

**THE ROLE OF SOCIAL MEDIA IN EMPOWERING  
THE INVOLVEMENT OF WOMEN IN INFORMATION  
TECHNOLOGY WORKFORCE IN IRAQ**

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**UUM COLLEGE OF ARTS AND SCIENCES**

**UNIVERSITI UTARA MALAYSIA**

**2016**

**THE ROLE OF SOCIAL MEDIA IN EMPOWERING  
THE INVOLVEMENT OF WOMEN IN INFORMATION  
TECHNOLOGY WORKFORCE IN IRAQ**

**A dissertation submitted to Dean of Awang Had Salleh Graduate School in**

**Partial Fulfillment of the requirement for the degree**

**Master of Science in Information Technology**



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## Abstrak

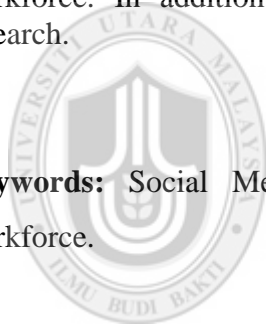
Kurangnya penglibatan tenaga kerja golongan wanita dalam bidang Teknologi Maklumat (TM) di Iraq dapat diperhatikan sejak beberapa tahun kebelakangan ini. Hakikatnya, penggunaan media sosial secara meluas dan rancak di Iraq merupakan salah satu cara yang berkesan yang boleh memperkasakan golongan wanita sebagai tenaga kerja dalam bidang TM. Kajian ini bermatlamat untuk menyelidik kesedaran wanita tentang penggunaan media sosial yang memperkasakan mereka sebagai tenaga kerja dalam bidang TM dan peranan media sosial untuk memperkasakan wanita dalam sektor ini. Untuk mencapai objektif kajian dan bersandarkan teori feminisme siber, kajian ini melakukan satu tinjauan dalam kalangan pelajar wanita di Kolej Pendidikan Ibn al-Haytham, Universiti Baghdad. Kajian ini cuba melihat cara media sosial meningkatkan bilangan penglibatan golongan wanita sebagai tenaga kerja dalam bidang TM. Satu sampel kajian yang melibatkan seramai 162 orang pelajar wanita dari kolej tersebut telah digunakan. Kaedah kuantitatif digunakan untuk mengutip data. Dapatan kajian menunjukkan terdapat hubungan yang signifikan antara kesedaran wanita dan galakan kepada penglibatan wanita sebagai tenaga kerja dalam bidang TM menerusi penggunaan media sosial. Selain itu, terdapat hubungan yang signifikan antara pemerksaan golongan wanita dengan galakan kepada penglibatan wanita sebagai tenaga kerja dalam bidang TM menerusi penggunaan media sosial. Oleh yang demikian, kesedaran wanita dan pemerksaan wanita melalui penggunaan media sosial merangsang penglibatan wanita sebagai tenaga kerja dalam bidang TM. Selain itu, kajian ini turut menyarankan beberapa cadangan untuk kajian pada masa yang akan datang.

**Kata kunci:** Media sosial, Pemerksaan wanita, Teori feminisme siber, Tenaga kerja TM.

## Abstract

The underrepresentation of the women workforce in the field of Information Technology (IT) in Iraq has been closely observed over the last few years. One of the facts is that social media have been widely and intensively used in Iraq, which is an effective way to empower women in the IT workforce. This study aimed to investigate women's awareness of using social media to get empowered in the IT workforce as well as the role of the social media in women empowerment in this sector. In order to achieve the objectives of this research and based on the theory of cyberfeminism, the current study conducted a survey amongst the female students of the University of Baghdad - College of Education Ibn al-Haytham and tried to find out how the use of social media is contributing to the growth of women participation in the IT workforce. For this purpose a sample of 162 female students was taken from this college. The quantitative method was used to collect data for this study. The findings in this study revealed there was a significant relationship between women's awareness and the encouragement of women in the IT workforce through the use of the social media. Besides, there was a significant relationship between the empowerment of women and the encouragement of women in the IT workforce through the use of the social media. Hence, women's awareness and empowerment of women through the social media encouraged the involvement of women in the IT workforce. In addition, this study recommends several suggestions for further research.

**Keywords:** Social Media, Women empowerment, Cyberfeminism theory, IT workforce.



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## Acknowledgment

### In the Name of Allah, the Most Gracious and Most Merciful

First and foremost, all praise to Allah for providing me the strength, perseverance, and wisdom to have this work done on time.

There are a number of individuals whom I owe my deepest gratitude. Firstly, I would like express my deepest gratitude to my supervisors **Dr. Muhammad Ikhwan Jambak** and **Dr. Shafiz Affendi Mohd Yusof** for their intellectual guidance and kind support given to me during the period of the study. Secondly, my heartfelt gratitude also goes to my Evaluators, **AP Md Zahir Mat Cha** and **Dr. Zahurin Mat Aji @ Alon** who supported me throughout my research process with their vital support and knowledge.

