

Exploring People in Social Networking Sites: A Comprehensive Analysis of Social Networking Sites

Saleh Albelwi

Ph.D Candidate in Computer Science
School of Engineering
University of Bridgeport
126 Park Ave
Bridgeport, CT 06604

Khaled Almgren

Ph.D Candidate in Computer Science
School of Engineering
University of Bridgeport
126 Park Ave
Bridgeport, CT 06604

Abstract

The purpose of this paper is to make comparisons between Facebook users who are living in the US and those who are living in the Middle East. These comparisons include demographical properties, interests, gender, marital status, age, education level, incentive of relationship, and distribution of friends, as well as an investigation of whether users who have both a Facebook and a MySpace account have the same or different friends in each network and why. Making comparisons between users requires collecting users' profiles on Facebook and MySpace. Therefore, I created two online applications written using JavaScript API and PHP. These applications were deployed on Facebook and MySpace, and they have the ability to access a user's profile and friends on those social networking sites and then to store the information in a database. A large volume of data was collected that represents millions of users. Analyzing the collected data will give researchers insight into the features of Facebook users in different cultures. In addition, it will tell us whether a user has the same or different friends across SNSs and explain why some people create an account with more than one SNS. The findings show that there are many differences between the users of Facebook in the USA and the users in the Middle East. Some of the characteristics are different due to the difference in culture and customs. There are some unexpected results, such as the fact that MySpace is not popular in the Middle East. In addition, there are people who have an account with Facebook and an account with MySpace at the same time. The study found that some people have different friends on different SNSs, and others have the same friends. Overall, I have made deep investigations in this paper.

Key Words: Social Networking sites (SNSs), OpenSocial API, Profiles

Introduction

The main aim of Web 2.0 is socialization [1]. Therefore, web developer companies have focused on launching new technologies that support the collaboration between users and groups. This has led to the emergence of hundreds of social networking sites (SNSs), such as Facebook, Friendster, Twitter, Ning, LinkedIn, and MySpace[2, 3]. In the last years, social networking sites (SNSs) have become popular and have attracted the attention of over one billion people throughout the world [4]. SNSs give facilities to users to share information and files and maintain relationships with friends, and this gives privileges to users to access their friends' resources and connection channels, such as blogs, sending messages and comments, room chat, gaining updates on friends' activities, such as adding photos, and sharing interests [4, 5].

Social networking sites can be defined as “web-based services that allow individuals to (1) construct a public or semi-public profile within a bounded system, (2) articulate a list of other users within whom they share a connection, and (3) view and traverse their list of connections and those made by others within their system.” [2] SNSs have implemented many technical features; for example, profiles to define the users identity for others.

A profile can be defined as unique pages for users [6]. In the early days of SNSs, they were used for creating social relationships only, but now they have become a perfect business service, such as LinkedIn, as well as many companies that have started to advertise their products through SNS [7]. SNS users are involved in education, so they have played a major role in improving communication between students and faculty in the universities [8]. In 2007, Google released a new technology called OpenSocial, which can be defined as a set of Application Programming Interfaces (APIs) for developing social applications.

The advantage of APIs is that they allow programmers to access user profiles, friends and shared activities [9]. A lot of SNSs are supporting OpenSocial including MySpace, Hi5, and Orkut[10].

Motivations

As mentioned previously, people present themselves in their profiles. Getting the profiles of users will give us a depiction of the features of users in the SNS, such as demographical characteristics, gender, location, interests, education level, age, etc. Generally, gathering information of users will give us insight into the features of users in the SNS. Analysis of the collected data will assist the researchers in understanding how the SNS grows and the motivations that encourage the users to share the SNS and to sign up with the SNS. In addition, it will provide us with more details and statistics about the distribution of characteristics of users. We will learn about the different motivations among different cultures for choosing to join a certain SNS, such as different backgrounds and cultures. There are many research studies available for studying the characteristics of Facebook and MySpace users [11], but most of them focused on the comparisons between users in the USA and users in Europe or make general comparisons between Facebook and MySpace users [12, 13].

The motivation for choosing Facebook is that Facebook is the most popular SNS in the world. Facebook has over one billion registered users [14]. In addition, the motivation for choosing MySpace is to compare between friends or the same users in different SNSs. This is because MySpace was the second most popular site in the USA in 2006 [7].

