INVESTIGATING HOW TO CONFIGURE THE FACEBOOK SETTINGS FOR SAFE BROWSING

A THESIS SUBMITTED TO

THE GRADUATE SCHOOL OF APPLIED SCIENCES

OF

NEAR EAST UNIVERSITY

By

IDREES HAJAR NAAMAN

In Partial Fulfillment of the Requirements for

the Degree of Master of Science

in

Computer Information Systems

NICOSIA, 2016

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I hereby declare that all information in this document has been obtained and presented in accordance with academic rules and ethical conduct. I also declare that, as required by these rules and conduct, I have fully cited and referenced all material and results that are not original to this work.

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To my family...

ABSTRACT

The usage of social network sites has increased rapidly over the years and this has attracted the interest of many researchers. Researchers are keen to understand the functionality behind this highly used technology. Facebook is a free social network site that allows registered users to connect with each other by sending messages, pictures, videos and making calls. Privacy issues have been reported as one of the major concerns among Facebook users as personal information is collected upon registration. For this reason, the aim of this study is to investigate how to configure Facebook settings for safe browsing. A questionnaire was distributed to 700 students at University of Zakho in North Iraq. Descriptive statistics, Independent *t*-test, ANOVA and Pearson correlation were used for data analysis. Results revealed that there was no significant difference between gender, Security Settings, Privacy and Support Inbox. Furthermore, results also showed that there was a significant difference between the age group 21-24 and students' perceptions of Facebook privacy settings. In addition, there was no significant difference between faculty and students' perceptions of Facebook privacy settings. Results also showed that there was no correlation between hours spent on Facebook and the way the account is configured. In addition, there was a negative weak correlation between frequency of Facebook usage and the way the account was configured. This study will be beneficial to students, security specialists and other interested researchers who wish to understand the functionality behind social networking sites.

Keywords: Social networking sites, Facebook, Iraq, students, perception, Facebook settings, safe use of Facebook.

ÖZET

Sosyal ağ sitesi kullanımı son yıllarda artmış olup bu durum birçok araştırmacının ilgisini çekmiştir. Araştırmacılar kullanılan yüksek teknolojideki fonksiyonları anlamaya gayret göstermektedirler. Facebook ücretsiz sosyal ağ sitesi olup kayıtlı kullanıcıların birbirlerine mesaj göndererek, resim, video göndererek ve telefon ederek iletişime geçmelerini sağlamaktadır. Facebook kullanımında güvenlik konuları en çok endişe duyulan konu olarak belirtilmiştir. Çünkü kişisel bilgiler kayıt zamanında Facebook'a girilmektedir. Bu sebepten dolayı, bu çalışma Facebook ayarlarını kullanıcıtı koruyacak şekilde düzenleyip daha güvenilir bir şekilde kullanılabilmesine yönelik yöntemleri araştırmaktadır. Çalışmada, Kuzey Irak'ın Zakho Üniversitesi'nde 700 öğrenciyle bir anket yapılmıştır. Elde edilen verilerin analizinde tanımlı istatistik, bağımsız t-testi, ANOVA ve Pearson Korelasyon kullanılmıştır. Elde edilen sonuçlara göre cinsiyet, güvenlik ayarları ve kişisel destek indeksleri arasında önemli herhangi bir fark bulunmamıştır. Buna ilave olarak, 21-24 yaş arasındaki grup ve öğrencilrin Facebook güvenlik ayarlarını kullanımları arasında önemli fark bulunmuştur. Öğrencilerin bulundukları fakülteler ve Facebook ayarlarının kullanımı arasında önemli herhangi bir fark bulunmamıştır. Neticeler şunu da gösteriyor ki öğrencilerin Facebook'da harcadıkları zaman ve kişisel hesapları arasında herhangi bir korelasyon bulunmamıştır. Ayrıca, Facebook kullanım sıklığı ve hesaplarının güvenlik ayarlarının düzenlenmesi arasında negatif korelasyon bulunmuştur. Bu çalışma öğrencilere, güvenlik sorumlularına ve sosyal ağ sitelerinin güvenlik ayarlarını konusunda bilinçlenmek isteyen diğer araştırmacılara faydalı olacağı düşünülmektedir.

Anahtar Kelimeler: Social networking sites, Facebook, Iraq, students, perception, Facebook settings, safe use of Facebook

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LIST OF ABBREVIATIONS

SNSs: Social Networking Sites.

OSN: Online Social Network**.**

SPSS: Statistical Package for Social Scientists.

CHAPTER 1
INTRODUCTION

This chapter gives details about the general introduction of social networking sites usage and security, the problem definition, the importance of the study, the aim of study, and the limitations of this study and most importantly the breakdown of this study.

1.1 Introduction to Privacy of Social Networking Sites

Social networking sites (SNSs) are open platforms of communications where peoples meet and interact virtually by sending messages, pictures, files, videos and calling each other (Chen & Chen, 2015). In the literature many researchers (Chen & Chen, 2015; Madden, 2014; Trepte & Reinecke, 2014) have raised issues of privacy in social networking sites. Most people feel there is infringement of privacy since personal information is collected upon registration. In addition to that third party companies such as advertisers and application developers have also been reported as data miners and for this reason many users no longer have the freedom to socialize virtually over the internet.

The usage of social network sites as a means of communication with friends and relatives has grown rapidly over the past decade. The growth of social network sites has increased many threats to online users due to increase of cyber-bulling and online crime rates through the use of social network sites. Ghazinour et al., 2014 pointed out that the increase in privacy violation cases have been reported as the main cause for people to close or delete their accounts on social networking sites. In addition, Buccafurri et al., 2015 mentioned Canada's Privacy Commissioner Challenge in which the privacy settings of Facebook were analyzed as citizens felt social network sites are not trustworthy as far as privacy issues are concerned. Users of social network sites are urged to use more privacy setting options (Chen & Chen, 2015).

Facebook has been reported as the largest growing social network site with over 1.65 active users as of January 2016 (Lin, 2016). For this reason it is important privacy settings and security are crucial to protect user privacy. Facebook has made this possible

through personalization settings were users can set restrictions as to who can view their profiles and who cannot contact them. Jin et al., 2014 indicated that most people find it tiring and time consuming to go over the privacy policies that social networks have. In addition, the researcher pointed out that it is alarming to realize that by default all Facebook posts are visible to the public yet most users are unaware of that.

Offline privacy is characterized by time alone. Locking doors, lowering voices and even closing curtains (Bartsch & Dienlin, 2016). Similar to how people conduct themselves when they need privacy is also the same way people should enjoy their online privacy (Trepte & Reinecke, 2014). To achieve online privacy, social network operators have devised several strategies to help protect user privacy yet enjoying the services offered by the social network service provider. Rosenbaum et al., (2013) mentioned that are able to enjoy privacy by limiting friends as well as maintain different user profiles. Furthermore, the researcher stated that to protect a user's privacy other social network sites like skype have added a feature where someone can change their status to offline yet they are online. By so doing their privacy is granted yet enjoying the services offered by the social network site.

It has been reported that in Germany people an average of 3 hours a day online and popular social network sit5es like Facebook have been reported to have more than 1.49 billion users every month (Frees & Koch, 2015). Privacy concern have been a major concern for social network users with reported high rates of cyber-bulling and internet crime such as identity theft. A study conducted by Eurobarometer, (2014) indicated that 84% of internet users were concerned about their privacy online in a study which had 27,761 participants. A similar study was found by Hoofnagle et al. (2013) who reported that interviews conducted with 975 internet users in Europe showed that more than 55% of the users were concerned about their privacy online than they were five years back. This clearly reflects that the increase in social network growth has had a negative effect on trusting the internet.

Baltman (2014) pointed out that privacy concerns have been observed as a major key for account closures in most social network sites. Studies have shown that the benefits of

being on social networks such as popularity, maintaining relationships and identity construction are outweighed by the risks of being on social networks (Taddicken, 2013). This study will investigate the determinants of the Use of Facebook's Privacy Settings among university students: A case study in Iraq. This study will be quantitative in nature and a questionnaire to obtain the data. Using a representative sample of students from across all of higher education, the study will probes their use of Facebook privacy settings.

1.2 The Problem

Privacy issues have been reported as one of the major concerns among Facebook users as personal information is collected upon registration. By providing Facebook with the required information most users feel that there is privacy infringement which may result in identity theft. Furthermore, there have been reports on the controversial tracking record that Facebook uses (Chen & Chen, 2015). From the literature reviewed so far on this study, it is observed that there lack on research on Facebook security using students as case study in Iraq. So this study will help in filling the gap in that area of study.

1.3 The Aim of the Study

The aim of the study is to investigate how to configure the Facebook settings for safe browsing (university students in Iraq).

To achieve this aim, there is need to achieve more sub-aims likes;

1. What are students' perceptions on Facebook's Privacy Settings usage?
2. Is there a difference between gender and students' perceptions on Facebook's Privacy Settings?
3. Is there a difference between age and students' perceptions on Facebook's Privacy Settings?
4. Is there a difference between faculty and students' perceptions on Facebook's Privacy Settings?

5. Is there any correlation between the frequency of Facebook usage and the way the way the account is configured?
6. Is there any correlation between hours' students spend spent on Facebook daily and the way their Facebook account is configured?
7. Is there any correlation between the frequency students check their Facebook daily and the way they configure their Facebook account?

1.4 Importance of the Study

Social network sites have changed the way interact and communicate with people and this has attracted the interest of many researchers. Researchers are keen to understand the functionality behind this highly used technology. This study is very important because it's one of its kinds in this region; we intend to consider it at student level because to know to explain how these students are using Facebook's Privacy Settings. Based on literature review, this work will be among those of the first researches who will address the general/security, privacy/blocking and support inbox/videos setting of students using Facebook in Iraq universities.

1.5 The limitations of the Study

Given below are some limitations faced by this study:

- This study will be only limited for university student.
- Due to the large data required various universities in Iraq will be used for this study.
- Time of the study will be a major limitation in the sense that if this study will be carried out again at the future, the perceptions of the students will be changed towards Facebook's Privacy Settings usage.

1.6 Overview of the Study

Chapter 1 gives details about the general introduction of social media network usage and security, the problem definition, the importance of the study, the aim of study, and the limitation of this study and most importantly the breakdown of this study.

Chapter 2 presents the related research work on online privacy, general privacy issues on social media, etc.

Chapter 3 introduces the theoretical framework whereby various aspects of privacy issues were discussed.

Chapter 4 gives an overview about the research methodology, in which the research model, the participants, the data collection process and the instrumentation used in the research, data analysis techniques employed, and the data collection procedure were discussed.

Chapter 5 is the section where the results and discussion were discussed in details.

Chapter 6 mentions the conclusion of the entire research study and recommendations of the thesis, suggestions, and for future studies.

CHAPTER 2
RELATED RESEARCH

Chapter 2 presents the related research work on online privacy, general privacy issues on social networking sites.

2.1 Online Privacy

Livingstone (2013) conducted interviews to find out about online privacy. The participants consisted of 16 teenagers and findings showed that lack of internet literacy was the main problem for students having severe problems when handling privacy settings on social networks as well bad Graphical User Interfaces (GUI) on some social network sites. A similar study was also conducted by Hoofnagle et al. (2010) who tested the knowledge of both online and offline privacy. Findings showed that knowledge of online privacy was poor as indicated with an average of 30%.

Baek (2014) conducted a study to find out the importance of digital literacy as far as online privacy is concerned. The participants consisted of 297 Korean students. Findings showed that students who students who were rated as intelligent had better knowledge of online privacy and their accounts were more secure compared to the average and low rated students. This shows that it is difficult to manipulate people's privacy opinions if they are literate when it comes to internet usage and security.