I would also like to express my gratitude and dedicate this thesis is especially to my father, who is my best friend **Ghanim Mohammed Rmaidh**. His encouragement helps me and expresses confidence to complete my study. Same goes to my mother **Shukriya Abdulkareem Ali**. Who has support and continuously prayed for me during my studies. I pray to Allah for his blessing on both my parents.

I want to special express gratitude and dedicate this thesis to my Uncle **Sabah Abdulwahid** and his wife **Iman Ibraheem**. For their encouragement throughout accomplish my study.

I dedicate this thesis to my husband **Mustafa Sabah Abdulwaheed** and my daughter (**Laya**) who unremittingly supported me during my years of study. They made this work possible.

I am also grateful to **my brothers and sisters** for their helps and contributions, too many moments of insight, inspiration and support throughout my study.

I am deeply grateful to my family (**all my aunts and uncles**) for their love and support during my Master studies. I truly could not have achieved this milestone without their supports.

Lastly, I express my deepest thanks to Ministry of Education in Iraq for helping and supporting me and giving necessary advices and guidance and arranged all facilities to make my study (Master Information and Technology) easier.

I say thank you to the staffs of Information and Communication Technology, College of Arts and Science, University Utara Malaysia and those that contributed indirectly towards the success of my studies.



**THANK YOU UUM**

**RAMMAH GHANIM MOHAMMED**

**January 2016**

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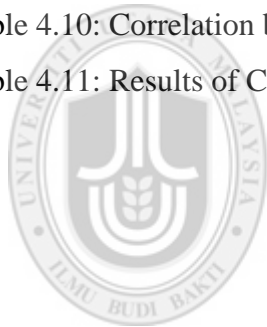
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## List of Abbreviations

<b>CSO</b>	Central Statistical Organization
<b>COBOL</b>	Common Business Oriented Language
<b>CS</b>	Computer Science
<b>DV</b>	Dependent Variable
<b>ENIAC</b>	Electronic Numerical Integrator and Computer
<b>IV</b>	Independent Variable
<b>IT</b>	Information Technology
<b>STEM</b>	Science, Technology, Engineering and Mathematics
<b>SPSS</b>	Statistical Packages Social Science
<b>UNDP</b>	United Nations Development Programme
<b>VIF</b>	Variation Inflation Factors
<b>AQ</b>	Awareness Questions
<b>EQ</b>	Empowerment Questions
<b>ENQ</b>	Encouragement Questions
<b>MIS</b>	Management Information System
<b>SD</b>	Standard Deviation

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# CHAPTER ONE

## INTRODUCTION

### 1.1 Introduction

Information Technologies (IT) refers to the integration of telecommunication networks, computers, and audio-visual systems used to create, access, store, transmit, and manipulate information (Bolanle, Zhang, Oluwadare & Akintola, 2013). With such integration, it supports various applications in various fields like business, education, healthcare, and entertainment. Currently, it integrates also digital social media networks such as Facebook, Twitter, and YouTube (Ajjan, Beninger & Crittenden, 2014). There are literally hundreds of different social media platforms (e.g., blogging, micro-blogging, social networking, text messaging, shared photos), in which they have fundamentally changed the way individuals, communities, and organizations communicate and collaborate (Correa, Bachmann, Hinsley & de Zúñiga, 2013). Currently, social media is referred to as a web-based service that allows individuals to construct a public or semi-public profile within a bounded system (Borrero, Yousafzai, Javed & Page, 2014).

Having been incorporated with various utilities, social media has infiltrated people's daily life with amazing rapidity to become an important social platform for computer-mediated communication (Lin & Lu, 2011). This is because they create, share, and/or exchange information and ideas in virtual communities and networks (Poonia, Scholar & Bhurani, 2014) by providing a variety of new behaviours that were not previously possible, such as online collaborative authoring, online collaborative reviewing, online collaborative editing, online collaborative associating, and online collaborative experimenting. The use of social media with its



various tools has the potential to impact the lives of people in the developing world (Wagner, Vollmar & Wagner, 2014).

In short, IT with the Internet in particular, has created a new era for social interaction. The Internet as a social space has provided various utilities for social interaction. As in the real world, the virtual world is exposed to gender sensitivity. In accordance, it raises questions about the essence of gender issues and which gender-based characteristics affect certain situations. In that sense, the Internet influences human activity, which also affects social-emotional and educational preferences. The link between these is expressed in the two qualities of the Internet: a means of communication and a centre of information (Baruch, 2014). Notably, there is a tremendous potential for using social media tool for the empowerment of women worldwide (Ajjan et al., 2014).

In education sector, females are seen less preferred to venture into the famously referred to science, technology, engineering, and mathematics (STEM) fields. They also have less interest in business sector (Moreno, González & Segura, 2014). As a result, the trend shows gender imbalance in the participation of women in the IT industry (Adya & Kaiser, 2005). In fact, according to Crump, Logan and McIlroy (2007), most women do not actively seek to be employed in IT. This should be overcome because the IT field should be ventured by the entire population in order to fulfil the need for skilled personnel (Wentling, 2009). The phenomenon is just similar in Iraq, in which the IT field is dominated by male personnel. Additionally, the rate of IT implementation and utilization in Iraq is the lowest in the Middle East region. This further drops the involvement of females in IT industry in Iraq (Al-Rawi, 2014).

