Perceptions of Social Media Impact on Students' Social Behavior: A Comparison between Arts and Science Students

L. Al-Sharqi
K. Hashim
I. Kutbi

Center for Strategic Studies
King Abdulaziz University
Jeddah, Saudi Arabia

Abstract

Social media has become pervasive, impacting the social and cultural fabric of our society. It has revolutionized the way we communicate, interact and socialize. This study investigates differences and similarities of King Abdulaziz University (KAU) Arts and Science students' perceptions of social media impact on social behavior. Data were collected using a specially designed survey during the academic year 2013/2014. The sample size was 2605 male and female students of different ages. Research outcome indicates that students are familiar with and are immersed in social media use with Arts students being the heavier users of social media. Findings support the advantages of social media use on students' social behavior and do not indicate any obvious disadvantages. The findings include identification of dominant discipline-based and common perceptions. Differentiating factors include the Science group having interest in respecting opinions of others and the Arts group emphasizing on freedom of expression. Common perceptions on advantages include the ability to learn about people's different thinking styles, connect to others and communities, improve open-mindedness; and alleviate routineness and boredom. Common concerns include physical inactivity, exposure to negative ideas and bad company, unproductivity and distraction, introversion and mental dullness. These findings can help in providing solutions to mitigate concerns relating to the use of social media.

Keywords: Social media, social behavior, student perception, perception difference, higher education

1. Introduction

Social media has become pervasive, impacting the social fabric of our society and changing the nature of social relationships. It has revolutionized the way we communicate, interact and socialize. New technologies help facilitate and provide flexibility in communicating and sharing of resources. This new approach to consuming and creating information is in particular attractive to youths as a platform and space for activities not possible in the face-to-face context (Leea, Chena, Lia & Lin, 2015). However, excessive use of social media tools by college students has led to debate over whether or not it has changed the very shape and structure of students' social behavior and academic practices, and has thus caused leading educators to redefine their understanding of interpersonal communication and study dynamics (Junco, Merson & Salter, 2010).

Students use social media tools for many purposes such as access to information, group discussion, resource sharing and entertainment (Wang, Chen & Liang, 2011). This has generated speculation on their use and related positive and negative implications, in both the short and long terms. As several studies demonstrate, social media interaction could have positive and negative effects on students.

They can provide flexibility in learning, stimulate innovative ideas, and increase interpersonal relationships among students and instructors. These tools, however, can have negative impacts on students as they might distract their attention from the learning process, reduce their physical social interaction and make them potentially addictive.

Although many studies have investigated the impact of social media on college students' social behavior, few have focused on Saudi Arabia. Hence, this study should contribute valuable findings. Its purpose is to explore the impact of social media on students' social behavior. This quantitative study focuses on the common factors affecting KAU students' preferences and perceptions of the impact of social media on social behavior. A research questionnaire was designed to determine the factors that may affect students. Through analysis of the data, the study attempts to detect the positive and negative impacts and identify key themes, trends or perceptions that can be used as a foundation for more in-depth research.

The main contribution of the study lies in identifying differences and similarities on Arts and Science students' usage, preferences and perceptions of social media on social behavior, which can help in discerning positive and negative factors. Given the present limitation of available data on students' use of social media, the data gathered provide valuable source of information, as they offer a deeper insight into students' association with the new media.

2. Literature Review

In a survey conducted by Bagget and Williams (2012), students agree that social media is a means to connect between individuals and is used as means to share common interests. Social media represents useful tools for communication and education, and provides an opportunity for networking in any profession. With time constraints and demanding class schedules, social media helps students to multitask because they do not want to spend time creating multiple individual messages. They commonly use Facebook, watch television or a video, talk, email friends and family, and write papers or conduct research all at the same time.

A study by Velenzuela, Park and Kee (2008) supports the notion that both the medium technological capabilities as well as the actual content it transmits influence people's attitudes and behaviors. In this study two major general observations were made: a) online social networks are effective structures for connecting people, allowing them to create content and participate in public affairs in a meaningful way; and b: social networks are not just a place to spend time in but are useful tools for collective action.