Research Method

In order to make comparisons between Facebook and MySpace users, it is essential to get the information about the users in each of their worlds. Therefore, to collect the users' information in MySpace, I built an online application. This application, written using OpenSocial API, has the ability to access users' profiles and friends and extract this information and store it in the MySQL database. This application is deployed in the MySpace application; when any user adds this application, it will automatically be stored in my database. Regarding Facebook users, I created another online application, written using PHP, which has the same characteristics as the MySpace application, and it is used to access the user profiles and friends on Facebook. The difference between the Facebook application and the MySpace application is the program language because Facebook does not support OpenSocial API. The data can be accessed by the application, as presented in Figure 1.

After collecting information of users and friends, it will be easy to classify the data into three main parts. The first part consists of information about people who live in the USA. The second part consists of information about people who live in the Middle East. Finally, the third part consists of information about people who have an account with both Facebook and MySpace. Then, this requires analyzing the collected data and getting results that are presented through detailed statistics and discussion.

Regarding the privacy of users' information, I collected my sample only from people who make their information public. In addition, on the main page of the application, I wrote the idea behind the application and I clarified that this application will access the user profile and friends.

Data Analysis And Findings

I collected 4,520 samples of users on Facebook, but the study will focus on comparisons of Facebook users only in the USA and the Middle East. After classification by country, I was left with 1,871 samples of users' Facebook information.

Table 1 shows the percentage of distribution of users' locations. As expected, the popularity of Facebook in the USA is high, but unexpectedly, the percentage of users in the Middle East (43%) is nearly as high as the popularity in the USA. When I classified the users who have an account with both Facebook and MySpace, I found that 92% of the users are from the USA.

I found little popularity for MySpace in the Middle Eastern countries (9%). The popularity of MySpace in the USA, however, is high because MySpace was the second largest SNS in the USA in 2006.

	Facebook	MySpace
USA	57%	92%
Middle Eastern countries	43%	8%

Figure 1 illustrates the age ranges.

A plurality of USA users (36%) are between the ages of 18 to 24 years. This clarified that a plurality of Facebook users are students, but it is unexpected that the majority of users in the Middle East (42%) are between 25 and 35. In addition, more than 8% of users in the USA are over 55 years, but Facebook is not preferred by people over 55 in the Middle East. The figure also shows that Facebook is used in different age groups.

Table 1: Distribution of users' location

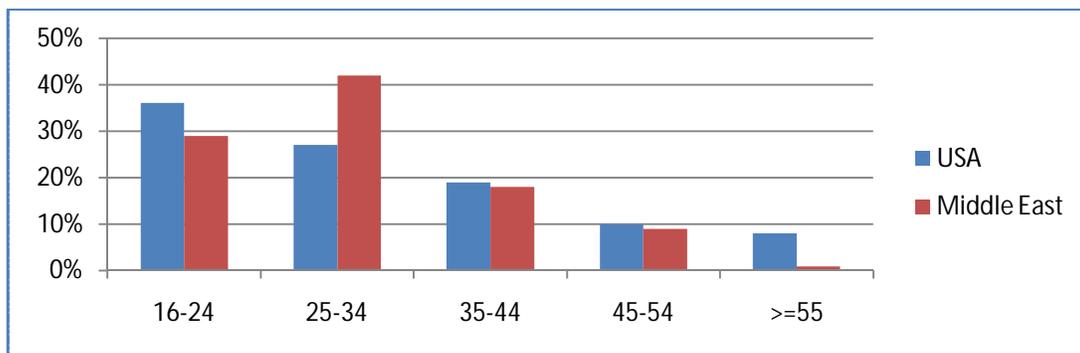


Figure 1: Distribution of ages on Facebook

Figure 2 shows the distributions of users' gender in the USA and Middle East. Facebook is popular for both males and females in the USA, but in the Middle East, Facebook is more popular for males (68%) than females (32%). The difference in culture makes the percentage of female users in the Middle East lower.