Dienlin and Trepte (2015) analyzed the different privacy behaviors that users resemble in the virtual world. Informational privacy behavior identifies the nature of information that users are willing to share online about themselves. Furthermore, social privacy behavior identifies and describes the nature of information that users are willing to share with friends as well as the public. Lastly, Psychological privacy behavior describes the intimacy that exists between shared information.

Li et al. (2014) came up with a dynamic trust-based privacy model that enables users to choose the level of privacy they want before posting anything on social network sites. In addition, the model uses a cosine similarity function used to detect sensitive information. The functionality makes use of key words and suggests levels of privacy to the user.

Other researchers have acknowledged the model and recommended it to social network operators.

SPAC is an intelligent semantics based configuration system that was proposed by Li et al., 2013 to predict user patterns and privacy configurations used by users and therefore predict more secure and safe privacy options to the users.

Tamir and Mitchell (2014) conducted a research to find out ways that are used to share sensitive information online yet protecting one's privacy. Results showed that the most efficient method used was that of constructing a social network circle of trustees. This circle maximizes the expected visibility among your trustees meaning information will only be visible to the people you trust and by so doing, leakage is reduced.

Ensuring privacy in social network sites is a major concern and unsolvable issue among all social network service providers (Ghazinour et al., 2013). Knowledge of social network operations as well as internet literacy may help prevent most of the privacy problems experienced by social network users. Studies conducted by Li (2013) showed that more than 75% of social network users are not aware of the privacy settings and how they function in the social network sites they use. Previous studies have shown that the average student is or user in general is not aware of privacy settings or do not use them.

It is crucial for users to read the privacy policies upon registration as this concerns the level of privacy they will have on social networks. It is the sole responsibility of the user to decide the level of privacy that he/she wants (Bartsch & Dienlin, 2016). Furthermore, the researchers pointed out that internet users must be taught online privacy skills and how to configure Facebook for safe browsing to avoid being a victim of identity theft due to lack of knowledge.

Buccafuri et al. (2015) conducted a study to find out the frequency spent on Facebook and the privacy settings they had. The study had 630 participants and results showed that people who had more secure accounts in terms of privacy spent more time online and felt more secure using their Facebook accounts. Furthermore, the results indicated that there was no relationship between time spent on Facebook and knowledge of privacy

regulations. In conclusion, the researchers stated that internet experience or knowledge leads to safety and privacy behavior.

Li (2013) and Buccafuri et al. (2015) pointed out that social network behavior is a key factor in the field of Social networking as it plays a significant role in people's lives. With the increase in online social network users it is crucial for Service Providers to educate their users on the importance of online privacy. However because of the human mindset most users fall victims of privacy infringement as they are unaware of the privacy policies and how to secure their accounts.

Chen and Chen (2015) conducted a study at a university with 515 students. The aim of the study was to investigate the relationship between privacy protection settings, profile visibility and one's ability to manage privacy settings. Findings from their study showed that few users took the option of profile invisibility option as part of their privacy as well as self-disclosure. In addition this has showed that profile visibility concerns are the main reasons for setting up privacy restrictions among social network users. An increased number of identity theft on social networking sites is the main reason behind hiding profiles on social media.

2.2 Privacy on Facebook

Recent studies have shown that Facebook has reached popularity around the world with over 1.65 billion users as of January 2016 (Lin, 2016). The rapid growth of social networks has attracted the interests of many researcher interested in the same area of study. Knowledge of the functionality behind social networks is important in different entities (Jin et al., 2013). Facebook has gone further from not only a social platform for individuals but it has stretched further to being a platform for businesses and for this reason it is important to enhance privacy settings in social networks were competitors interact bidding for customers (Buccafurri et al., 20140.

Buccaffri et al., (2014) analyzed the different aspects of Facebook in terms of connectivity, social behavior, malicious behavior and privacy. Findings revealed that though the social network provider have introduced many privacy options to secure

information of users, most users still feel more can be done as they still feel insecure to send confidential information through Facebook. In addition, the researcher pointed out that further researcher is recommended to fully understand the privacy policies of many social networks and if users have a preference of one social network compared to another on the basis of security and privacy.

Hughes et al. (2012) conducted a study with 300 users to investigate the relationship that exists between sociability and the need for recognition on Facebook and Twitter. Results showed that there was a positive relationship between gender, age and personality in online socializing. Furthermore, results have shown that users prefer Facebook to twitter. Ahn et al. (2014) did a study to find out how degree correlation, clustering coefficient and average path length of Myspace social network site. A similar study was conducted by Fogg and Iizawa (2013) to find out the role played by persuasion in attracting new users to join a social network site. The sample constituted US users of Facebook and also Japan users of Mixit social network site. The researchers analyzed the differences in the profiles based on persuasion goals, inviting friends and the frequency in terms of usage. Results revealed that the way Facebook and Mxit are designed influences users on who they can invite as friends, who they can persuade and also the frequency of using the social network site.

Gao et al. (2012) conducted a study to compare the user behaviors on Sina Weibo and Twitter. This was achieved by analyzing how people gain access to microblogs and using textual features to compare the sentiments and topics found in the two social networking sites. In addition, the researchers also investigated the extent microblogging drifts a user's attention over a period of time.

(Burke et al., 2009) pointed out that the growth in social networking sites has lured the interests of many researchers interested in investigating the main features of social network development. Recent studies have tried to characterize behavior in different social networking platforms. It is crucial for Social network providers to understand the behavior patterns of users as this helps in evaluating the performance of the system (Burke et al., 2009). Another important issue in paying attention to user behavior is that it

facilitates viral marketing which is the main tool used my many companies to market their products over the internet (Wilson et al., 2009). In the literature, many researchers (Krishnamurthy, 2009; Rodriguez, 2009) have stated that the study of user behavior patterns is crucial in this digital age as it helps in predicting the future influence of social network sites on internet traffic.

Benevenuto et al. (2009) created a clickstream dataset with one interface that enables users to view their profiles of multiple social networks in one screen. Java et al. (2007) and Teevan et al., (2011) conducted a study to find out about the social behavior of twitter users including an analysis of large-scale query logs and qualitative data. Ross et al. (2009) conducted a study at a university to understand the usage of Facebook among university students. Results showed that students mainly use Facebook for social interactions in the virtual world with family and friends. 50% of the respondents also indicated that they use Facebook for educational purposes to interact with their instructors as well as share information and assignments on Facebook groups. Furthermore, results also showed that openness, conscientiousness and neuroticism influence the usage of Facebook among university students.

Cheng, Dale, and Liu (2008) also conducted a study a study to understand the functionality behind the video sharing service used by YouTube. Findings revealed that the way that users behave on YouTube is influence by comments, views as well as the overall rating of the video. A similar study was conducted by Maia et al. (2008) to identify the different classes that users are categorized to improve advertisements on YouTube.

Zhao et al. (2011) conducted a study to find out the differences between paper-based media form and twitter. Results showed that users in this digital age now prefer to read on their mobile devices. Another study was conducted to compare Facebook and Myspace on issues of trust and privacy (Dwyer et al., 2007). Findings showed that users of both sites had the same privacy concerns. However users of Facebook had a higher rating of trust on the service provider and indicated they were willing to share identity details.

Shen et al. (2013) conducted a study to analyze behavior data patterns of Facebook and Gmail users. A comparative analysis was done to investigate the relationship between user activities on social network sites and their email accounts. Findings revealed that more than 40% of the social interactions and engagements are through social networks although users tend to be more emotional on social network sites compared to email services.

Jin et al. (2013) conducted a study to find out the behavior of different users on social network sites. This included, social behavior, malicious behaviors as well as traffic activity. The researchers wanted to understand the level of security threats as far as spam and Sybil attacks are concerned. The approach the researchers used differs from that used by other researchers since their approach incorporates two social network sites, Facebook and Twitter. Findings revealed that users act differently in different social networks and behaviors, the researchers have concluded that the reason behind this lies in the nature of the relationships as well as the privacy settings in the accounts.

Studies have shown that it is crucial to understand the role social network sites play in people's lives (Karahasanovic et al., 2009). The degree of privacy in both public and private communications has raised the interest of many researchers (Boyd, 2006). Findings revealed that users share content and sensitive information on Facebook without taking privacy considerations into account (Debatin et al., 2009). The recent changes in privacy settings on Facebook has increased user trust as far as sharing sensitive and personal information is concerned (Ellison, Lampe & Steinfield, 2009).

According to Raynes-Goldie (2010), there must be a distinctive definition of the term "privacy" when the focus is drawn to social network sites. Not much research has been done focusing on the elderly group that use Facebook (Heim et al., 2009). The researcher recommended future researchers to consider investigating how the presence of older adults influence the behavior of younger people on Facebook. A study conducted by

Facebook (2010) has shown that there has been an increase in the number of users joining Facebook aged between 40 and above.

Social network sites are based on the idea that individuals only share content about themselves voluntarily, however some studies have shown that a lot of factors influence what one posts on social network sites (Joinson, 2008). The main issue that needs to be addresses lies in bridging the gap that exists between the two aspects, content sharing and need for sociability. Findings from previous studies have shown that content sharing is compromised the moment privacy is enhanced. The challenge that social network providers encounter lies in their ability to promote content sharing yet ensuring privacy.

Goldie (2010) described Facebook as a platform where people of different cultures and races get to meet and interact in the virtual world. The researcher went on to explain the physiological effect that Facebook has on users when a user has many follows and a large friendship list. This may make some people feel insecure and too publicized to such an extent that they feel their privacy has been compromised. In addition, the researcher investigated the social aspects of social network sites. The researcher concluded his study by recommending future researchers to investigate content sharing, sociability and privacy to improve the design and functionality behind social network sites.

The new social phenomena lies in privacy of social network sites. There is need for study to understand the underlying psychological behavior in terms of content sharing and sociability and how privacy influences the way a user behaves in the virtual world (Schrammel, Köffel & Tscheligi, 2009). Luders (2009) pointed out that the best ways to analyze behavior patterns of users as well as their level of trust in a social network is through profile analyses and self-reporting questionnaires. However the researcher emphasized the need for other methods to be used as these two methods are weak in providing detailed knowledge. In addition, the researcher emphasized the need for in-depth interviews to gain more insight.

In the literature many researchers (Debatin et al., 2009; Raynes-Goldie, 2010) have targeted on teenagers as participant. However, recent studies have been targeting on all age groups to gain a better understanding of privacy issues on Faceboom (Brandtzæg & Heim, 2009).

The need for further research is called for that focusses on different cultural backgrounds because the extent of what is referred to as privacy differs from culture to culture. In addition, most studies on Facebook have focused on USA and hence the need to diversify (Kim & Yun, 2007).

As reported by Brandtzæg and Lüders (2009), 60% of the citizens use Facebook as their main channel of communication. Facebook (2010) has reported that the highest number of users is found in Norway. The research has contributed to the theory of social network privacy inspired by the Technological Acceptance Model and a combination of other theories of information systems. The use of this approach helps researchers' promote sociability and content sharing.

CHAPTER 3
THEORETICAL FRAMEWORK

This chapter provides an explanation of the items considered in conducting the research; including privacy on online privacy, social networks, Facebook, privacy on Facebook, privacy on Facebook, Facebook setting.

