albaha University. The participants of this study were Albaha University's students from different faculties. The research instrument was an online questionnaire created via Google Forms aimed at measuring the effectiveness of student's use of SNAs. The researcher applied for and successfully obtained ethical approval from the deanship of the scientific research of the university before distributing the questionnaire. The students were asked to fill out an online consent form before their participation. A total of 242 students from diverse faculties accepted to participate on this study, and further details of their results are discussed in depth in Section 4.

3.2 Data Analysis

Quantitative questionnaire data were analyzed using multiple statistical tests in SPSS. Cross-tabulation was undertaken to interrogate the connections between two or more variables, thereby facilitating an informative comparison. The t-test, a key technique in inferential statistics [34], was also performed to identify statistically substantial differences between the males and females in the sample.
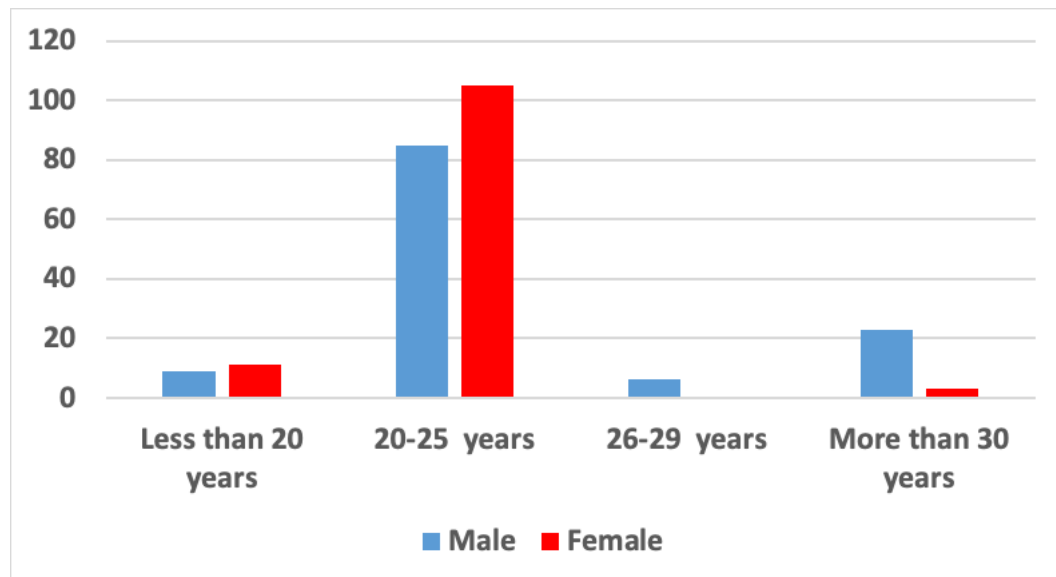
4 Results Discussions

4.1 Descriptive Statistical Data of the Participants

Figure 1: Gender and age distribution of the participants.

Figure 1 shows the details of the study's sample according to gender and age. A total of 242 students from three educational levels, including diploma, Bachelor's degree, and Master's degree, participated in this study and responded to the survey. Hence, analysis was conducted using the data collected from these 242 responses. The analysis revealed that a larger number of the respondents were male (male = 123; female = 119). Figure 1 shows that the majority of the respondents (male = 85; female = 105) were in the age group of 20 to 25 years, whereas there were less respondents aged

20 years or younger (male = 9; female = 11). Other respondents belonged to an age bracket of more than 30 years (male = 23; female = 3).