A study by Sponsil and Gitimu (2013) investigating the effect of social media on self-concept reports that college students either believe that social media websites affect their self-esteem positively or neither positively or negatively. In development to adulthood, one tries to define his/her identity. A study done by Pempik, Yermolayeva and Calvert (2009) indicates that photos and their rapid dissemination to students' online profiles reflect the important role played by technology in the development of youth identity. Gathering feedback from peers and strengthening the bonds of friendship are also part of the developmental challenges of emerging adulthood.

Another study done by Benage (2011) indicates that overall college students do not see social media as limiting their identities or falsifying the identity information shared online, but rather view social media as a tool for expressing their identities, although some parts of identity are held back in online interactions. This means that, although it is not readily apparent to the creators of social media pages, identities of students are being split to fit into the restricted space of social media.

In a study exploring how students use social media, Wang, Chen and Liang (2011) report that most college students spent vast number of hours accessing social media sites. Ninety percent of students surveyed spent their time on entertainment. While eighty percent of the sample admitted that they posted or responded while completing homework, not too many college students preferred using social media to do their homework. Considering the overall results of collected data analysis, there was a negative attitude towards social media when college students used them. The analysis also indicates that an approach is needed to better balance the relationship between social media and academic study.

The frequent use of Facebook could cause addiction toward the site and influence students' daily life at large. A study by Zainudin, Omar, Bolong and Osman (2011) was conducted to identify the relationship between female students' motives for Facebook use and Facebook addiction.

Five motives established were social interaction, passing time, entertainment, companionship, and communication. The findings of the study showed that there are significant relationship between female students' motives for Facebook use and Facebook addiction. The research concluded that the five motives established were among the major contributors to the addiction of Facebook.

Madge, Meek, Wellens and Hooley (2009) report on a study conducted with first year undergraduates at a British university using an online survey. Students reported that they specifically joined *Facebook* pre-registration as a means of making new friends at university, as well as keeping in touch with friends and family at home. The survey data also reveal that once at university, *Facebook* was a social element that helped students settle into university life. Students thought Facebook was used most importantly for social reasons.

Liu (2010) studied students' use, attitudes and perceptions of 16 different social media tools through an online questionnaire involving 221 students. The top four reasons that prompted students' use of social media tools were found to be social engagement (85%), direct communications (56%), speed of feedback/results (48%), and relationship building (47%).

3. Research Methodology

This study used both primary and secondary sources of data. The secondary data were from the literature review described above. The primary data were collected through questionnaires administered to randomly selected respondents representing a sample of university students from various academic disciplines of KAU. The research team designed and fine-tuned the survey instrument, and conducted a workshop to obtain the opinion of administrators, instructors and students on which topics to include.

The survey included a total of 2605 full-time undergraduate students who were randomly selected from various colleges of KAU. The target students represented a homogeneous mix (male/female), different age groups (20 years and over or under 20 years of age) and disciplines to sufficiently preserve optimal diversity within the collected data required for subsequent analysis.

The survey outcome maintained 95 percent confidence level with a confidence interval of 4 percent. The questionnaire was pre-tested and revised by several senior university faculty members, who, specializing in sampling and questionnaire design, made modifications to enhance clarity. It was then pilot tested, using a version that contained the questions in both English and Arabic languages, to provide a survey questionnaire in dual languages for ease of understanding. Based on the target numbers, copies of the questionnaire were then distributed.

Completed responses were collated and submitted to coordinators. A statistician was engaged to ensure that processing of data was done properly. Data were coded and processed into SPSS, a statistical package system. Results were analyzed and summarized, in order to draw conclusions and make recommendations.

The raw data from the returned questionnaires were then coded and entered into the statistical system. The data were explored both for their descriptive statistics (i.e. calculation of percentage distributions, frequency distributions, calculations of averages, and coefficient of variation) and inferential statistics (i.e. level of significance, t-test, z-test, ANOVA, correlation and regression and classification analysis). Cronbach's Alpha was also used to provide indications of internal consistency.

The questionnaire was divided into four parts. In the first part, students were requested to respond to general and demographic questions about their gender, age, and field of specialization. Respondents were also asked about their level of association with the Internet and social media use. The second part provided more specific questions on the types of social media respondents use and the purposes for which they use social media. The third part addressed questions related to respondents' perspectives on the benefits of social media use on social behavior while the fourth part focused on their views on the negative aspects.