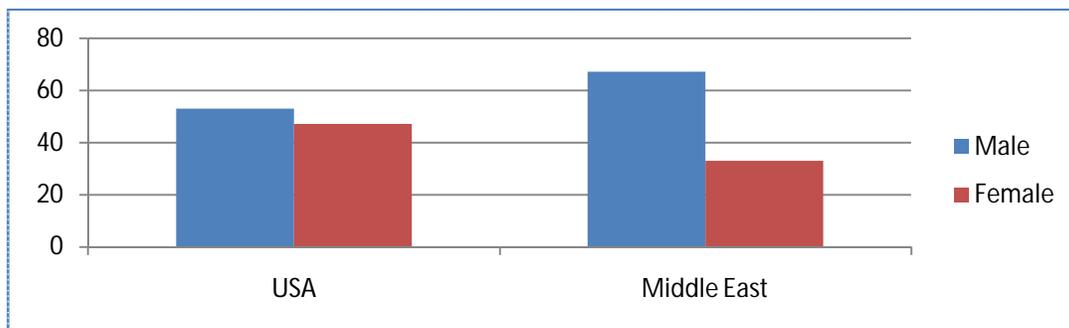


Figure 2: Distribution of Gender on Facebook

One goal of Facebook is creating friendship with other people. The statistics show that the average number of Facebook friends for users in the USA is over 200, and the average number of friends for users in the Middle East is about 72. Thus, the average number of friends of users in the USA is very high compared with the average number of friends of users in the Middle East.

Figure 3 reports the marital status of users on Facebook. According to this figure, the majority of USA users are single (49%), but in the Middle East, the majority of users are married. Single users in the Middle East represent about 43% of all users, but this is still high because users who defined themselves as in a relationship account for only 1%, compared with 19% in the USA. The number of people who defined themselves as divorced in the USA and the Middle East is equal at about 5%.

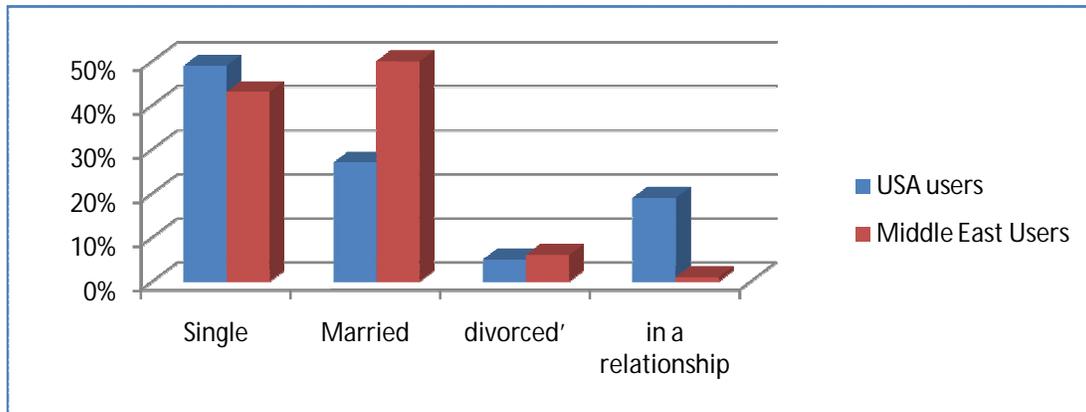


Figure 3: Marital Status of Users on Facebook

Table 2 illustrates the education level of Facebook users in the USA and the Middle East. The majority of the USA users (45%) are from colleges, compared with (27%) users in the Middle East. One quarter of Facebook users in the USA belong to high schools. The majority of users in the Middle East are alumni (40%). This is because the majority of Middle East users are over the age of 25, but the majority of users in the USA are between 18 and 24. It can be observed from the table that about 7% of the USA users and 17% of Middle East users have an unknown level of education.

Table 2: Education Level of People

	High school	College	Alumni	Unknown
USA users	25%	45%	23%	7%
Middle East users	16%	27%	40%	17%

Table 3 shows the interests of users in the USA and Middle East. Facebook gives facilities to users to write their interests. I tried to figure out the most frequently used word to describe each interest, and they have been recorded in the table. The majority of users in the USA are interested in music (210), while the majority of the Middle East is interested in creating friendship. An equal number of users in the USA and Middle East have an interest in sports. The second most popular interest of the USA users is friendship, but in the Middle East it is chatting.