On the other hand, it is widely recognized that women's participation in all levels of management and entrepreneurs, has substantially increased over the last generation (Orser, Riding & Stanley, 2012). The attraction, retention, and advancement of women in the advanced technology sectors has increased across countries (Orser et al., 2012). One possible reason for this could be because of the impact of the pervasiveness of the social media.

Despite the lack of participation of women in the field of IT, they tend to use social media for social interaction and relationship maintenance in the Internet. In contrast, males are more likely to spend their time online engaging in more task-focused activities such as reading news and retrieving financial information (Kimbrough, Guadagno, Muscanell & Dill, 2013). That makes women use social media more actively than men (Chen, 2013).

As soon as the social media burst onto the Internet as a new type of mediated communication, women as well as men quickly adopted into it. Both use the social networks for a variety of reasons ranging from establishing and maintaining social contacts, supporting informal learning practices, reflecting on daily life, and sharing and discussing the continuously increasing body of information available over the Internet (Kimbrough et al., 2013). However, in the context of social influence, research suggests that women tend to be more sensitive to the opinions of others and therefore social influence is more salient when forming an intention to use new technology (Borrero et al., 2014).

One of the theories that can be used to illustrate the power of technology and social media with women is Cyberfeminism theory founded around the mid-1990s (Heuwagen, 2014). The mass convergence of feminists occurred as a result of a spike

in the advancement of Internet usage and social media websites led to the emergence Cyberfeminism theory. Cyberfeminism theory focuses on relationship between women and technology for empowerment (Angela, 2013). Therefore, this study applies Cyberfeminism as its theoretical framework.

## **1.2 Problem Statement**

In this century, the role of women in Science, Technology, Engineering and Mathematic (STEM) is very important (Chou, Yen & Sun, 2014), because women have the ability to adapt and make perseverance (Bimrose et al., 2014). However, literatures show that women do not commonly choose STEM studies. Consequently, their participation in IT business and related sectors in general is still low (Moreno et al., 2014). Similar in Iraq, UNDP Human development report in 2014 reveals that the participation of Iraqi women in the field of IT is very low compared to the Iraqi Men (UNDP, 2014).

Various factors have been considered possible for this phenomenon. There are many social factors that affect women such as social expectations, conflicts in family, and work. These factors can affect women in their participation in IT workforce. In addition, structural factors such as the absence of role models, culture, professional, the presence of non-official sites, and lack of teachers also contribute to the lacking (Armstrong & Riemenschneider, 2014; Moreno et al., 2014).

Even though women participate less in the IT field, it does not mean that their ability to perform in mathematics and science is low. In fact, it has been found that even though they are relatively limited, they do actively contribute to computing based on knowledge and technological innovation through publications and patents (Gayles,

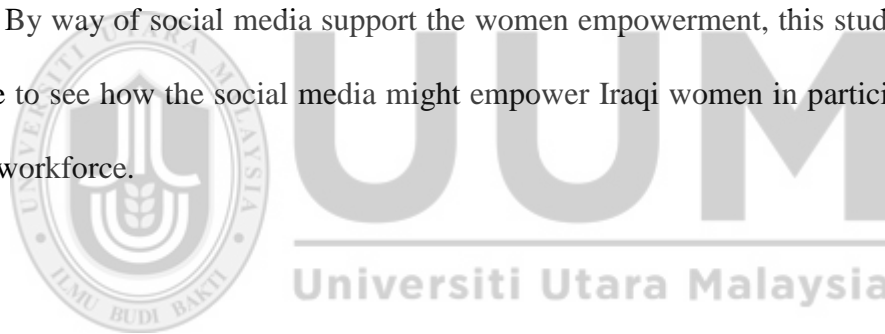
2014). However, boys conceptualize computers differently from girls (Baruch, 2014). Particularly, they see a computer as a challenging game, while the girls view it as a tool, or a tool for carrying out tasks. The same was found among male adults who see computers as self-empowerment tools, while female adults see it as a tool for cooperation and communication (Baruch, 2014). This indicates that gender affects perceptions towards computer application. This difference should be deeply studied because social media tools and platforms have the potential to impact the lives of people including women worldwide (Ajjan et al., 2014).

Although currently, the male dominates the use of social media, it is still an important means to support women's empowerment by encouraging self-expression. The ability for the creator to share thoughts, concerns, and emotions with others, and attract attention, share, and participate in return, results in an improved psychological well-being and, through repetition, a sense of self-empowerment (Ajjan et al., 2014; Khan and Moin, 2013). In addition, social media can provide ways for women empowerment not limited to these following but including improve their income, improve their own and their families' well-being, advance their children's education, and improve their status in their homes and communities (Hafkin, 2015). Nevertheless, social media can be a platform for women to have discussion, sharing information and ideas on various matters. Social media also enabling them to educate themselves, let them gain awareness, exchanging opinions and participate effectively (Karolak & Guta, 2015).