4. Results and Discussion

A total of 2605 Arts and Science students participated in the survey pertaining to social media impact on social behavior of students. The total sample size meant an acceptable error of ±4% at 95 percent confidence level for the university population. The overall sample included 1418 males and 1187 females. In terms of gender, the sample population comprised 54 percent male and 46 percent female students. The majority of student respondents (68.8%) were aged 20 years and above.

In investigating significant difference, the Pearson Chi-square test of independence is used. If chi-square results are significant, post-hoc analysis is then conducted for identifying significant differences at the 0.05 level through column proportions z-tests approach (adjust p-values for multiple comparisons Bonferroni method).

4.1 Sample breakdown based on demographic factors

The sampled gender and age cohorts provide a consistent representative sample of the ratios of the overall KAU student population. From the Science group, 59 percent are males and 41 percent are females while in the Arts group, 48 percent are males and 52 percent are females. Both the groups have more respondents from the '20 years or more' category with the Science group having 76 percent and the Arts group having 60 percent. The breakdown given in Table 1 includes the colleges classified under the two college groups.

4.2 KAU students' background on the Internet and social media

The survey included some questions designed to provide information about KAU students' background in using the Internet and social media. These questions are shown in Table 2, together with their corresponding responses. The responses indicated that KAU students are familiar with and are immersed in the Internet and social media use.

The majority of students from the Science and Arts colleges are using internet for 10 hours or more per week. The major category for Science group is the '15 hours or more' category while for the Arts group, it is the '5 to less than 10 hours' category. This indicates that Science students are dominant in the highest category. The value of the Pearson Chi-Square is significant at p less than 0.01. Hence, the responses are significantly different. Post-hoc analysis indicates that the proportion of Arts students under category '5 to less than 10 hours' is greater than the proportion of Science students.

More than 90% students of Science and Arts colleges have a personal social media account. The value of the Pearson Chi-Square has p greater than 0.01. Hence, the responses are not significantly different. On the average number of hours students spend using social media per week, for both college groups, results indicate that the majority of students use social media for 6 hours or more per week. The major category for the Science and Arts groups is the '10 hours or more' category. The value of the Pearson Chi-Square is significant at p less than 0.01. Hence, the responses have strong significant difference. Post-hoc analysis indicates that the proportion of Science students under category 'less than 3 hours' is greater than the proportion of Arts students. On a similar note, the proportion of Arts students under the category 'from *10 hours or more'* is greater than the proportion of Science students. This indicates that Arts students are dominant in the highest category of social media usage.

More than 50 percent of students from both the college groups have been using social media tools for more than 3 years. The value of the Pearson Chi-Square is significant at p less than 0.01. Hence, the responses have strong significant difference. Post-hoc analysis indicates that the proportion of Science students under the category 'less than 1 year' is greater than the proportion of Arts students. This shows that Arts students are more matured than Science students in terms of duration of social media usage.

These findings reflect the maturity of KAU students regarding use of the Internet and social media. These also agree with findings from previous studies (Alshareef, 2013; Pempek et al, 2009). Pempek and his co-researchers found that college students' social networking experiences are high. The study conducted by Alshareef (2013) on the effects of Web 2.0 and social networks on students' performance in online education in KAU also showed a good level of experience in using social media.

On the preferred language when visiting or using social media, the majority of students from both college groups selected category 'Both' (English and Arabic languages). This indicates that students of both college groups are mostly bilingual in their use of social media. The value of the Pearson Chi-Square is significant at p less than 0.01. Hence, the responses have strong significant difference. Post-hoc analysis indicates that the proportion of responses under category 'Both' for the Science students is greater than the proportion of responses for the Arts students. This indicates a bigger proportion of Science students prefer both languages. On the same note, the proportion of Arts students is greater than the proportion of Science students under the 'Arabic' category. This indicates that a bigger proportion of Arts students prefer Arabic language only.