4.2 Descriptive Statistical Data of the Frequency of Use of Social Networking Applications by Students
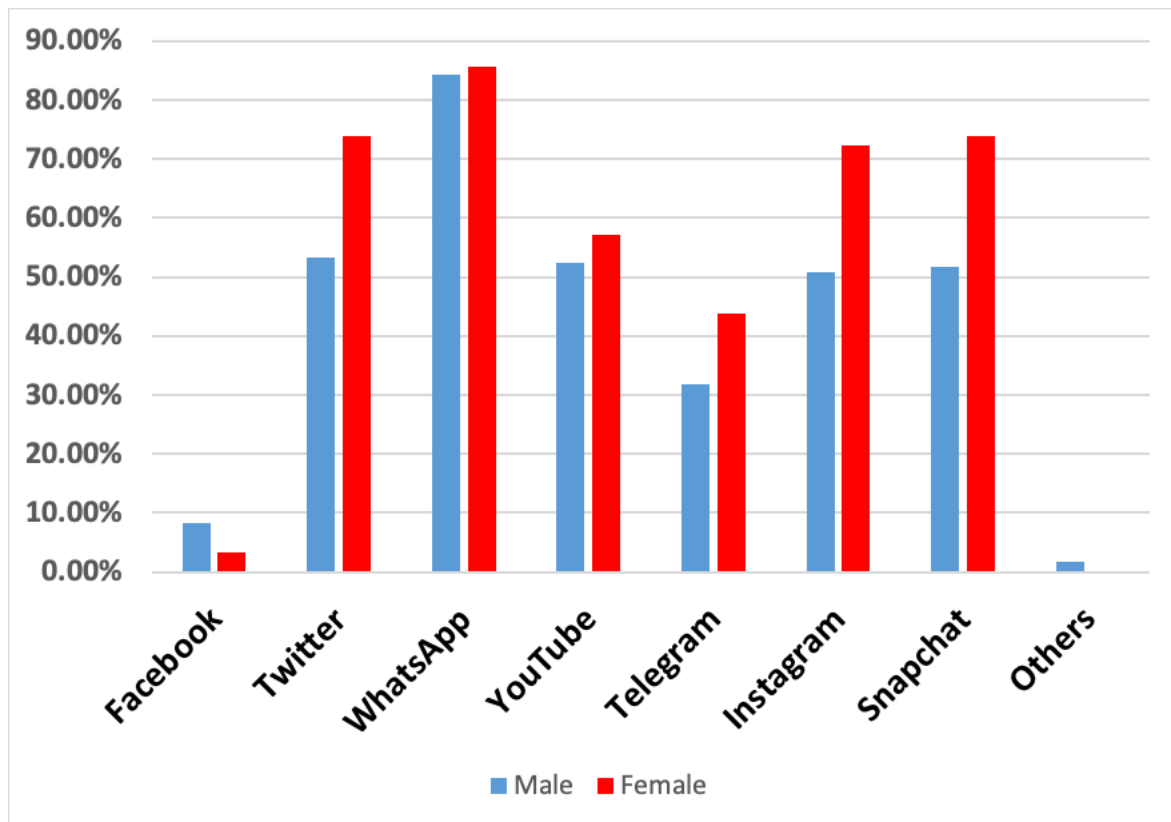

Figure 2: The percentage of the students who use social networking applications(SNAs).

The results in Figure 2 show the most preferable SNAs that students regularly like to use. It is no wonder that WhatsApp was the most popular application (84.9 percent), with male and female usage rates across a range of specialties being 84.2 percent and 85.7 percent, respectively. Twitter was the second most used application (63.6 percent). Interestingly, approximately 53.3 percent of the males compared to approximately 73.9 percent of the females used this SNA. In third place was Snapchat (62.8 percent), with

male usage rates at approximately 51.7 percent and females at 73.9 percent. Facebook only received 5.9 percent of the total votes, with rates of male use being 8.3 percent and of female use being 3.4 percent.

It can be noticed that both male and female students at Albaha University had a good awareness of using SNAs. The percentage of female students was higher than that of male students in terms of using SNAs. A t-test was used to indicate whether there was a statistical significance between male and female students in terms of using SNAs or not. The p-values were less than 0.000 indicate statistically significant differences in the use of SNAs between genders.