Although the use of the Internet and social media in Iraq is relatively low, it is gradually increasing since the last ten years (Abedalla, Escobar & Al-Quraishi, 2014; Hashim, 2015). The users use them for various purposes. Hashim (2015), who surveyed among students of University of Baghdad found that the highest percentage

(33.33%) of the female students use the Internet only to connect to their social media accounts in Facebook and Twitter, while 3% to 29% use them for other online activities.

Based on the previous studies as mentioned above, social media have influences in women empowerment and awareness. As a part of IT, social media have the possibility to increase their user's awareness about IT in general and also jobs in this field. However the fact is quite the opposite. Although it is the fact that women in Iraq using social media more frequent than the men, but the involvement of women in Iraq in IT workforce is less than the men. Therefore, this study would like to see how the social media influence the women in Iraq on their awareness about jobs in IT. By way of social media support the women empowerment, this study also would like to see how the social media might empower Iraqi women in participating in the IT workforce.



### **1.3 Research Questions**

1. What is the women awareness for using social media in influencing them into the IT workforce in Iraq?
2. How do social media empower Iraqi women in participating in the IT workforce?

#### **1.4 Research Objectives**

This study is carried out to solve the problem discussed in earlier section and to answer the questions in the previous section. In conjunction, it aims at achieving the following objectives:

- 1- To determine the women awareness for using social media in influencing them into the IT workforce in Iraq.
- 2- To identify the role of social media in empowering Iraqi women to influence them into the IT workforce.

#### **1.5 Significance of Research**

IT is one of the fastest growing industries in developing countries including Iraq. The absence of the Iraqi women in the IT workforce represents a loss of opportunities, talent, and creativity because the Iraqi women have less awareness about IT workforce. There are many factors discouraging women to participate in IT field such as social and structural factors.

Meanwhile, several studies have proven that the women in Iraq use social media significantly. This could be utilized as an encouraging source for the women to increase their awareness in IT workforce and empower them on the factors that they face. Based on that, this study attempts to bridge the gap. Hence, this study discusses the role of social media by bringing awareness about IT workforce and empowering women on factors that may hinder the attraction and participation of women in IT workforce in Iraq.

## **1.6 Research Scope**

Hashim (2015) indicates that the number of female users of social media is great in University of Baghdad - College of Education Ibn al-Haytham. Therefore, this study focuses on the female students in the same university due to the same reason mentioned above.

## **1.7 Summary**

This chapter gives an insight on the work by describing the motivation factors that lead to the selection of the area being studied. It also explains the objectives of the research, as well as its significance. These elements are important as they ignite the implementation of the research. This research focuses on the role of social media in empowering the involvement of women in IT workforce in Iraq. The rationality for linking the effects of social media on women empowerment to participate in IT workforce is based on the literatures and the premises of Cyberfeminism theory. Further, the next chapter reviews literatures related to this study.

## CHAPTER TWO

### LITERATURE REVIEW

#### 2.1 Introduction

This chapter reviews the literatures related to the utilization of social media such as Twitter, Facebook and Youtube, gender variances and Internet usage, gender stereotypes, challenges the women face in the IT field, and the possible motivations to encourage them to venture into this field. Also, this chapter explains related theories on IT workforce, including Cyberfeminism theory as the theoretical framework in order to empower women to venture in IT workforce.

#### 2.2 Social Media

The definition of 'social media' has been found for many years as a method for people to create relationships with others and interact with society (Spiess, Joens, Dragnea, & Spencer, 2014). 'Social media' has become an activity that is mainly done on the Internet because of the increase in the technologies used for communication, as well as the popularity of the Internet. Sites that promote such activities include Bebo, Friendster, Xanga, MySpace, and of course, Facebook (Spiess et al., 2014). Social media is one of the distinctive services on the Web that provide services to (1) Configure the list of users' friends who they connect with each other, and (2) access and view their communications as a list and those created by others users in the context of system (Boyd & Ellison, 2007).



Since 2002, social media has become popular and has enticed hundreds of millions of users (Boyd & Ellison, 2007). Federal Bureau of Investigation has revealed that nearly 200 social media tools have been used for the purpose of collaboration, communication, and partnership (Timm & Duven, 2008). While there are many tools provided for the users, they are accessed by a big number of users daily, like Facebook was accessed by 400 million users and MySpace was accessed by 100 million users daily in 2008 (Timm & Duven, 2008). Making connection in social media is easy because every user creates his or her profile in his or her account (Tufekci & County, 2008) that allows other users to decide on making connections (Boyd & Ellison, 2007).

The social media is created to make people feel they are connected with other people, even though they are busy with their works (Spiess et al., 2014). Not only they connect themselves with their friend, but also with people whom they have newly known through a work, school, or organisation (Spiess et al., 2014). This can be achieved by looking for users and adding them as friends for the purpose of sharing information and becoming part of other networks that these individuals participate in (Boyd & Ellison, 2007).