4.3 KAU students' preferred social media tools

We sought to answer the questions related to social media tools most commonly used by students. Figure 1 shows the distribution of social media tools per type of college. The survey question was of multiple response type. From the figure we note that the density of KAU students' usage of social media differs much. Amongst the students of Science and Arts colleges, the highest categories of social media tool usage are 'YouTube' followed by 'Twitter' and then 'Facebook'. This finding is in contrast to findings of a recent survey (Guimaraes, 2014) where Facebook remains the top social network for the U.S.

The value of the Pearson Chi-Square is significant at p less than 0.01 suggesting that there exists a strong association between the social media tools and the college groups. Post-hoc analysis indicates categories 'Facebook' and 'Wikipedia' have greater proportions of responses by the Science students than the Arts students and that these differences are significant at the 0.05 level. Categories 'Twitter', 'YouTube', 'Flickr', 'Instagram' and 'Delicious' have greater proportions of responses by the Arts students than the Science students and these differences are significant at the 0.05 level. This indicates that the Science students are heavier users of Facebook and Wikipedia while the Arts students are dominant in usage of Twitter, YouTube, Flickr, Instagram and Delicious.

4.4 Purposes on usage of Social Media

Figure 2 shows the results on purposes that students use social media for. It shows the distribution of students sample as per the most common purposes. The survey question was of multiple response type. The figure reveals that KAU students use social media tools for a blend of academic and non-academic purposes. Category 'Entertainment' represents the highest category for both college groups with about 79 percent. Second highest is category 'Information searching' and the third highest is category 'Learning' for both groups. It is worthwhile to note that the responses for categories 'Searching for information' and 'Learning' are both above 60 percent for both groups. This indicates a moderately high percentage of students use social media for learning. These findings are in contrast to the conclusion made by Ahmed and Qazi (2011) which states that social network sites are mainly used for non-academic purposes by students. The value of the Pearson Chi-Square has p less than 0.01. This means that there are no significant differences among the responses across the Science and Arts groups.

4.5 KAU Arts and Science students' perceptions of social media usage on social behavior

The remaining portion of the questionnaire was designed to investigate KAU Arts and Science students' perceptions regarding the following: a) rating a set of 14 statements as benefits (advantages) of social media usage on social behavior; and b) rating a set of 8 statements as problems (disadvantages) of social media usage on social behavior. Data regarding perceptions on the advantages and disadvantages were collected using a five-point Likert level of agreement scale. The variation in opinions is low based on the coefficient of variation for all statements. This indicates that students are aware of the advantages and disadvantages of using social media on social behavior.

Table 3 shows the overall rating of responses on the two factors, advantages and disadvantages. Based on Table 4 which provides the mean and corresponding agreement attitude, the mean values for factor advantages of both groups, Arts and Science, are of attitude 'Agree' while the mean values for factor disadvantages for both groups are of attitude 'Unsure'. This indicates that both groups agree with the advantages but are unsure of the disadvantages. Cronbach's alpha (α) was used to test for reliability of results. The study factors are reliable as shown in Table 5 by Cronbach's alpha values of 87 percent and above.

4.5.1 Investigation of dominant issues pertaining to advantages of using social media on social behavior

Out of the items under each factor, we selected the top five sub-factors by mean values from both groups and combined them into a comparison list. This helps identify support factors on social media use impacting social behavior of students. The summary for perceptions of advantages is given in Table 6.

Table 6 shows the combined top five perceptions of the two groups with mean values pertaining to advantages to social behavior. It highlights four common factors listed below in decreasing priority (order of means):
- Learn about people's different thinking styles
- Connect to others and communities
- Improve ability to be open-minded
- Alleviate feeling of routine and boredom

It is interesting to note that students believe that through the use of social media they are able to learn about people's different thinking styles, connect to others and communities, improve ability to be open-minded and alleviate feeling of routine and boredom. It is also worth noting that two uncommon factors is the factor 'Respect opinions of others' of the Science group and the factor 'Express views freely without social and personal obligation' of the Arts group. Here we can see the difference in emphasis and priority of the two groups with the Science group having interest in respecting opinions of others while the Arts group emphasizes freedom of expression. The Arts group has dominant perceptions (higher means) over the Science group relating to advantages on all the common factors discussed except for the factor pertaining to learning about people's different thinking styles.