3.1 Online Privacy

Online security is still a new idea of research that has a hypothetical definition and comprises of significant accompanying ideas. According to Debatin (2011), privacy literacy incorporates a well-informed sympathy towards the mentioned online security. Trepte et al. (2015) also described online security as a combination of genuine or conclusive (‘understanding that’) and procedural (‘knowing how’) all in efforts to understand online security or privacy. With respect to learning, online privacy training suggests the customers' data about particular parts of online data security, and about laws and commands and moreover institutional practices. To the extent procedural data, online privacy capability implies the customers' ability to apply philosophies for individual privacy control and data security. As to exploratory estimation, parts of online privacy capability were joined into the Internet privacy concerns scale by Hong and Thong (2013). The scale joins things, for instance, it is basic to me that I am careful and found out about how my own information will be used by business/government destinations. No quick assessment of online privacy capability considering test scores is a bit of the scale.

Online privacy for client is of incredible significance in light of the expanded rate of risk from programmers and cybercriminals has extended in connection to our reliance on the Internet.

Until today, there has no study yet that has found an effective measure to cultivate online security literacy. Second, to date no study broke down if online privacy literacy may influence online privacy conduct. For instance, do individuals who have more online privacy utilize more components to limit access to their online profiles? In like manner, to date no study examined if online privacy literacy may influence mental perspectives.

Another progressive question would ask if online security literacy would build an apparent online privacy. With reference to the two scholars Dienlin and Trepte (2015), online privacy literacy maybe particularly applicable for parts of social privacy control, which is the reason in this study; we accordingly concentrate on social part of online privacy literacy.

3.2 Social Networks

Social networking sites (SNSs) can be characterized by Rainie et al. (2012) as electronic administrations that permit people to (1) develop an open or semi-open profile inside a limited framework, (2) express a rundown of different clients with whom they share an association, and (3) view and navigate their rundown of associations and those made by others inside the framework have conveyed developing thoughtfulness regarding the issue of protection because of their fast extension and joining into people's day by day lives. As a lot of interested parties usually scrutinize their clients' profiles it is therefore safe to conclude that different outsiders, for example, publicists, application engineers, security suppliers, and scholastic researchers, mine client information for data (Rainie et al., 2012).

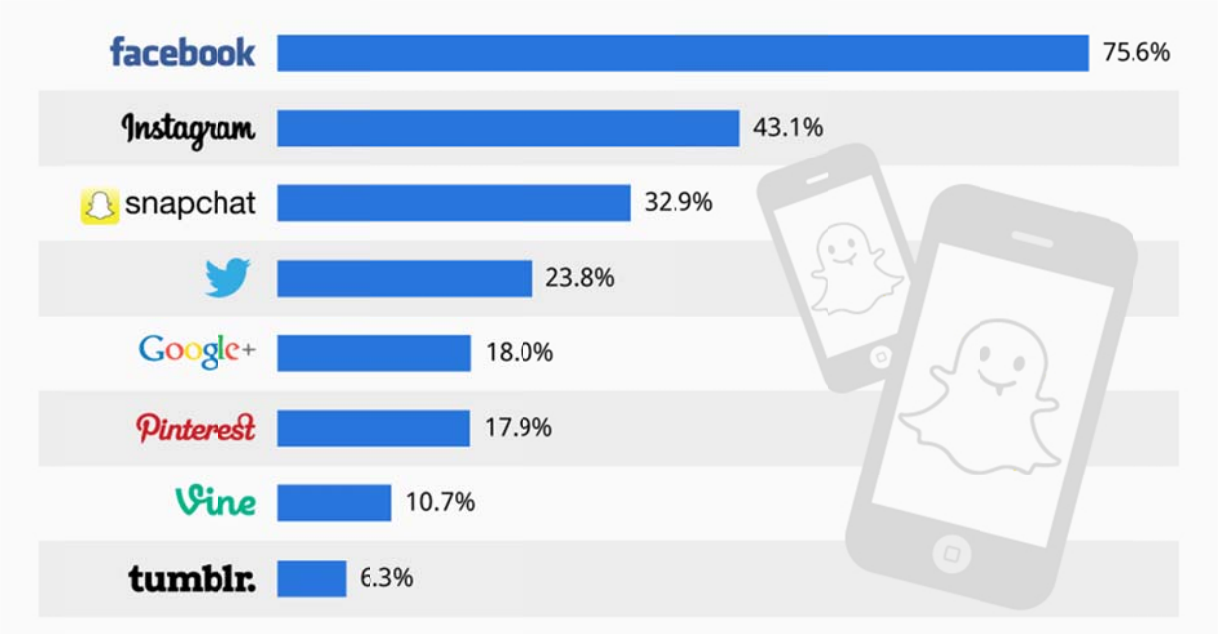

Figure 3.1: Most popular social network sites (Park & Jang, 2014)

It is also true to conclude that one's reputation and career can be put to a risk by careless sharing on SNSs, without taking into account the high risks that can lie on use of SNSs. It has been proven that in terms of security, (Chen and Chen, 2015), SNS utilization (Bomeo and Barkhuus, 2011), and security ensuring practices (Taddicken, 2013). With regards to utilizing SNSs, people are not generally compelled by security concerns. Indeed, security concerns have little effect on SNS utilization practices when the watched dangers of revealing individual information are exceeded by the apparent advantages of person to person communication, for example, popularity, character development, system growing, relationship support, and self-presentation (Christofides and Muise, 2009).

3.2.1 Advantages of Social Networking

The following are possible advantages offered by social networking sites;

It provide worldwide connectivity such as:

- Helps users to find romance
- Assist job searchers
- Helps in locating assistance
- Product and service referrals
- Receiving support from other users
- Career guidance
- A political platform for sharing views
- Real time news
- Mutual interest collaborations
- Sharing information in real time
- Advertising
- Increased news cycle

3.2.2 Disadvantages of Social Networking

The following are possible disadvantages offered by social networking sites;

- It causes backlash
- It cause cyberbullying and crimes against children
- It causes risks of fraud or identity theft
- It causes time wasting
- It leads to corporate invasion of privacy

3.3 Usage of Social Networking Sites in Iraq

As it currently stands, the most utilized social network site as a part of Iraq is Facebook with a normal use of around 97.15%. Twitter positions second with 1.67%, Google+ positions third with 0.78%, Pinterest positions fourth with 0.16% and the staying social networks holds 0.24% utilizing portable web. The number of inhabitants in Iraq starting 1 January 2016 was evaluated to be 37,032,056 individuals. This was an expansion of 3.30 % (1 183 712 individuals) contrasted with populace of 35,848,344 the prior year. In 2015 the normal increment was sure, as the quantity of births surpassed the quantity of passing by 1,066,847. Because of outer relocation, the populace expanded by 116,866 relaying to the sex proportion of the aggregate populace (http://countrymeters.info/en/Iraq). So in this manner more than 90% of the populace utilizes social networking sites.

3.3.1 Facebook

Facebook's clients can collaborate with the site using different versatile applications. Subsequent to discharging "Facebook for iPhone" as their first portable application in 2007, Facebook has gone ahead to give a few various types of versatile applications: Facebook for iPhone, Facebook for Android, Facebook Home, Facebook Messenger, Pages Manager for iOS, and Pages Manager for Android (Hewitt, 2007). Toward the end of 2012, Facebook reported that clients were sharing 150 billion companion associations in this online group in view of secured connections, characterized as disconnected from the net based online relationship (Zhao et al., 2008). As a Facebook pool, clients' family, companions, neighbors, associates, and different colleagues all in all turn into their

"companions," as one of the essential employments of Facebook is to keep up and reinforce previous connections (Boyd, 2008; Ellison et al., 2007; Vitak, 2012). Accordingly, individuals may feel more good sharing data since they have a more elevated amount of trust of their Facebook "companions," and in some cases, they may even feel weight to share individual data in light of the fact that their "companions" are doing as such (Acquisti and Gross, 2006; Gross and Acquisti, 2005; Taddicken, 2014).

An illustration has been made by few researchers who have contrasted Facebook with a chunk of ice in light of the fact that lone a little piece of client correspondence is over the surface and noticeable to clients, while the rest is submerged and imperceptible (Debatin et al., 2009). The noticeable piece of Facebook incorporates fun social associations among clients, and the imperceptible part speaks to a system of individual information that could be dug for focused showcasing and publicizing and different purposes (Stutzman, Gross, and Acquisti, 2012). While Facebook may appear like a sheltered space for long range interpersonal communication with previous contacts, clients can't be in finished control of their data on Facebook as a result of the majority of the data about their systems undetectable to them (Debatin et al., 2009; Gross and Acquisti, 2005; Stutzman et al., 2012).

3.3.2 Twitter

Twitter is one of the quickest developing social network sites on the web today, with 8 million clients joining month to month (Moore, 2009). Twitter is most every now and again utilized by youthful grown-ups. Twenty-five to 34 year olds make up the biggest rate of Twitter clients (Lenhart and Fox, 2009). This varies to some degree from other social networking administrations. For instance, Pew reported that middle time of Twitters is quite a while more established than the middle period of Myspace or Facebook clients however more youthful than LinkedIn clients (Lenhart and Madden, 2007). From its origin, Twitter was cross platform, implying that clients could present their messages by means of the web, moment delegate or SMS ("short informing administration" or instant message). This may have added to the way that Twitter clients

have a tendency to be "more versatile in their correspondence and utilization of data" than the normal web client," (Lenhart and Fox, 2009, p. 3).

Past investigations of Twitter have investigated the sorts of messages individuals post (Mischaud, 2007; Naaman, Boase, and Lai, 2010), the level of intelligence inside messages (Boyd et al., 2010; Honeycutt & Herring, 2009), the network size of Twitters and the recurrence of tweets (Gill & Arlitt, 2008; Moore, 2009). Twitter apparently asks clients, "What's happening with you?", yet look into proposes that clients don't generally tweet about what they are doing (Mischaud, 2007; Naaman et al., 2010).

Individuals use Twitter to share data about themselves and additionally to share data freely accessible somewhere else on the web, for example, breaking news or intriguing media such music, recordings, online journals, and so on. Honeycutt and Herring (2008) found that 41% Tweets in their specimen were shared data about the creator him or herself. Correspondingly Naaman, Boase, and Lai (2010) found that about portion of Twitter messages were about the creator him or herself while the rest were about other individuals or things. These studies recommend that Twitter clients are discussing themselves specifically; as well as regardless of the fact that only 50% of the messages are about themselves that in any case implies that Twitter clients are sharing 12 million tweets for every day about themselves (Liew, 2009). Here and there obviously messages that don't straightforwardly reference the client can in any case offer data about the client's tastes, interests, and inclinations (Liu, 2007).

Given the ascent of GPS and portable advancements which may empower sharing of area data (Humphreys, 2007), it is essential to step back and look at by and by identifiable data and in addition a second level of identifiable data including when and where individuals are. This is the principal study to the best of our insight that investigates the sorts of actually identifiable data that individuals post on Twitter.

3.3.3 Google+

The administration, Google's fourth invasion into social networking, experienced solid development in its underlying years, in spite of the fact that utilization measurements

have changed, contingent upon how the administration is characterized. Three Google administrators have managed the item, which has experienced considerable changes prompting an overhaul in November 2015 (Smarr, 2011).

Google+ is the organization's fourth attack into social networking, taking after Google Buzz (dispatched 2010, resigned in 2011), Google Friend Connect (propelled 2008, resigned by March 1, 2012), and Orkut (dispatched in 2004, starting 2013 worked altogether by backup Google Brazil – resigned in September 2014 (Orkut, 2014).

Google+ propelled in June 2011. Highlights incorporated the capacity to post photographs and notices to the stream or intrigue based groups, bunch diverse sorts of connections (as opposed to just "companions") into Circles, a multi-individual texting, content and video visit called Hangouts, occasions, area labeling, and the capacity to alter and transfer photographs to private cloud-based collections (Gundotra, 2011).