Being 'friends' on social media is a case where two profiles are linked together (Tufekci & County, 2008). Thus, being 'friends' expands an individual's network significantly, such that this person can exchange information with more users and meet needs (Spiess et al., 2014). Additionally, being 'friends' with other individuals on social media enables a user to interact by different ways, like participating in online games, sharing movie or music, reading journal entries, sending public and private messages, and others (Livingstone, 2008). In such cases, the author's point of view on this subject, publishing and creating of content in the Internet has become an

integral part of the user's identity as well as social relationships and lifestyle part (Livingstone, 2008). With that, a loss or gain of a friendship can be just as easy as a push of a button, and a relationship between friends on social media may be with user who is not friend in actually (Livingstone, 2008).

Research confirms that it attracts many users to register and participate in social media through exchanging ideas and information (Timm & Duven, 2008). Now, one of the new features in social media is privacy, which is determined by the account owners (Timm & Duven, 2008). With that, Twitter, Facebook, and Youtube have been utilized by students in college to interact among themselves (Tufekci & County, 2008). In fact, now a user opens a few accounts: one for school, another for business use, and another for private use (Tufekci & County, 2008).

It is significant to realize that every form of social media focuses on social status and self-presentation (Tufekci & County, 2008). So, each individual who registers in social media must select a photo to share on his or her profile, and such photo is considered as a reflection of him or herself (Barker, 2009). Regarding that, some individuals use a personal photographs of modern or a photo with friends, whereas other individuals use a different image reflecting what is inside him and what is represented by the characters they love (Barker, 2009). The photo is essential from a social media perspective because it showcases how a person wants to be perceived by other people (Barker, 2009). Social situation is considered as a very necessary segment of social media as it serves a very essential function in how each person's profile is viewed by other people (Tufekci & County, 2008). For that, majority of social media sites the number of 'friends' an individual has, as well as any updates a person may have written to another individual recently (Tufekci & County, 2008). Thus, a lot of social media members will look for other people to connect with,

despite the fact that they would not like to be linked with any particular individuals personally (Tufekci & County, 2008).

Numerous social media tools established in the 1990s incorporate such features, such as BlackPlanet, Asian Avenue, and Six Degrees. Also, there are tools that provide blogging feature such as Epinions and Blogger. In fact in Epinions, individuals can browse product reviews or give a review of their own (Edosomwan, 2011).

Meanwhile, Napster and ThirdVoice were two tools popular in the 1990s but have already been discarded from the market. ThirdVoice enabled users to post comments on webpages for free. Regarding that, other competitive products raised concerns that the comments were often slanderous or vulgar. Meanwhile, Napster was an application that enabled the exchange of files on peer-to-peer basis. In such environment, people were permitted to exchange music files, thus eliminating the use of normal distribution ways. As a drawback, it eventually violated the copyright law (Edosomwan, 2011).

In 2000, social media played a main role with the development of such tools. Such massive development evolves and improves the interaction between people and organisations that share a common interest, such as movies, education, music, and friendship. These platforms include LunarStorm, Cyworld, Ryze, Wikipedia, and Six Degrees. They were followed by Fotolog, Friendster, and Sky Blog in 2001, which were later followed with MySpace, lastFM, tribe.net, LinkedIn, Hi5, and others in 2003. The evolution was continued when in 2004, common names like Dogster and Mixi and Facebook Harvard were launched. Eventually, in 2005, major tools such as YouTube, Keyword, Black Planet, and Yahoo!360 emerged (Junco, Heibergert, & Loken, 2010).

Among all tools, Facebook is essential in communication among many people. It is used to acquire information and share knowledge. It has special features, which include the ability to communicate with different individuals all over the world of any age who would like to use social media for different purposes like sharing of opinions and ideas in different fields, such as engineering, nursing, business, education, and infrastructure. It has hundreds of pages for different organisations, and it is used to locate jobs and to find friends (McAndrew & Hye, 2012; Rutledge, Gillmor & Gillen, 2013; Al-mukhaini, 2014).

Meanwhile, YouTube (launched in 2005) is considered as the most common online video tool in the world, where millions of individuals can share, discover, and watch video of any topic. On top of that, every video uploaded on YouTube can be published and shared on another websites, even if the original file is still hosted on the YouTube server (Susarla, Oh & Tan, 2012).

In fact, it gives the possibility of its user to interact with each other through the comments, and the exchange of “likes” on other videos (Dale, Xu & Jiangshuan, 2008). In YouTube, individuals also share instructional videos, such as do-it-yourself, step-by-step guides, educational information lessons, tutorials and PowerPoint presentations (Susarla et al., 2012) for the benefits of the society.

While YouTube is for video, Twitter is considered as one of the most widespread blog service. It carries ‘discover what is new in the world around you’ slogan, was launched in 2006. The primary purpose of Twitter is to enable communication between people through short messages. These messages play an essential role between people, especially for students of different higher education levels, by

enabling them to share ideas and news about anything such as health, business and fashion (Goroshko, Samoilenko & Fairfax, 2011).

Twitter is an online service that enables users to share status updates with other users. It is a site that permits users to communicate with each other and read and send updates from other users in the same location, known as 'tweet'. It can be explained as a mixture of blogging and immediate electronic messaging. Twitter has created itself as an important means for communication, news and questions and answers, also for sharing links, videos and photos, along with having many advantages for both personal and business purposes (Wiid, Africa, Cant & Nell, 2013).