4.5.2 Investigation of dominant issues pertaining to disadvantages of using social media on social behavior

Out of the items under each factor, we selected the top five sub-factors by mean values from both groups and combined them into a comparison list. This helps highlight potential problems in using social media on social behavior. The summary for sub-factors on disadvantages is given in Table 7.

Table 7 shows the combined top five sub-factors of the two groups with mean values pertaining to disadvantages on social behavior. It highlights five common factors listed below in decreasing priority (order of means):

- Make students become physically inactive
- Expose students to negative ideas and bad people
- Cause unproductivity and distraction from everyday life activities
- Cause students to become less sociable
- Make students become mentally dull

It is worth noting that the top five concerns for both groups are represented by the same factors but with a difference in the order of priority. It is interesting to note that the top three concerns relate to physical inactivity, exposure to negative ideas and bad company; and unproductivity and distraction. The Science group has dominant perceptions (higher means) over Arts group relating to disadvantages on social behavior on all the common factors discussed except for the factor pertaining to mental dullness.

5. Conclusions

KAU students are familiar with and use different categories of social media. Amongst the students of Science and Arts colleges, the highest categories of social media tool usage are 'YouTube' followed by 'Twitter' and then 'Facebook'. KAU students use social media tools for a blend of academic and non-academic purposes. Category 'Entertainment' represents the highest category for both college groups with about 79 percent. Second highest is category 'Information searching' and the third highest is category 'Learning' for both groups.

Students agree on the advantages of social media on social behavior but are unsure of the disadvantages. This paper captured the perceptions of each group. Common perception on advantages include ability to learn about people's different thinking styles, connect to others and communities, improve open-mindedness and alleviate feeling of routineness and boredom. Uncommon factors include the Science group having interest in respecting opinions of others while the Arts group emphasizes freedom of expression. Common concerns include physical inactivity, exposure to negative ideas and bad company, unproductivity and distraction, introversion and mental dullness. These findings can help identify possible strategies to mitigate concerns identified by the students.