4.3 Descriptive Statistical Data of the Devices Used by Students to Connect to Social Networking Applications
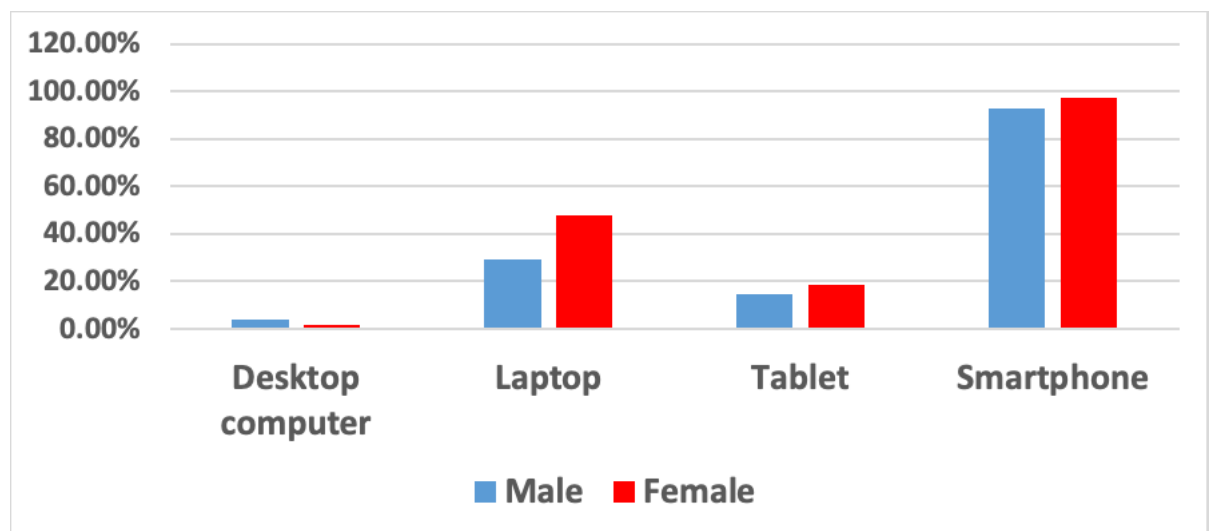

Figure 3: Devices used by students to connect to SNAs.

Figure 3 shows that the most favorable device used by students was a smartphone (95 percent). Interestingly, the percentages for female and male usage were very close (female = 97.5 percent; male = 92.7 percent). Meanwhile, laptop users accounted for approximately 38.4 percent (male = 29.3 percent; female = 47.9 percent). The least used device was a desktop computer, with only 2.9 percent (male = 4.1 percent; female = 1.7 percent), as

shown in Figure 3. It can be inferred that female students preferred using mobile devices such as a laptop, tablet, and smartphone, more so than male students, to connect to SNAs. A t-test was used to indicate whether there was a statistical significance between male and female students in terms of the devices used to connect to SNAs or not. The p-values(p = 0.004) indicate statistically significant differences in the devices used to connect to SNAs between male and female students.