Meanwhile, MySpace is considered as one of the most widespread social media tool. One unique feature of MySpace is that it enables individuals to customise their personal information and to provide detailed data on their interests and about themselves. It also has special features such as profile for musical persons where users they can listen and download their songs in mp3 format (Edosomwan, 2011).

### **2.3 Social Media and Women**

Generally, social media supports the creation and exchange of user-generated contents (Tufekci & County, 2008). It has also been proven as a potential tool for mobilising attention and accountability to women's rights, and challenging discrimination and stereotypes (Nowacka & Estelle, 2015). In fact, Chen (2013) found that women use social media especially blog more than men.

However, in terms of variations, previous studies discovered that men use more tools than women, based on their needs. This includes searching for job and searching for dates, reading policies, accessing information about sports, playing games, reading

news, and searching for financial information (Kimbrough et al., 2013). Besides, both men and women make use of social media tools to learn from others, and to strengthen social relations (Kimbrough et al., 2013).

Nevertheless, there are tremendous potentials for using social media platforms as a means for empowering women around world. As an example, social media tools like Twitter, Facebook, and Instagram play significant roles in their engagement in the Arab Spring, which supports political empowerment. This further strengthens their psychological empowerment (Newsom & Lara, 2012).

In addition, Lehtonen (2014) found that the social media worked well as a general tool during the Arab uprising it also empowered the women activists at personal level, which functioned as an encouragement system among the women. Women were eager to participate in the uprising and in the politics of their country when social media offered a place for freedom of expression, increased awareness, and encouragement among women.

With such awareness, Zaidan et al. (2015) discovered that women in Palestine, Iraq and other Middle East countries use social media tools to educate underserved women. They give a free health counselling using those tools besides organizing health education programs. Such initiatives are highly potential because adaptation into the tools is flexible and easy. With that, they could be used in approaching the society efficiently and effectively.

Furthermore, Abisola, Oyesomi, Nelson and Omole (2014) found out that social media empowers and encourages women in diverse ways, one of which is that the social media encourages women to engage in economic activities that build-up networks with colleagues, business partners, workers, and clients.

## **2.4 Advantages of Social Media Application**

Social media is known to have numerous advantageous in users' daily operations. Among the benefits include creativity, self-expression, and wellbeing (Collin, Rahilly, Richardson & Third, 2011).

### **2.4.1 Creativity**

When the web technology got advanced, Burgess, Foth and Klaebe (2006) discovered that the dramatic upsurge of contemporary digital technologies has changed the world state through creating endless opportunities for non-professionals to generate and channel information of various nature. It was extended by Bruns (2008), who later discovered that it is a transition between “users” and “producers”. The information in question can be further divided into two sub-types; (1) creative content – the authentic product of one’s mind, and (2) remixed one – a re-verbalisation of existing texts through unique wording. Online platforms like Flickr, blog, and YouTube and their interconnections have opened extensive possibilities for the distribution and re-distribution of such content through relevant social channels. A huge portion of the socially active population worldwide consists of young people who manage to extract the most advantages of the current digital environment. This makes media involvement is now part of their ordinary daily activities and social interaction.

With such influence, people have gradually come to establish content sharing as a substantial means for expressing their individuality and connecting to desired social groups. Their sharing practices include uploading photos and videos, blogging, and creative expressions like digital operations, photo, and video collages. This has been

a norm, because the technology has evolved into an advanced environment, with its capacity to:

- excite the desire to be original and true to one's personality, to strive for self-progress and climbing the social ladders, and to express standpoints and opinions; i.e. to motivate towards prosperity achievement (Notley & Tacchi, 2005);
- inspire courage to accept and share identity features like ethnical and cultural background (Blanchard, Herrman & Burns, 2008);
- promote people's technical and learning skills improvement (Notley & Tacchi, 2005);
- inspire courage to search for one's true self and share it with the world, to experiment, analyse, and be bold enough to present one's self accordingly (Coleman & Rowe, 2005).

Another proven advantage of content sharing is its roles in improving communication within social groups and communities. Sharing and seeing people share their content, history, pictures, and daily activities build a stronger sense of belonging and public acceptance (Richardson, Amanda & MacColl, 2007). This in turn increases people's confidence in their local and regional communities and creates strong inter-personal connections. Hence Richardson, Amanda & MacColl (2007) recommend that regardless of whether these communities prove to be long- or short-lived, their members benefit from the digital sharing and contacts in any way due to their strengthened sense of collective attachment.



### **2.4.2 Self- Expression**

Expressing one's identity has become an overwhelming part of the social media content. Bryant and Marmo (2011) believe that exposing personal identity is not necessarily a narcissistic statement but rather a contemporary form of social display. This is largely due to the fact that such media advertise emotions on personality uniqueness (Collin et al., 2011). It incites desire to speak and communicate freely the wide range of ethnic, political, sexual, or cultural opinions (Coleman & Rowe, 2005; Hillier & Harrison, 2007). In addition to that, it gives people courage to admit and share their personal background (Blanchard et al., 2008), especially in the cases of people belonging to minorities, small societies, poor communities, or people with chronic illnesses (Stephens, Metcalf, Blanchard, Mangan & Burns, 2011).