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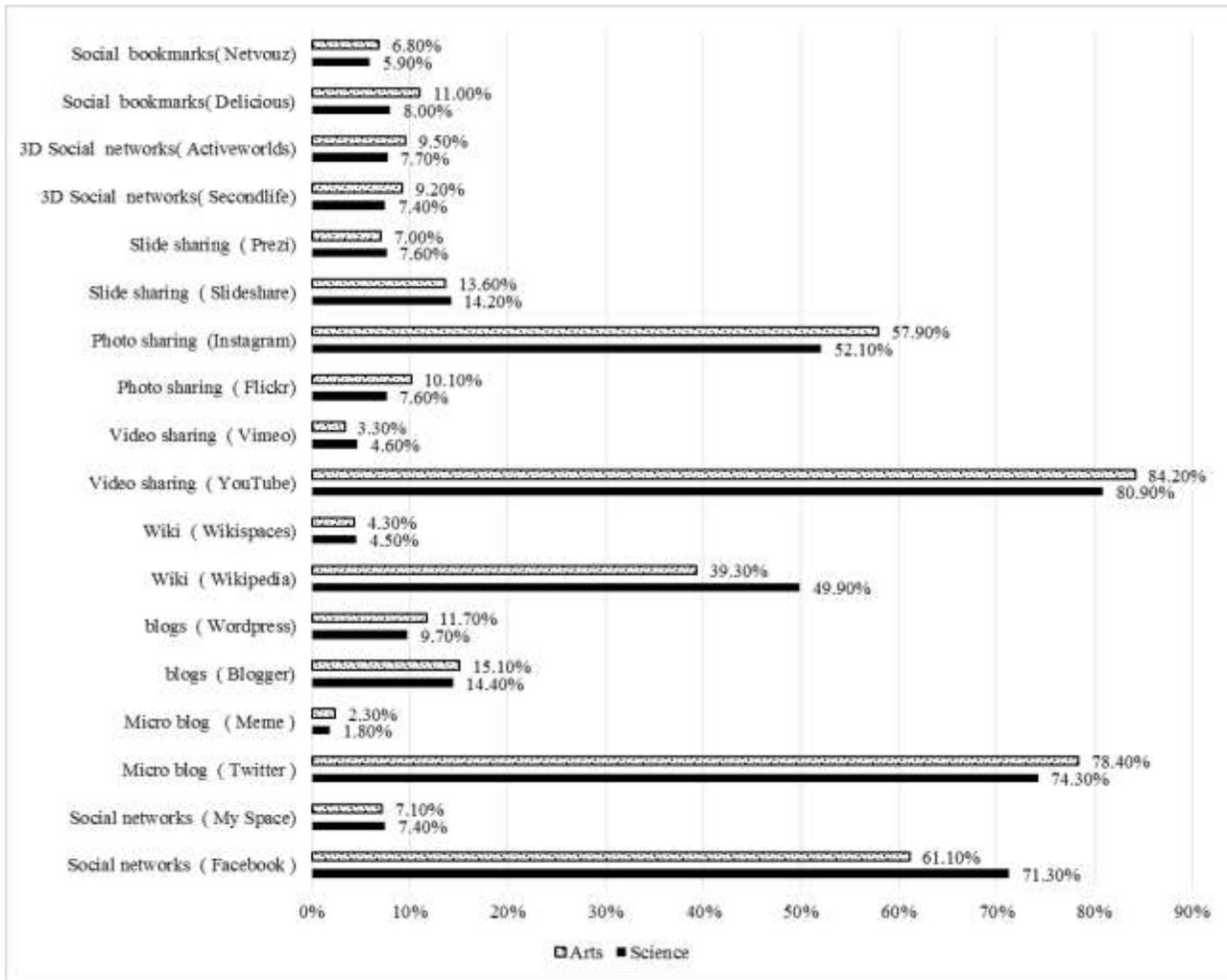
Figure 1. Distribution of social media tools under social media categories per type of college
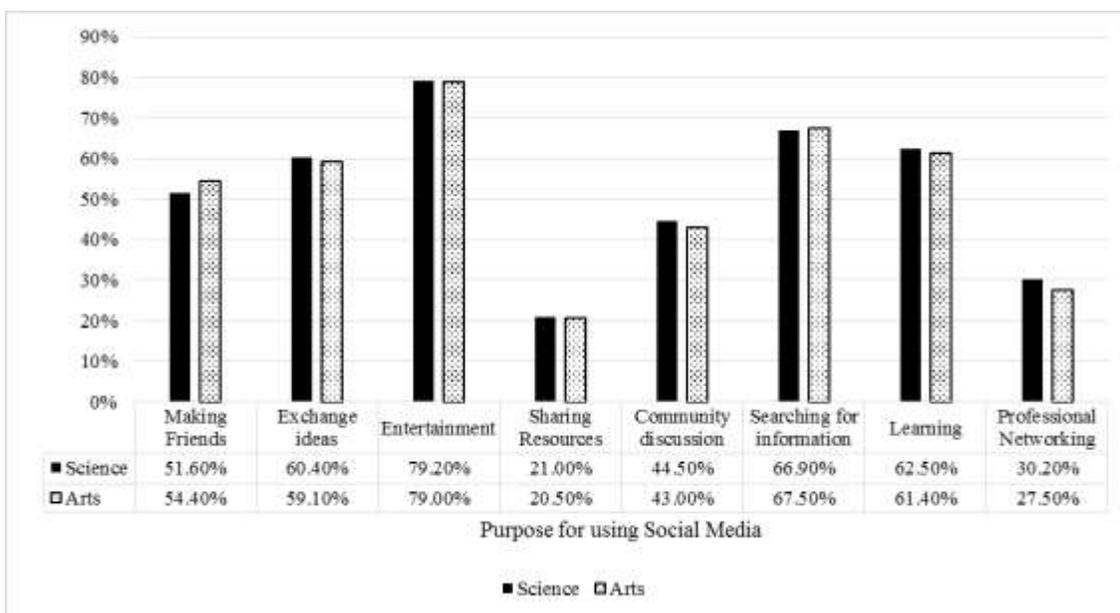