4.4 Descriptive Statistical Data of Students' Reasons for Using Social Networking Applications
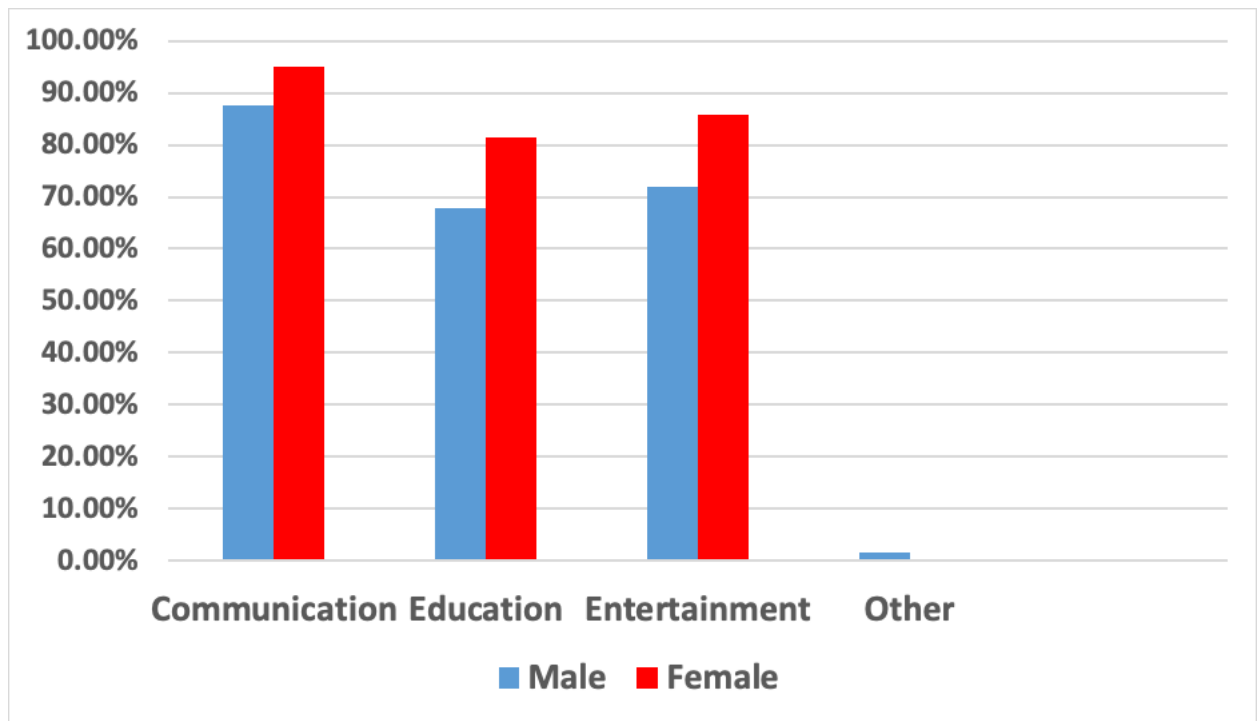

Figure 4: Students reasons for using SNAs.

Figure 4 shows that students are more likely to use social networks for communication purposes (91.3 percent). The rates of male and female users were somewhat different (male = 87.6 percent; female = 95 percent), as shown by Figure 4. The second most rated purpose was entertainment with 78.8 percent (male = 71.9 percent; female = 85.7 percent), followed by education with 74.6 percent (male = 67.8 percent; female = 67.8 percent). Thus, it

can be concluded that Albaha University students use SNAs for various reasons. The percentage of female students was reported as higher than male students for every purpose. The p-values(p = 0.003) indicate statistically significant differences in the reason for using SNAs between genders.

4.5 Descriptive Statistical Data of Students' Average Daily Use of Social Networking Applications
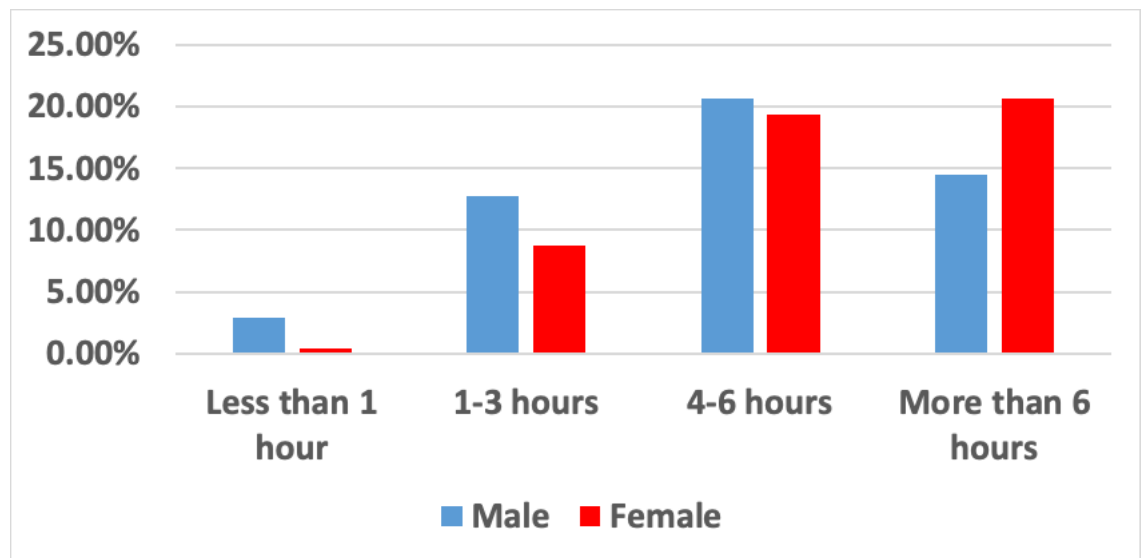

Figure 5: Students average daily use of SNAs.