As per a 2016 book by a previous Facebook worker, a few pioneers at Facebook saw Google's attack into social networking as a genuine risk to the organization. Facebook organizer Mark Zuckerberg established a broad "lockdown", flagging that workers should devote time to carrying Facebook's elements into line with Google+ (Garcia, 2016).

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As indicated by a 2016 book by a previous Facebook representative, a few pioneers at Facebook saw Google's attack into social networking as a genuine risk to the organization. Facebook organizer Mark Zuckerberg founded a far reaching "lockdown", flagging that representatives should commit time to carrying Facebook's components into line with Google+ (Garcia, 2016).

3.3.4 Tumblr

Tumblr is a popular microblogging social network site owned by Yahoo. The blog allows users to post media and other content (Yu, 2013). Users can create their personal online journals (Boutin, 2009). Short-frame journals used in the social network comprise of tumble logs. Two weeks from the launch of Tumblr, its users were totaling 75 000 users (Ingram, 2011). The high peak was achievable through a partnership with Adidas promoting the brand (Delo, 2012).

3.3.5 Pinterest

Pinterest is a web based networking site with a pool of photographs which are available for public viewing (Carlson, 2012). The social network sites also has a mobile version. Pictures are known as pins and users can transfer and share pins as well as other recordings (Warmer, 2011). Users can save pins on their pin-board of pins they find interesting. Other websites have incorporated the idea of pins allowing users to directly transfer the information to their Pinterest account on their dashboard.

Pinterest has been integrated with twitter and Facebook allowing users to market their products on Pinterest and click share on other social networks then the information is automatically transferred to Facebook and Twitter (Li, 2013).

3.4 Privacy on Facebook

When Facebook was first launched in 2004, it was mainly confined to provide services needed by college and secondary students (Facebook, 2010). In 2006, the social network site opened to allow more internet users and till date it has grown to be the highest growing social network site with over 1.65 billion active users as of January 2016 (Lin, 2016).

Day et al., (2014) pointed out that recent demographic analysis of Facebook have shown that 30% of users are aged 35 years and above. To ensure privacy among users, Facebook has re-designed its social networking platform allowing users to make restrictions on their accounts as far as profile visibility as well as who can see their posts (Warmer, 2011). Facebook has enhanced its privacy options allowing users to open up to certain individuals as well as enjoy their privacy on the other hand.

Facebook usage has increased rapidly in educational institutions of the past years enabling more than 2 million students using Facebook for educational purposes such as lecture groups and discussion groups (Dey et al., 2014). For this reason the increased number of students and young people on Facebook has led to increases in cyber-bulling activities hence affecting the privacy and personal freedom that users must enjoy (Stutzman et al., 2011). To curb this issue Facebook added the “report” and “block” option were reports are traced and if explicit content is found then depending on the nature and extent of the issue a user’s account may be suspended.

Facebook has been noted for offering a distinctive facility enabling its users to set their privacy options on an individual level where they can specify what restrictions a certain friend cannot see from their profile as well as posts and what can be shared from their wall as well what cannot (Stutzman et al., 2011). However, other scholars have questioned Facebooks privacy policies as some listed functions and terms could not be found
(Acquisti and Gross, 2006). For this reason, security and privacy concerns became a major are of concern and interest among the developers and frequent upgrades and settings have been constantly embedded to provide more safety and privacy (Facebook, 2010).

3.4.2 Facebook Settings

Figure 3 below shows the Facebook settings which are found in the user's account under settings and allows the user to set and manage how his account functions (Facebook, 2010)

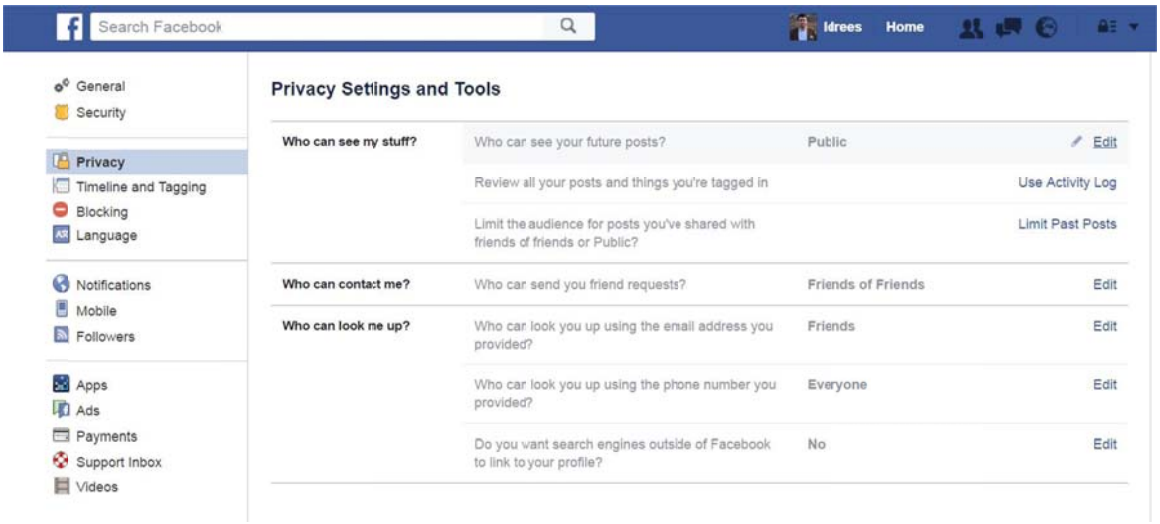

Figure 3.2: Facebook Settings

Madejski et al., (2011) conducted a study to understand the security mentality that Facebook user's had as well as understand the way the social network mines data. A total of 209 participants were interviewed to find out if their profile could be found easily as well as how they see and feel about their profile being public to all internet users as well as system users. In addition, the researchers pointed out that mined data was used for inquiries and solving issues on an individual basis. Furthermore, results showed that 8% of users uncover or open up what they report, 11% open up slightly of what they report and 77% uncovered precisely what they report.

A study was conducted to measure the amount of information that users are willing to share on Facebook (Gross and Acquisti, 2005). To achieve the aim of the study, 4540 Facebook profiles were uncovered and shared content analyzed. 1.2% of the participants had privacy settings restricting other users from hunting them down in search for information. In addition to that, 0.06% restricted access to their problems.

Joinson et al. (2008) carried out a study to investigate 241 Facebook users who reported that they only use Facebook to communicate with friends whom they have disconnected from other social platforms. Findings revealed that most users first port of call when they want to engage themselves in social networks first consider Facebook since a large pool of people can easily be located.

An examination of security settings is only important once system developers understand what users want to share (Besmer & Lipford, 2010). The only way that system developers are able to develop more secure and private platforms is through data mining and this is a controversial issue as users consider data mining as infringement of privacy (Li, 2013).

CHAPTER 4

METHODOLOGY

This chapter gives an overview about the research methodology, in which the research model, the participants, the data collection process and the instrumentation used in the research, data analysis techniques employed, and the data collection procedure were discussed.

4.1 Research Model

This study is aimed at investigating how to configure the Facebook settings for safe browsing. The independent variable of the survey and causal comparative study includes three variables: Gender, age and faculty. The dependent variables were general/security settings, privacy/blocking, and support inbox.

The 1st, 2nd, 3rd and the 4th research questions of the study have taken place around a scientific framework. A figurative view of the research model and the meanings of the used words are given in Figure 4.1.

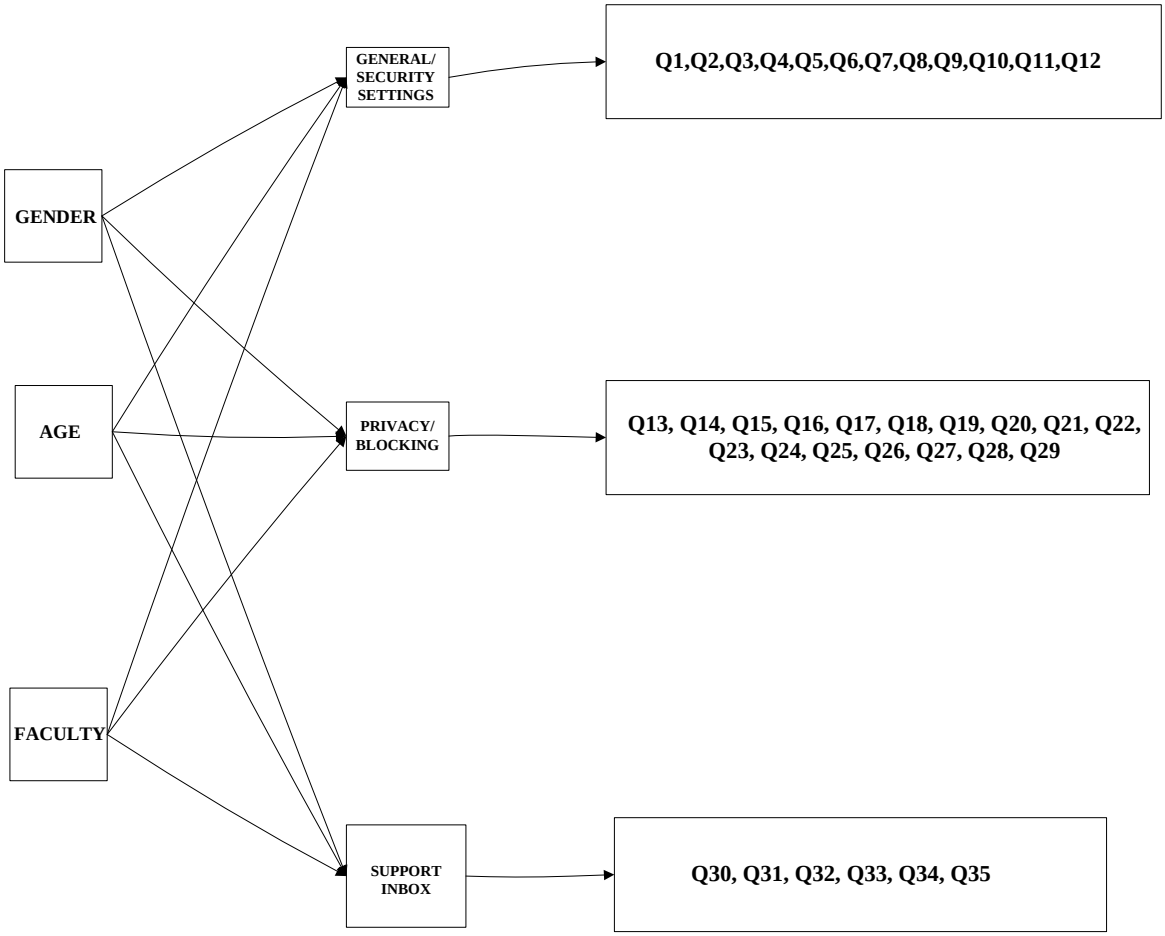

Figure 4.1: Research model of the study

4.2 Research Participants

The study was conducted during the 2015-2016 Spring term. The students were chosen randomly and the volunteered participants (students) in this study consisted of total of 700 students, which was made up of 500 undergraduate and 200 postgraduate (Master and PhD) students attending University of Zakho in North part of Iraq, from different faculties. 128 students from Faculty of Education, 210 students from Science Faculty, 220 from Faculty of Humanities and 142 from Faculty of Engineering, students were selected without any prior interest group of students in mind. There are 50.0% male and 50.0% female students who joined the study from various Faculties. The characteristics of the respondents are presented in Table 4.1. From the table, 41.4% of the students fell

in the 18-20 age group, 37.1% in the 21-24 age group and 21.4% were 25 years and above.