Figure 2. Distribution on purposes of social media usage under type of colleges

Table 1. Sample breakdown based on demographic factors

		Science			Arts		
		Count	Row N%	Column N%	Count	Row N %	Column N %
Gender	Male	867	61.1%	59.3%	551	38.9%	48.2%
	Female	594	50.0%	40.7%	593	50.0%	51.8%
	Total	1461	56.1%	100.0%	1144	43.9%	100.0%
Age	less than 20	351	43.1%	24.0%	463	56.9%	40.5%
	20 or more	1110	62.0%	76.0%	681	38.0%	59.5%
	Total	1461	56.1%	100.0%	1144	43.9%	100.0%
College	Engineering	265		18.1%			
	Science, IT and Seas	299		20.5%			
	Environmental, weather and Earth Sciences*	183		12.5%			
	Public health	477		32.6%			
	Home Econ*	237		16.2%			
	Arts & Media				451		39.4%
	Economics				72		6.3%
	Education (Branch)				218		19.1%
	Language and Pre college				403		35.2%
	Total	1461	56.1%	100.0%	1144	43.9%	100.0%

*Colleges attended by either males or females, but not both

Table 2. KAU students' background in Internet and social media

		Science		Arts	
		Count	%	Count	%
On average how many hours do you spend using the Internet per week?	less than 5	358	24.5%	247	21.6%
	from 5 to less than 10	342	23.4%	324	28.3%
	from 10 to less than 15	348	23.8%	258	22.6%
	15 hours or more	413	28.3%	315	27.5%
Do you currently have a personal social media account?	Yes	1381	94.5%	1087	95.0%
	No	80	5.5%	57	5.0%
On average how many hours do you spend using social media per week?	none	80	5.5%	57	5.0%
	less than 3	277	19.0%	146	12.8%
	from 3 to less than 6	311	21.3%	266	23.3%
	from 6 to less than 10	363	24.8%	288	25.2%
	10 hours or more	430	29.4%	387	33.8%
Using social media for?	none	83	5.7%	60	5.2%
	less than 1 year	180	12.3%	78	6.8%
	1-3 years	430	29.4%	376	32.9%
	more than 3 years	768	52.6%	630	55.1%
Which language do you prefer when you visit Social Media?	English	104	7.3%	90	8.0%
	Arabic	542	38.2%	481	42.8%
	Both	771	54.4%	553	49.2%

Table 3. Mean distribution over factors for advantages and disadvantages

Study factor	*Science Mean*	*Arts Mean*
Advantages of social media use on social behavior	3.77	3.82
Disadvantages of social media use on social behavior	2.81	2.85

Table 4. Mean and corresponding agreement attitude

Value of weighted mean	Agreement attitude
From 1 to 1.79	Strongly Disagree
From 1.80 to 2.59	Disagree
From 2.60 to 3.39	Unsure
From 3.40 to 4.19	Agree
From 4.20 to 5	Strongly Agree

Table 5. Cronbach's alpha for the study factors

Study factor	No. of items	Science	Arts
Advantages of social media use on social behavior	14	0.929	0.919
Disadvantages of social media use on social behavior	8	0.873	0.868

Table 6. Summary table for combined top five sub-factors on advantages of using social media on social behavior

Factor	Science		Arts	
	Mean	Position Within Top 5	Mean	Position Within Top 5
Respect opinions of others	3.83	5	3.87	
Improve ability to be open-minded	3.89	2	3.93	3
Connect to others and communities	3.86	3	3.97	1
Learn about people's different thinking styles	3.98	1	3.96	2
Alleviate my feeling of routine and boredom	3.86	3	3.93	4
Express views freely without social and personal obligation	3.81		3.88	5

Table 7. Summary table for combined top five sub-factors on disadvantages of using social media on social behavior

Factor	Science		Arts	
	Mean	Position Within Top 5	Mean	Position Within Top 5
Cause unproductivity and distraction from everyday life activities	3.05	3	3.03	2
Exposure to negative ideas and bad people	3.08	2	3.02	3
Cause students to become less sociable	3.05	3	2.92	5
Make students become physically inactive	3.39	1	3.31	1
Make students become mentally dull	2.96	5	2.97	4