	USA users	Middle East users
Friends	150	160
Bands	87	17
Dance	78	31
Sports	123	124
Music	210	85
Movies	91	24
Photography	38	22
Chatting	101	140
Art	7	8
Traveling	31	80
Shopping	54	62

Table 3: Interests of Users on Facebook

Many people have accounts in both Facebook and MySpace at the same time. I collected 117 samples from such people: 92% of users in the USA and 8% from the Middle East. Therefore, there are many different points of interest.

First, the study shows that some users have different friends in each SNS. This is because the users’ interests are different in different SNSs. Most people who have a MySpace account in the USA and Middle East are interested in bands, while the interests of the same users in Facebook are friendship or chatting. Second, some users have the same friends in different SNSs because the users decide to move to another SNS.

It is noticed that many people moved from MySpace to Facebook because the popularity of Facebook has increased in the last few years. Users reported that the last time they checked their MySpace account was two months ago or longer. And third, it was found that users have different friends on Facebook and MySpace because most SNS friends work at the same company or attend the same university as the user. Therefore, the user joins the SNS to find friends in the same field of work.

Conclusion

SNSs have become popular in the last several years. They give users the ability to share information, interests, and activities, and the most important advantage is keeping online relationships between friends and family. This has led researchers to try to understand how SNSs grow. At the beginning, the paper started to present main concepts, such as SNS, Social Networking sites analysis, profile, OpenSocial, Facebook, and MySpace.

This paper aims to study the characteristics of Facebook users in the USA and in the Middle East, as well as to investigate whether people who have different accounts in different SNSs have the same or different friends and why. Therefore, I offered the methodology to collect information of users and friends by creating an online application deployed in Facebook and a MySpace application. Then, I stored the data in a database server-side. Finally, analysis of the collected data gives us results about some characteristics such as location, gender, age, marital status, number of friends, interests, etc., and we can then discuss the results.

In conclusion, the research is investigated deeply to identify the differences between the users in the USA and the Middle East. The study focuses only on people who make their information public. Some of the information that has been gathered is unexpected; e.g., the study shows Facebook is very popular in the Middle Eastern countries.

References

- O'reilly, T., *What is web 2.0*, 2005.
- Ellison, N.B., *Social network sites: Definition, history, and scholarship*. Journal of Computer-Mediated Communication, 2007. **13**(1): p. 210-230.
- Lockyer, L. and J. Patterson. *Integrating social networking technologies in education: a case study of a formal learning environment*. in *Advanced Learning Technologies, 2008. ICALT'08. Eighth IEEE International Conference on*. 2008. IEEE.
- Murray, K.E. and R. Waller, *Social networking goes abroad*. International Educator, 2007. **16**(3): p. 56-59.
- Newman, M.E., *The structure of scientific collaboration networks*. Proceedings of the National Academy of Sciences, 2001. **98**(2): p. 404-409.
- Cha, J., *Shopping on social networking Web sites: Attitudes toward real versus virtual items*. Journal of Interactive Advertising, 2009. **10**(1): p. 77-93.
- O'Murchu, I., J.G. Breslin, and S. Decker. *Online social and business networking communities*. in *Proceedings of ECAI 2004 Workshop on Application of Semantic Web Technologies to Web Communities*. 2004.
- Roblyer, M., et al., *Findings on Facebook in higher education: A comparison of college faculty and student uses and perceptions of social networking sites*. The Internet and Higher Education, 2010. **13**(3): p. 134-140.
- Grewe, L., *OpenSocial Network Programming*2009: Wrox.
- Raacke, J. and J. Bonds-Raacke, *MySpace and Facebook: Applying the uses and gratifications theory to exploring friend-networking sites*. CyberPsychology & Behavior, 2008. **11**(2): p. 169-174.
- Thelwall, M., D. Wilkinson, and S. Uppal, *Data mining emotion in social network communication: Gender differences in MySpace*. Journal of the American Society for Information Science and Technology, 2010. **61**(1): p. 190-199.
- Thelwall, M., *Social networks, gender, and friending: An analysis of MySpace member profiles*. Journal of the American Society for Information Science and Technology, 2008. **59**(8): p. 1321-1330.
- Lampe, C., N.B. Ellison, and C. Steinfield. *Changes in use and perception of Facebook*. in *Proceedings of the 2008 ACM conference on Computer supported cooperative work*. 2008. ACM.
- eBizMBA, *Top 15 Most Popular Social Networking Sites*. 2013.