Table 4.1: Important demographic data of participants (N = 700)

Characteristic	Frequency	%
Gender		
Male	350	50.0
Female	350	50.0
Age		
18-20	290	41.4
21-24	260	37.1
25+	150	21.4
Degree		
Undergraduate	500	71.4
Postgraduate (Masters and PhD)	200	28.6
Faculty		
Education	128	18.3
Science	210	30.0
Humanities	220	31.4
Engineering	340	48

4.2.1 How Long Have Students Had Facebook Accounts

From the result, it was observed as shown Figure 4.2 below, that only 5.1% had Facebook account for about 1-6 months, 6.7% had Facebook account for about 7-12 months, 37.6% had Facebook account for about 1-2 years and 50.6% had Facebook account for more than 3 years from a population pull of 700 students whom participated in the survey.

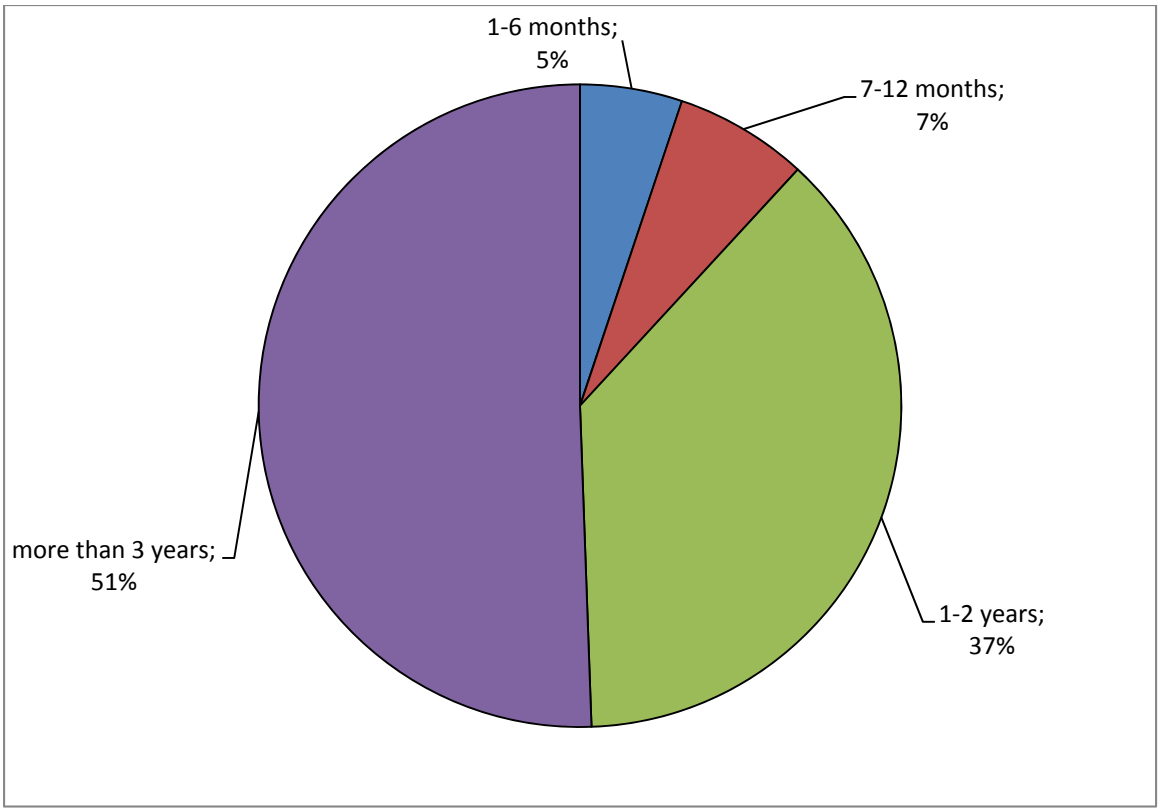

Figure 4.2: How long have students had Facebook account

4.2.1 How long have you been using Facebook regularly

From the result reported, it was observed as shown Figure 4.3 below, that only 2.1% have been using Facebook regularly for 0-3 months, 7.0% have been using Facebook regularly for 3-6 months, 20.1% have been using Facebook regularly for 6-12 months, 45.3% have been using Facebook regularly for 1-2 years and 25.4% have been using Facebook regularly for 2-5 years from a population pull of 700 students whom participated in the survey.

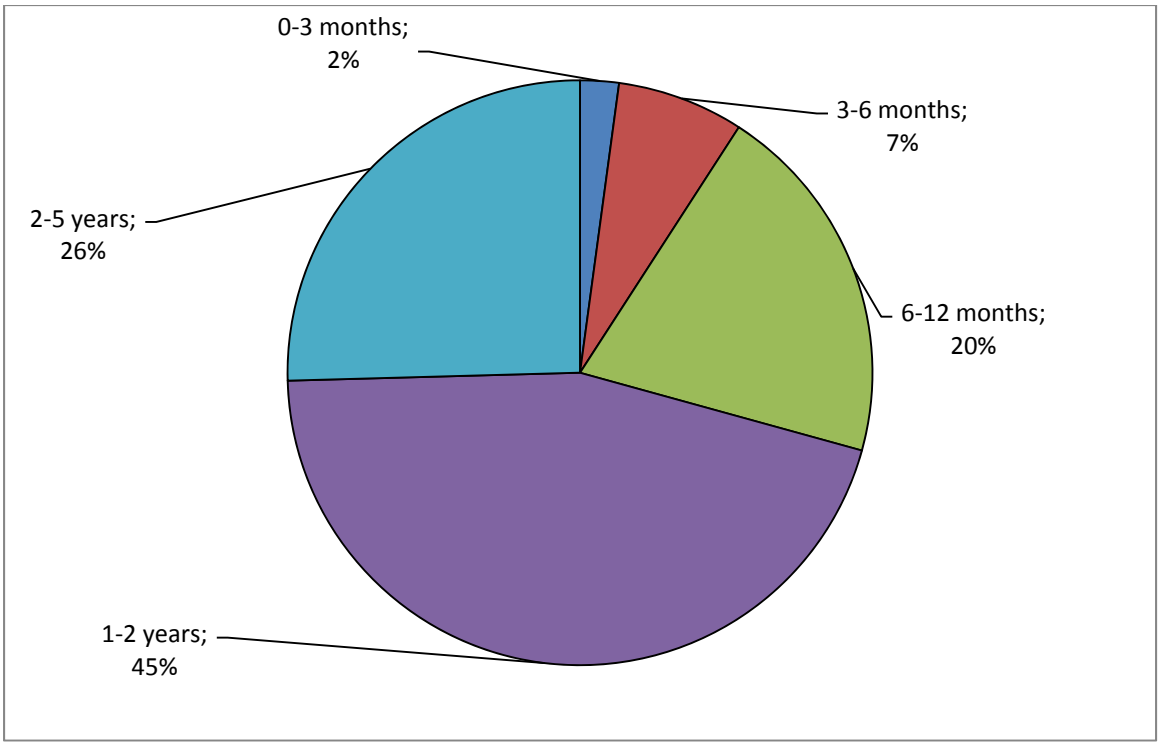

Figure 4.3: How long have students been using Facebook regularly

4.2.2 How often do student use Facebook

It was observed as shown Figure 4.4 below, that only 28.9% use Facebook every day, 27.1% use Facebook once a weak, 41.1% use Facebook couple of days in a week and 2.9% use Facebook once a month from a population pull of 700 students whom participated in the survey.

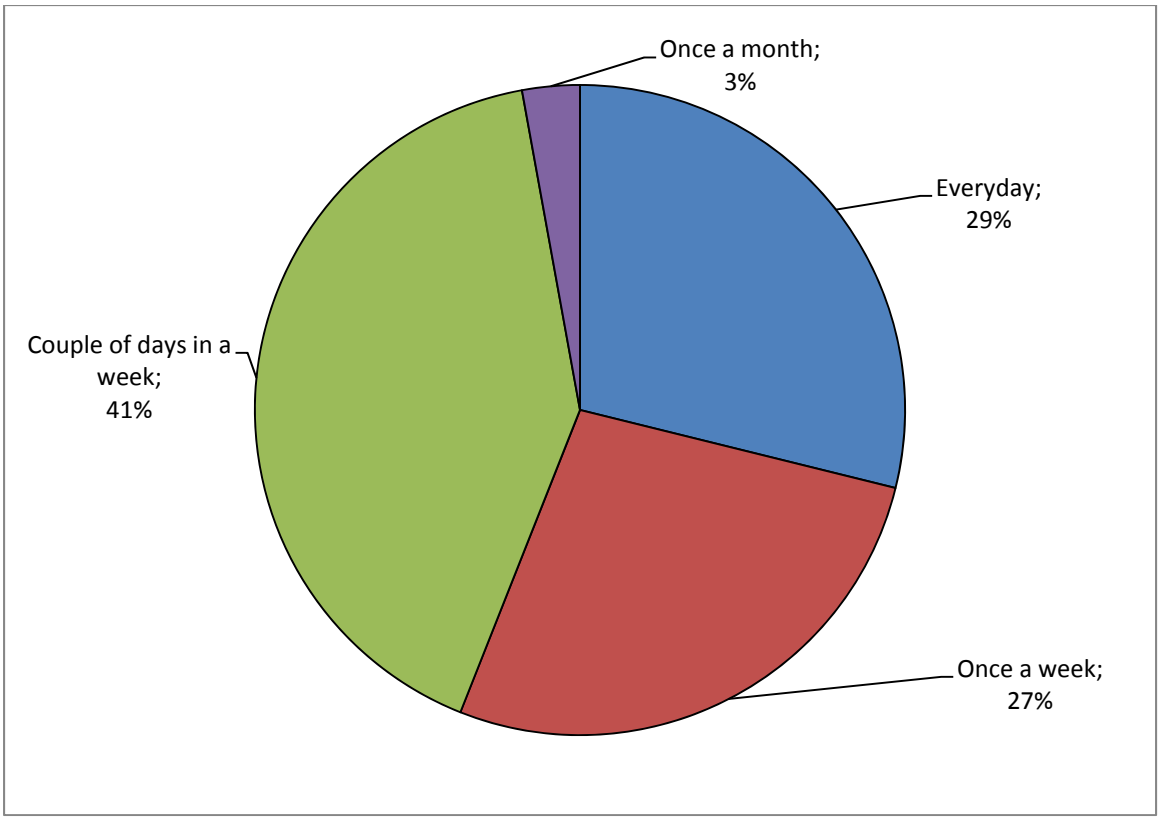

Figure 4.4: How often do students use Facebook

4.2.3 How many hours do students spend on Facebook in an average day

It was observed as shown Figure 4.5 below, that only 50.6% use Facebook for 0-1 hours averagely on a daily basis, 38.3% use Facebook for 2-3 hours averagely on a daily basis and 11.1% use Facebook for 4-5 hours averagely on a daily basis from a population pull of 700 students whom participated in the survey.