The results in Figure 5 show that 40.1 percent of the students use SNAs 4-6 hours daily, with male and females being almost identical (male = 20.7 percent; female = 19.4 percent). Moreover, 35.1 percent of the students reported using SNAs more than 6 h a day (male = 14.5 percent; female = 20.7 percent). On the other hand, 3.3 percent of the students reported using SNAs less than 1 h a day. It can be noticed that most of the students reported using SNAs from 4 to 6 h, thus indicating the importance of SNAs in students' daily lives.

4.6 Descriptive Statistical Data of the Number of Years Using Social Networking Applications

The results in Figure 6 show that 79.3 percent of the students reported having used SNAs for more than 5 years, with male and female rates being almost equal (males = 38.8 percent; females = 40.5 percent). Moreover, 15.3 percent of the students reported having used SNAs for 3-4 years, with very similar rates between males and females (males = 7.9 percent; females = 7.4 percent). On the other hand, 1.2 percent of the students reported having used SNAs for less than 1 year; of these students, 0.8 percent were male and 0.4 percent were female. More importantly, it can be noticed from Figure 6 that a large number of male and female students reported having good experience using SNAs.
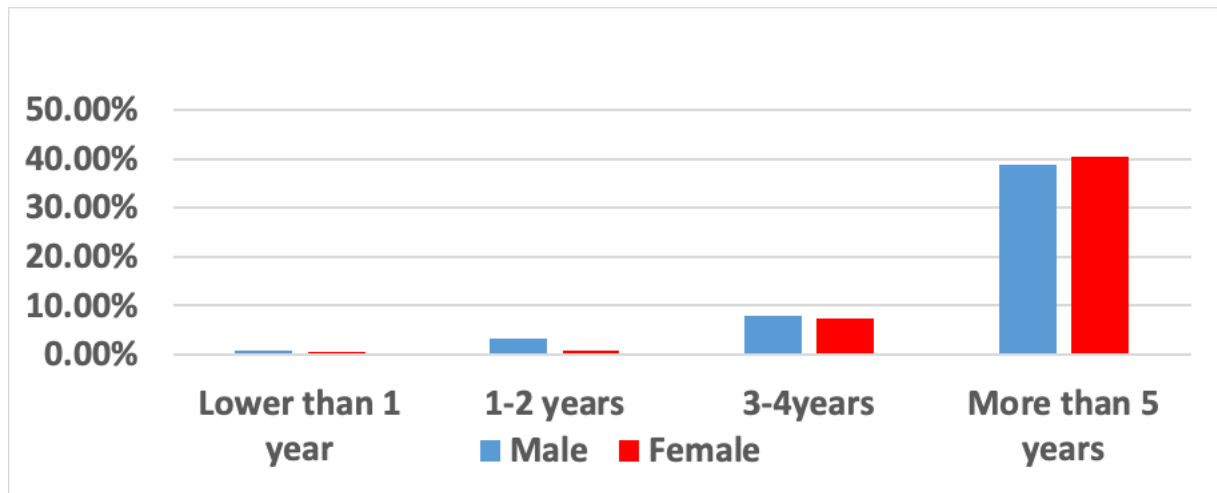

Figure 6: Number of years students have used SNAs.

5 Conclusions

The popularity and adoption of SNAs has risen substantially with the growth of Web 2.0 technology. Based on the results gathered in this study from 242 students at Albaha University, it was concluded that SNAs are pivotal in university education. Students are generally familiar and adept SNA users, and they leverage such platforms for various purposes (e.g., education, entertainment and socialization). Opportunities to integrate SNAs into enhanced

educational practices are attractive, and the results of this study demonstrate that these platforms are already contributing to an improvement in certain areas of academic and even personal life. In further research, perceptions of academic staff toward the use of SNAs and their educational applications will be examined at Albaha University.

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