Based on the statements in the previous paragraph, social media tools have been proven as reliable means for establishing and expressing identity, building strong social connections, and enhance one's social life. Bryant and Marmo (2011) stressed that the tools give people strength to not hide behind masks but rather find social approval where previously it was not thought possible. These advantages amount to an even larger one – people's engagement in larger social and family networks by keeping in touch with friends, kin members, and colleagues, as well as preserving old relationships and establishing new ones, based both on friendship and intimacy (Collin et al., 2011).

### **2.4.3 Wellbeing**

Although social media studies are yet to establish theoretical concepts and to validate existing theories, it is certain that in many cases, the Internet space creates solid learning and socialising opportunities that in turn improves people's social interactions, knowledge, and overall well-being (Boase, Horrigan & Wellman, 2006). Regarding that, Notley and Tacchi (2005) confirm that social network personalisation increases people's confidence, interactive abilities, and numerous more specific advantageous. On top of that, Collin et al. (2011) noted that social media tools increase self-assurance that can lead to higher levels of trust in one's personal abilities, sense of accomplishment, and motivation to keep exploring and improving oneself.

Furthermore, there is a proven track of dependency between social media use and self-confidence (Valkenburg, Peter & Schouten, 2006). Nevertheless, Oliver, Collin, Burns and Nicholas (2006) found enrich the findings that the sense of acceptance and communal belonging increase people's ability to cope with change and unpleasant experiences, since they have established support groups even if they are not in close physical proximity. This agrees with Berson (2003) who expressed that social media tools contribute to a great extent for societies' prosperity and individual competence.

### **2.5 Gender Variance and Internet Usage**

The results shown in reviewing the literature about gender are combined as to which group spends more time on the Internet; research emphasizes that girls allocated less time online than boys in last years because of the ancient patterns of technology, like console games and computer (Subrahmanyam & Lin, 2007).

It has been shown that girls use the internet for chatting and downloading music. Thus, one can hypothesise that girls will have a higher probability of being interested in social media and other groups on internet (Giles & Price, 2008).

Based on several researches done related to this subject, the number of boys and girls who are communicating on social media are approximately equal. Research confirms that despite the fact that both girls and boys have social media accounts, the purpose for having such account varies based on differences in gender (Raacke & Bonds-Raacke, 2008). Social media are the primary means of strengthening familiar friendships for girls, whereas the internet provides opportunities for boys to flirt or create new relationships (Raacke & Bonds-Raacke, 2008).

Girls used the Internet in order to show sexually explicit images through social media and speak in sexual activities in public pages (Ali & Aliyu, 2015). On the other hand, boys are more likely to spend their time to create a social media account for the reason of trying to find a significant other. Another reason may be that boys are in a relationship and have thus been requested to join with their girlfriends (Raacke & Bonds-Raacke, 2008). The influences of participating in social media more likely affect girls than boys in terms of sharing their activities to the daily life (Amanda & Michael, 2009).

A recent study on Xanga, MySpace and Facebook revealed that while several participants used these tools for positive and fun activities, approximately 55% of girls exchanged individual's experiences about concern, problems of relationship and depression, also only about 15% of boys revealed any particular issues other than their friendships, hobbies and interests. Also, the study confirmed that participants use social media to post about the death of a friend or a relative, and they use

member profiles and forums to help them with the grieving cases (Amanda & Michael, 2009).

Studies recently showed that boys who use social media are getting a lot of technology and information compared to girls (Valkenburg & Peter, 2009). This was hypothesised because girls less than boys for tend to have struggles in ideas face-to-face and expressing their emotions with others. In addition, social media help users to communicate via chat instead of interviews face to face (Valkenburg & Peter, 2009).

## **2.6 Gender Stereotypes**

Joshi, Trauth, Kvasny & McPherson (2013), defined stereotype as a threat that occurs when one person in a group is labelled by certain negative characteristics. Stereotyping has the ability to increase apprehension causing a person to exhibit lowered performance. Earlier, Heilman (2012) addressed that gender stereotyping can be descriptive and prescriptive. Particularly, descriptive gender stereotyping describes what women and men are like. Prescriptive, on the other hand, describes what men and women should like and creates normative expectations of the behaviour of men and women. Whether descriptive or prescriptive, gender stereotyping produces expectations that comprise of a women's career progress. Before that Before that, Duehr and Bono (2006) found that gender stereotyping among women in the IT field could be seen in their low wages than men. They also found that 30 years ago, male managers characterized women as submissive and less ambitious and passive. Now, women are more analytical, confident and assertive and their leadership personality is stronger than what it was 30 years ago. On the other

hand, female managers viewed women similar to successful managers. Accordingly, they suggested that women stereotypes should be changed.