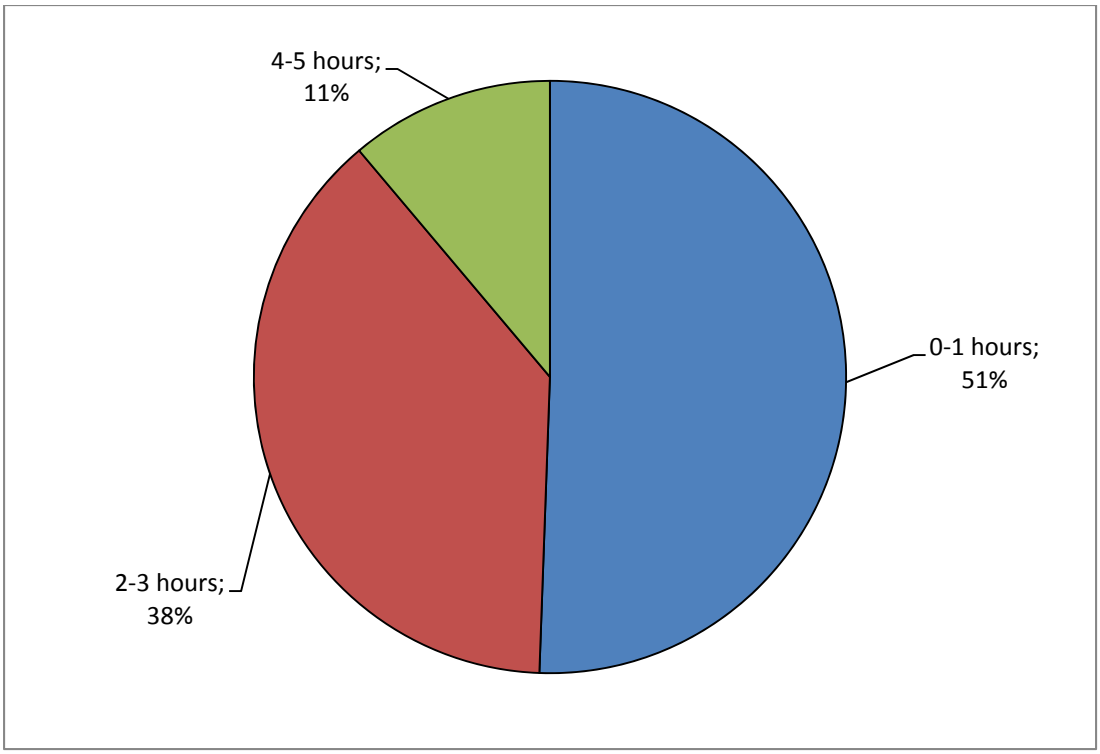

Figure 4.5: How many hours do students spend on Facebook in an average day

4.2.4 How many times do you control your Facebook account in a day

It was observed as shown Figure 4.5 below, that only 17.6% control their Facebook account once in a day, 47.6% control their Facebook account twice in a day, 31.7% control their Facebook account 3 times in a day and 3.1% control their Facebook account 4-5 times in a day from a population pull of 700 students whom participated in the survey.

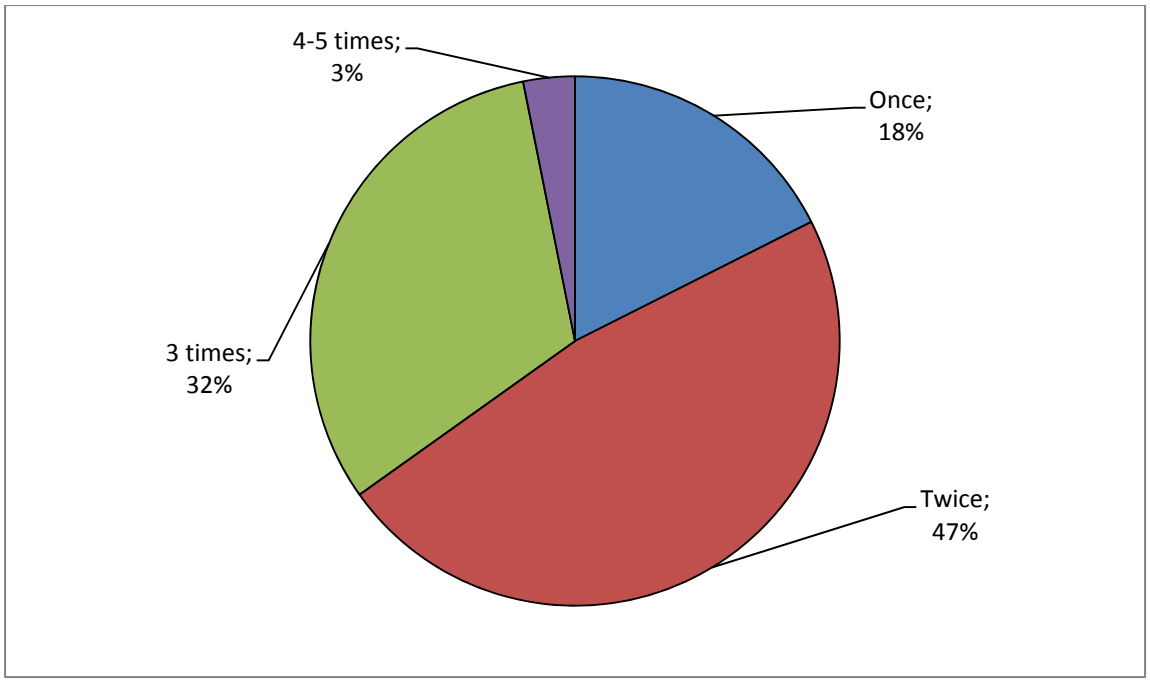

Figure 4.6: How many times do you control your Facebook account in a day

4.3 Data Collection Tools

The questionnaire was developed by the author to investigate how to configure the Facebook settings for safe browsing by students. The questionnaire is made up of 3 dimensions: General/Security settings, Privacy/Blocking, and Support inbox which had 35 items altogether in total. In General and Security settings, 12 items were assigned to it, in order to address the various general and security settings that arise or may arise from the use of Facebook. In Privacy/Blocking, 17 items were assigned to it, in order to address the various privacy and blocking setting that arise or may arise from the use of Facebook. And finally, in Support Inbox 6 items were assigned to address the various support inbox settings that arise or may arise from the use of Facebook.

The participants answered to items on 5 Likert Scale from “Strongly Agree” (5 point), “Agree” (4 point), “Neutral” (3 point), “Disagree” (2 point), and “Strongly Disagree” (1 point). The questionnaire reliability was calculated as 0.95 by using Cronbach’s Alpha for 35 items were calculated to be 0.907. According to the results of the reliability result

in Table 4.2, it can be seen that the Cronbach's Alpha for each dimensions in the questionnaire were listed from 0.911 General/Security settings, privacy blocking 0.889 to Support Inbox 0.840. The result from this study show that the total items (scales) and coefficient of reliability of all dimensions are above 0.70, so that the questionnaire is reliable (Sipahi et al., 2010).

Table 4.2: Reliability test result of the questionnaire

Dimensions	Cronbach's Alpha Reliability
General/Security settings	0.911
Privacy/Blocking	0.889
Support inbox	0.840
Total	**0.927**

4.4 Data Analysis

Questionnaire was used to collect data and was analyzed and interpreted using SPSS 20.0 version. Frequency and percentage was used for analyzing the demographic data with the first part of the questionnaire, Independent sample *t*-test was used to answer question 2, one-way ANOVA to answer questions 3 and 4, and correlation analysis was used to answer questions 5 to 8.

4.5 Procedure

This study was designed in order to investigate how to configure the Facebook settings for safe browsing (university students in Iraq). And for this study to be successfully carried questionnaires were given to over 1000 students in university of Zakho in the country for over 20 days and collected back from randomly volunteered students every 3 days. The questionnaires were given to students in different locations, such as the class room, the faculty building, the cafeteria, etc. This study was conducted at University of

Zakho in different Faculties during the 2014-2015 Spring semesters. The participants were from undergraduate and postgraduate education levels from different year.

The work was done in a period of over 2 months with a population sample of 700 students, the study was quantitative in nature, and survey with questionnaire was design. The survey was administered to students in only University of Zakho in North part of Iraq. After the collection of questionnaires from the students, a total of only 700 correctly filled questionnaires were recovered from the students from various universities altogether, the accumulated data were subjected to various analysis (such as; frequency and percentage, independent *t*-test and one-way ANOVA) in order to give answer to the aim of the study/research questions of the study. Afterwards the results from the data analysis were discussed in details and conclusion and recommendations were drawn from the results of the study.

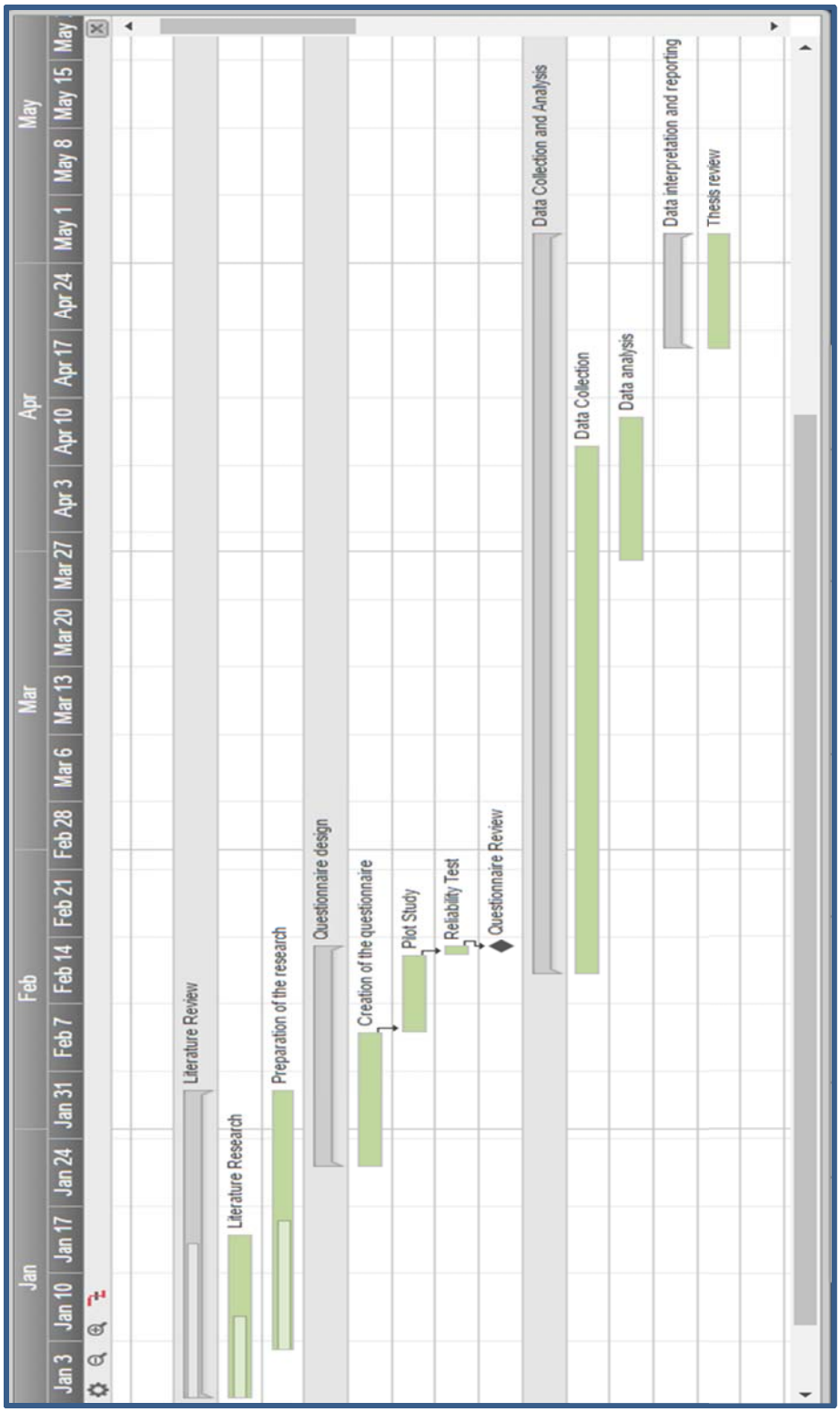

Figure 4.7: Gantt chart of the research

CHAPTER 5

RESULTS AND DISSCUSSION

This chapter discusses the results of the research in sight of the original aims and questions of this research.

5.1 Students' Perceptions on Facebook's Privacy Settings Usage

In order to understand the students' perceptions on Facebook's Privacy Settings usage, descriptive analysis was employed. Table 5.1 below shows the statements, mean and standard deviation for each construct. Most of the constructs were of average response as the means were above 4.0. The means and standard deviations listed below show the student's perceptions of Facebook privacy settings usage.

Table 5.1: The mean and standard deviation of each item

Items	Mean	SD
GENERAL/SECURITY SETTINGS		
1. I do provide my Email in my Facebook account.	4.55	.70
1. I change my password quite often.	4.56	.77
2. My login alerts are given to me at all times.	4.57	.74
3. I get an alert when anyone logs into my account.	4.61	.70
4. Login approval is set by me for optimal security purpose.	4.58	.77
5. I use Facebook app to get security codes when needed.	4.58	.75
6. I manage an Open PGP key on my Facebook profile.	4.50	.84
7. I enable encrypted notifications on my Facebook profile and enable encrypted notifications.	4.48	.84
8. I pick friends I can call to help me get back into my account when my account is blocked.	4.47	.82
9. I review my frequently used web sites.	4.47	.86
10. I choose a family member or close friend to care for my account if something happens to me.	4.52	.81
11. I choose whether I want to keep my account active or deactivate it.	4.63	.64
12. I choose who can see my future posts.	4.53	.75
13. I review all my posts and things I am tagged in.	4.59	.68
14. I limit the audience for posts I am shared with friends or friends of public.	4.62	.67

15. I choose who to send friend requests.	4.58	.72
Total	**4.54**	**.77**
PRIVACY/BLOCKING		
16. I choose who can look me up using the email address I provided.	4.55	.69
17. I do want search engines outside of Facebook to link to me profile.	4.58	.69
18. I prefer to hide my posts when I add a friend to my restricted list.	4.62	.69
19. I prefer to share my posts only with my friends.	4.63	.72
20. Once I block someone, that person can no longer see things I post on my timeline.	4.67	.62
21. Once I block someone, that person can no longer tag me.	4.66	.63
22. Once I block someone, that person can no longer invite me to events or groups.	4.64	.67
23. Once I block someone, that person can no longer start a conversation with me.	4.59	.68
24. Once I block someone, that person can no longer add me as a friend.	4.67	.63
25. Once I block someone, that person can't comment on my posts.	4.63	.67
26. Once I block someone, that person can't comment on my comments.	4.72	.57
27. Once I block messages and video calls from someone, they won't be able to contact me in the Messenger app either.	4.73	.55
28. I do not allow people who are not my friends to follow my posts.	4.74	.57
Total	**4.63**	**.66**
SUPPORT INBOX		
29. Safety center resources for parents, teachers and others are provided by Facebook	4.76	.52
30. Tools and tips that help people stand up for themselves and each other to withstand bullying are provided by Facebook.	4.78	.51
31. Safety checks to connect with friends during a disaster are provided by Facebook.	4.79	.46
32. I learn about what type of sharing is allowed on Facebook.	4.80	.47
33. I learn about what type of content may be reported.	4.82	.46
34. I learn about what type of content may be removed.	4.83	.46
Total	**4.80**	**.48**

From the whole items the highest mean respondents *"I learn about what type of content may be removed"* (M = 4.83; SD = 0.482), followed by *"I learn about what type of content may be reported"* (M = 4.82; SD = 0.466), and *"I learn about what type of sharing is allowed on Facebook"* (M = 4.80; SD = 0.475). And the lowest from the whole items are *"I review my frequently used web sites"* (M = 4.47; SD = 0.858), followed by *"I enable encrypted notifications on my Facebook profile and enable*

encrypted notifications" (M = 4.48; SD = 0.843) and *"I pick friends I can call to help me get back into my account when my account is blocked"* (M = 4.47; SD = 0.820).

The constructs of the proposed research model in chronological order according to the mean totals are as follows: Support and Inbox (M = 4.80; SD = 0.482) which gave the highest total response, followed by Privacy and blocking (M = 4.63; SD = 0.664) and General and security settings (M = 4.54; SD = 0.771) which was the lowest.

5.2 Students' Perceptions on Facebook's Privacy Settings Usage based on Gender Difference

In order to understand the students' perceptions on Facebook's Privacy Settings usage based on gender differences independent samples *t*-test was employed. According to the Table 5.2, concerning the students' perceptions on Facebook's Privacy Settings usage, In all dimensions, female students had higher mean values of (M = 4.81; SD = 0.34) than male students with mean values of (M = 4.79; SD = 0.38). There is no statistically significant differences between genders in this study (p>.05) among all dimensions. The research results showed that male and female students have no different status on perceptions on Facebook's Privacy Settings usage. Similar results were also found in a study conducted by Madejski et al (2011) in Austria showed that there was no significant difference between gender and students' perceptions of Facebook privacy.

Table 5.2: Difference between genders

Dimensions	Gender	N	Mean	SD	Mean Difference	t	p
General/Security settings	Male	350	4.54	.53	.00048	.011	.991
	Female	350	4.54	.57			
Privacy/Blocking	Male	350	4.38	.35	.02000	.710	.478
	Female	350	4.4	.39			
Support Inbox	Male	350	4.79	.38	-.02333	-.858	.391
	Female	350	4.81	.34			

5.3 Students' Perceptions on Facebook's Privacy Settings Usage based on Age Differences

In order to understand the students' perceptions on Facebook's privacy settings usage between different ages, one-way ANOVA was employed. As indicated in Table 5.3, in this study there are statistically significant differences between in all ages towards perceptions on Facebook's privacy settings usage ($p<0.05$). Similar results were also found in a study conducted by Madejski et al (2011). In the literature, there were no studies focusing on age and students' perceptions of Facebook privacy settings. The researcher hopes this study will fill the missing gap.

Table 5.3: Differences between ages

Dimensions	Age	N	Mean	SD	Mean Square	F	p
General/Security settings	18-20	290	4.49	.58	1.265	4.221	**.015***
	21-24	260	4.55	.54			
	25+	150	4.65	.51			
Privacy/Blocking	18-20	290	4.34	.36	.285	2.059	.128
	21-24	260	4.37	.38			
	25+	150	4.41	.39			
Support Inbox	18-20	290	4.81	.38	.038	.295	.745
	21-24	260	4.78	.33			
	25+	150	4.80	.36			

* The mean difference is significant at the 0.05 level.

In General/Security settings dimension, age category 25+ years old had the highest mean values (M = 4.65; SD = 0.51), and there is significantly difference under this dimension for all age categories. In Privacy/Blocking dimension, age category 25+ years old also had the highest mean values of (M = 4.41; SD = 0.39) and there is no significantly difference under this dimension for all age categories. In Support Inbox, age category 21-

24 years old had the highest mean values of (M = 4.81; SD = 0.38) and there is no significantly difference under this dimension for all age categories.

Table 5.4 shows the multiple comparisons of all age groups. This compares the age group in each section within each group between the ages. In General/Security settings dimension, age category 18-20 years old showed significant difference between age group 25+ years old, but there is no significant difference with age group 21-24. Age group 21-24, showed no significant difference with age group 18-20 and 25+ years old. Age group 25+ showed significant difference with age group 18-20 and no significant difference between age group 21-24. In Privacy/Blocking and Support Inbox showed no significant between all age categories (Table 5.4).

Table 5.4: Multiple comparisons of age based difference

Dependent Variable	(I) Age	(J) Age	Mean Difference (I-J)	Std. Error	95% Confidence Interval	
					Lower Bound	Upper Bound
General/Security settings	18-20	21-24	-.06	.05	-.1746	.0489
		25+	**-.16***	.05	-.2863	-.0329
	21-24	18-20	.06	.05	-.0489	.1746
		25+	-.10	.05	-.2227	.0292
	25+	18-20	**.16***	.05	.0329	.2863
		21-24	.10	.05	-.0292	.2227
Privacy/Blocking	18-20	21-24	-.03	.03	-.1029	.0448
		25+	-.08	.04	-.1664	.0148
	21-24	18-20	.03	.03	-.0448	.1029
		25+	-.05	.04	-.1408	.0472
	25+	18-20	.08	.04	-.0148	.1664
		21-24	.05	.04	-.0472	.1408
Support Inbox	18-20	21-24	-.001	.03	-.0811	.0673
		25+	.02	.03	-.0598	.1020
	21-24	18-20	.005	.03	-.0673	.0811
		25+	.03	.04	-.0564	.1124
	25+	18-20	-.02	.03	-.1020	.0598
		21-24	-.03	.04	-.1124	.0564

* The mean difference is significant at the 0.05 level.

5.4 Student Status Perceptions on Facebook's Privacy Settings Usage Based on Faculty Differences

In order to understand the students' perceptions on Facebook's privacy settings usage between different faculties, one-way ANOVA was employed. As indicated in Table 5.5, in this study there are no statistically significant differences between in all faculties towards Facebook's privacy settings usage ($p>0.05$). Similar studies conducted by Jin et al., (2013) also showed that there was no significant difference on faculty and students' perceptions of Facebook privacy policy.

Table 5.5: Differences between faculties

Dimensions	Faculty	N	Mean	SD	Mean Square	F	p
General/Security settings	Education	128	4.58	.53	.078	.256	.857
	Science	210	4.54	.56			
	Humanities	200	4.55	.57			
	Engineering	142	4.53	.53			
Privacy/Blocking	Education	128	4.40	.34	.184	1.331	.263
	Science	210	4.37	.31			
	Humanities	200	4.37	.39			
	Engineering	142	4.31	.44			
Support Inbox	Education	128	4.81	.35	.289	2.245	.082
	Science	210	4.83	.35			
	Humanities	200	4.81	.37			
	Engineering	142	4.73	.39			

* The mean difference is significant at the 0.05 level.

As shown in Table 5.5. For general settings the highest mean was found in the faculty of education (M= 4.58), for privacy the highest mean was in the faculty of education as well

(M= 4.40) and for support inbox, the highest mean was in the faculty of science (M= 4.83).

Table 5.6 shows the multiple comparisons of all faculties. This compares the faculties in each section within each group between the faculties. In all dimensions, between and within each faculties there are no significant differences ($p>0.05$).

Table 5.6: Multiple comparisons of faculty based difference

Dependent Variable	(I) Faculty	(J) Faculty	Mean Difference (I-J)	Std. Error	95% Confidence Interval	
					Lower Bound	Upper Bound
General/Security settings	Education	Science	.04	.06	-.1135	.2007
		Humanities	.03	.06	-.1254	.1877
		Engineering	.05	.06	-.1128	.2233
	Science	Education	-.04	.06	-.2007	.1135
		Humanities	-.01	.05	-.1531	.1282
		Engineering	.01	.05	-.1417	.1650
	Humanities	Education	-.03	.06	-.1877	.1254
		Science	.01	.05	-.1282	.1531
		Engineering	.02	.05	-.1287	.1769
	Engineering	Education	-.05	.06	-.2233	.1128
		Science	-.01	.05	-.1650	.1417
		Humanities	-.02	.05	-.1769	.1287
Privacy/Blocking	Education	Science	.03	.03	-.0647	.1276
		Humanities	.02	.03	-.0743	.1323
		Engineering	.08	.04	-.0379	.2123
	Science	Education	-.03	.03	-.1276	.0647
		Humanities	-.00	.03	-.0903	.0854
		Engineering	.05	.04	-.0569	.1684
	Humanities	Education	-.02	.03	-.1323	.0743
		Science	.00	.03	-.0854	.0903
		Engineering	.05	.04	-.0607	.1771
	Engineering	Education	-.08	.04	-.2123	.0379
		Science	-.05	.04	-.1684	.0569
		Humanities	-.05	.04	-.1771	.0607
Support/Inbox	Education	Science	-.01	.03	-.1160	.0824
		Humanities	.00	.03	-.1016	.1052
		Engineering	.07	.04	-.0376	.1971
	Science	Education	.01	.03	-.0824	.1160
		Humanities	.01	.03	-.0686	.1057
		Engineering	.09	.03	-.0068	.1998
	Humanities	Education	-.00	.03	-.1052	.1016
		Science	-.01	.03	-.1057	.0686
		Engineering	.07	.04	-.0294	.1853

	Education	-.07	.04	-.1971	.0376
Engineering	Science	-.09	.03	-.1998	.0068
	Humanities	-.07	.04	-.1853	.0294

5.5 Relationship between frequency of Facebook usage and the Way the Facebook Account is configured.

In order to understand the relationships between how often students use the Facebook and the way they configure their Facebook account, Pearson correlation was employed. As indicated in Table 5.7, in this study there are no statistically significant differences between how often students use the Facebook and the way they configure their 3with privacy and blocking settings. This therefore also indicated that there is significant negative weak relationship between how often students use the Facebook and the way they configure their Facebook account. For General and Security settings, r (699) = -0.42, p = .264, for Privacy and Blocking settings, r (699) = -0.17, p = .662 and for Support and Inbox r (699) = -0.003, p = .930.

Table 5.7: Correlation between how often students use the Facebook and the way they configure their Facebook account

	How often do you use Facebook?	**General/ Security settings**	**Privacy/ Blocking**	**Support/ Inbox**
How often do you use Facebook?	1	-.042	-.017	-.003
		.264	.662	.930
	700	700	700	700
General/Security settings	-.042	1	**.726****	.012
	.264		.000	.761
	700	700	700	700
Privacy/Blocking	-.017	**.726****	1	.029
	.662	.000		.443
	700	700	700	700
Support/Inbox	-.003	.012	.029	1
	.930	.761	.443	
	700	700	700	700

** Correlation is significant at the 0.01 level (2-tailed).

5.6 Relationship between How Many Hours Students Spend Use the Facebook Daily and the Way They Configure Their Facebook Account

In order to understand the relationships between how many hours students spend use the Facebook daily and the way they configure their Facebook account, Pearson correlation was employed. As indicated in Table 5.8, in this study there are statistically significant differences between how many hours students spend use the Facebook daily and the way they configure their Facebook account but there is statistical difference between general and security setting with privacy and blocking settings. This therefore also indicated that there is no significant positive and negative weak relationships how many hour students spend use the Facebook daily and the way they configure their Facebook account. For General and Security settings, r (699) = 0.027, p = .475, for Privacy and Blocking settings, r (699) = -0.028, p = .463 and for Support and Inbox r (699) = -0.003, p = .932.

Table 5.8: Correlation between how many hours students spend use the Facebook daily and the way they configure their Facebook account

	How many hours do you spend on Facebook in an average day?	**General/ Security settings**	**Privacy/ Blocking**	**Support /Inbox**
How many hours do you spend on Facebook in an average day?	1	.027	-.028	-.003
		.475	.463	.932
	700	700	700	700
General/Security settings	.027	1	**.726****	.012
	.475		.000	.761
	700	700	700	700
Privacy/Blocking	-.028	**.726****	1	.029
	.463	.000		.443
	700	700	700	700
Support/Inbox	-.003	.012	.029	1

	.932	.761	.443	
	700	700	700	700

** Correlation is significant at the 0.01 level (2-tailed).

5.7 Relationship between How Many Times Students Control Facebook Account in a Day and the Way They Configure Their Facebook Account

In order to understand the relationships between how many times students control Facebook account in a day and the way they configure their Facebook account, Pearson correlation was employed. As indicated in Table 5.9, in this study there are statistically significant differences between how often students check their Facebook daily and the way they configure their Facebook account but there is statistical difference between general and security setting with privacy and blocking settings. This therefore also indicated that there is no significant positive and negative weak relationships how often students check their Facebook daily and the way they configure their Facebook account. For General and Security settings, r (699) = 0.002, p = .949, for Privacy and Blocking settings, r (699) = -0.015, p = .702 and for Support and Inbox r (699) = -0.024, p = .523.

Table 5.9: Correlation between how often students check their Facebook daily and the way they configure their Facebook account

	How many times do you control your Facebook account in a day?	**General/ Security Settings**	**Privacy/ Blocking**	**Support /Inbox**
How many times do you control your Facebook account in a day?	1	.002	.015	-.024
		.949	.702	.523
	700	700	700	700
General/Security settings	.002	1	**.726****	.012
	.949		.000	.761
	700	700	700	700
Privacy/Blocking	.015	**.726****	1	.029
	.702	.000		.443
	700	700	700	700
Support/Inbox	-.024	.012	.029	1
	.523	.761	.443	
	700	700	700	700

** Correlation is significant at the 0.01 level (2-tailed).

CHAPTER 6
CONCLUSION

This chapter is a summary of the study and contains the conclusion as well as recommendations for future studies.

6.1 Conclusion

Facebook usage has increased rapidly over the years with over 1.65 billion active users as of January 2016 (Lin, 2016). For this reason it is crucial for students to understand how to configure Facebook settings for safe browsing. The increase in social network usage has resulted in an increase in cyber-bulling and internet crime through social networking sites hence the need to secure settings to avoid being a victim (Jin et al., 2013).

Results have shown that the average mean values of items on the questionnaire were between 4.5 and 4.8 out of 5. The average mean rating was high and for this reason we can conclude that students have the knowledge of configuring Facebook for safe browsing. Students have indicated that they are aware of the contents that is restricted on Facebook as well as steps to follow to prevent cyber-bulling, this was indicated by the highest mean which was found in the section for Support Inbox.

Findings have also shown that there was no significant difference between Security Settings, Privacy and Support Inbox. For this reason we can conclude that gender does not influence one's knowledge of configuring Facebook settings for safe browsing. In addition, there was no significant difference between faculty and students' perceptions of Facebook privacy settings.

Furthermore, results have shown that there was a significant difference between the age group 21-24 and students' perceptions of Facebook privacy settings. This is because when students reach 20 years there have more knowledge of how to secure their social network sites since more than 70% of them fall victims of cyber-bulling and being

exposed to explicit content during their teen ages and by the time they reach 20 they are aware of how to configure settings for safe browsing (Valenzuela et al., 2009).

6.2 Recommendations

The study was conducted over a short period of time during the 2015-2016 spring semester therefore there is need for further research that will be done over a longitudinal period of time. In addition, further research should be done targeting at many universities to involve a larger number of participants.

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APPENDICES

APPENDIX 1

QUESTIONNAIRE

INVESTIGATING HOW TO CONFIGURE THE FACEBOOK SETTINGS FOR SAFE BROWSING

This questionnaire aims investigating how to configure the Facebook settings for safe browsing. You are kindly expected to choose the best answer that you feel is correct. This survey is part of an MSc Thesis. The results of this questionnaire will solely be used for the analysis in the research report, and will not be provided to any third party in any way, and will be kept in strict confidence.
Thanks in advance for taking time to answer our questionnaire.

Idrees H. Naaman (Master Student)

SECTION I: Personal Information (Please tick the most appropriate option applicable to you)

1) Gender a) Male b) Female

2) Age a) 18-20 b) 21-24 c) 25+

3) Faculty: a) Education Faculty b) Science Faculty
c) Humanities Faculty d) Engineering Faculty

4) Academic Education level : **a)** Undergraduate b) Master c) PhD

SECTION II: Facebook Usage (Please tick the most appropriate option applicable to you)

5) How long have you had a Facebook account?
a) 1-6 months b) 7-12 months c) 1-2years d) more than 3 years

6) For how long have you been using Facebook regularly?
a) 0 – 3 months b) 3 – 6 months c) 6 – 12 months
d) 1 – 2 years e) 2 – 5 years f) more than 5 years

7) How often do you use Facebook?
a) Everyday b) Once a week c) Couple of days in a week
d) Once a month e) Couple of times in a month f) Once in two months
g) Once a year h) Couple of times in a year

8) How many hours do you spend on Facebook in an average day?
a) 0- 1 b) 2- 3 c) 4-5 d) 6+

9) How many times do you control your Facebook account in a day?
a) Once b) Twice c) 3 times

d) 4-5 times e) 6-10 times f) 11-15 g) 16+

SECTION III: Use of Facebook's Privacy Settings (Please tick the most appropriate option applicable to you)

Items	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
GENERAL/SECURITY SETTINGS					
1. I do provide my Email in my Facebook account.					
2. I change my password quite often.					
3. My login alerts are given to me at all times.					
4. I get an alert when anyone logs into my account.					
5. Login approval is set by me for optimal security purpose.					
6. I use Facebook app to get security codes when needed.					
7. I manage an OpenPGP key on my Facebook profile.					
8. I enable encrypted notifications on my Facebook profile and enable encrypted notifications.					
9. I pick friends I can call to help me get back into my account when my account is blocked.					
10. I review my frequently used web sites.					
11. I choose a family member or close friend to care for my account if something happens to me.					
12. I choose whether I want to keep my account active or deactivate it.					
PRIVACY/BLOCKING					
13. I choose who can see my future posts.					
14. I review all my posts and things I am tagged in.					
15. I limit the audience for posts I am shared with friends or friends of public.					
16. I choose who to send friend requests.					
17. I choose who can look me up using the email address I provided.					
18. I do want search engines outside of Facebook to link to me profile.					
19. I prefer to hide my posts when I add a friend to my restricted list.					
20. I prefer to share my posts only with my friends.					
21. Once I block someone, that person can no longer see things I post on my timeline.					
22.Once I block someone, that person can no longer tag me.					

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
23. Once I block someone, that person can no longer invite me to events or groups.					
24. Once I block someone, that person can no longer start a conversation with me.					
25. Once I block someone, that person can no longer add me as a friend.					
26. Once I block someone, that person can't comment on my posts.					
27. Once I block someone, that person can't comment on my comments.					
28. Once I block messages and video calls from someone, they won't be able to contact me in the Messenger app either.					
29. I do not allow people who are not my friends to follow my posts.					
SUPPORT INBOX					
30. Safety center resources for parents, teachers and others are provided by Facebook.					
31. Tools and tips that help people stand up for themselves and each other to withstand bullying are provided by Facebook.					
32. Safety checks to connect with friends during a disaster are provided by Facebook.					
33. I learn about what type of sharing is allowed on Facebook.					
34. I learn about what type of content may be reported.					
35. I learn about what type of content may be removed.					

APPRENDIX 2

REQUEST LETTER

6 February 2016

University of Zakho
Zakho international road
Duhok, Kurdistan
Iraq

To Whom It May Concern:

Dear Sir or Madam:

IDREES HAJAR NAAMAN (20146540) is a current student at Near East University, Cyprus and has been authorized by the Department of Computer Information Systems to undertake a Survey on; “Investigating how to configure the Facebook settings for safe browsing”.

This is to fulfill the requirements of a degree in Master of Science in Computer Information Systems. The survey shall be anonymous and all gathered data shall be used for educational purposes only. I am kindly requesting you to permit her in gathering the necessary data at your university.

Sincerely,

Assoc. Prof. Dr. Nadire CAVUS

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