According to Lemons & Parzinger (2007), in spite of the need for qualified IT personnel, women are underrepresented. Many women go into the field leave quickly causing difficulties in recruitment. Thus, the researchers focused on women in IT in order to examine the behaviours of attitudes that negatively effect on them in this field and make them quit shortly from being enrolled. Women in IT were compared to the general population in order to see if there was a significant difference. The study showed that gender schemes become non-traditional through the involvement of women in the information technology as compared to men. This has been proven in the general population to be larger than females and males schemes, the women's rights and privileges that are sensitive in non-traditional schemes, while traditional schemes may lead the women to stereotypes. In the male-dominated IT field, the values of men influence the standards. Women entering the IT field may be showed as a deviation as resulting in a stereotypical dissatisfaction of women.

Also Serva, Baroudi & Kydd (2009) suggested that gender disparity in IT related majors and occupations occurs because of the stereotype that male students possess superior analytical abilities and are better equipped solve IT problems. Fifty-six business students registered in the program of MIS at the official university participated in this study. The researchers examined the effects of stereotypical threats on the quality of work, and whether the gender and stereotype threat together affects the quality of group performance. The results of the Serva et al. (2009) study concluded that females exposed to the stereotype that women have inferior analytical abilities produced a greater quality of work than those, not as exposed. Women in a

stereotypical environment produced lower quality of work than women in a non-stereotypical environment.

Joshi & Schmidt (2006) found that negative stereotypes of the IT workforce permeate images and conceptions held by both men and women. Specifically, the authors found that the IT workforce is plagued with stereotypical images of IT employees who only sit in front of a computer all day, workers who are nerds or geeks, and other stereotypes including that all IT employees wear glasses. Unfortunately, the stereotypic images of the IT field do not fade away once students are informed about IT careers. These influences can be subtle, but create a difference in how women see IT and imagine their roles within it. As a result, the authors recommend that actions be taken to remove or reduce the pervasiveness of negative stereotypes of the IT workforce.



## **2.7 Challenges Faced by Women in IT Workforce**

In 2008, women hold only 25% of IT jobs, in turn, it makes sense to try and attract women to solve the shortage of workers (Panko, 2008). According to Armstrong, Nelms, Riemenschneider & Reid (2012), researchers have attempted to identify challenges and barriers influencing the advancement and retention by women in the IT profession. Women and men in IT experience the work environment differently. Thus, a re-examination of the unique challenges that women faced in the IT workforce is needed. As a response, Armstrong et al. study compared and contrasted unique challenges and barriers faced by women in a Fortune 500 company. The findings for this study suggested that the barriers faced by women were based on organizational and interpersonal causes. Even though the IT field is in need of

qualified personnel, women are underrepresented. The women who enter the field often leave, making retention difficult (Lemons & Parzinger, 2007). The underrepresentation of women in IT has led to inquires about barriers faced by women in IT (Reid, Allen, Armstrong & Riemenschneider, 2010).

According to Ahuja (2002), it is important to enhance women's role and advancement into the IT workforce. Kvasny, Trauth & Morgan (2009) argued that social exclusion because of class inequality, race and gender is a developing barrier in a diverse IT workforce. Gender differences in IT affect the global competitiveness of companies. Due to the current IT labour shortage, it is important to minimize leakage of women in IT workforce, as the shortage of women in IT remains in continues to emphasize the stereotype and perpetuate the imbalance (Lamont, 2013).

A broad range of barriers related to the less participation of women in the field of IT has a major anxiety.

According to Balcita, Carver & Soffa in 2002, observed that the underrepresentation of women in the field of IT workforce promotes a deficiency of female role models and mentors. Women seek assistance through guidelines, social support, or role model, and they are thus generally felt disappointed. Meanwhile, without the very important guidance and encouragement of colleagues that share the same gender, women are left wanting for support. The authors recommend interventions to be done to mould additional female role models and mentors.

Trauth, Quesenberry & Morgan (2004) investigated how women in the IT profession are affected by and relate to predominately male informal social networks. These social networks are important for information sharing in a less formal setting, and to establish and build trust in personal relationships. The research presented a conceptual framework to explain the reactions and strategies with respect to the

network that women employ for continued participation in the IT profession. The framework illustrated the experiences of both “insiders” and “outsiders” to the network. The analysis demonstrated that women respond to exclusion from the network in a variety of ways, depending upon environments, personalities, and responsibilities. The findings recommend that organizational social networking barriers be examined and removed and programs be implemented to increase the number of female role models and mentors.

Trauth, Quesenberry & Huang (2006) examined the concerns facing women in participating in the information technology is the balance between work-family. In order to assess the balance between family and work of this study it presented a set of proposals that affect the balance between work-family and the technical professions of information technology, which helps women in decision-making as part of the necessary balance. The results showed that there is a specific way to help pass the geographical areas and time frames is societal messages that are difficult and complex, and are processed by women in different ways. However these messages affect women from the professional and personal decisions in her life. Thus, more innovative work-life programs should be introduced and implemented. These programmes include part-time employment, return-to-work training programmes, as well as flexible work arrangements which take into account the myriad of family-work affairs that women deal with.

According to Armstrong & Riemenschneider (2014), there are many social factors that affect women such as social expectations (social traditions about women's shape), the conflict between family and work (the difficulty of women's participation in more than one area), that these factors can affect women or not in their participation in information technology. In addition, there are structural factors



include the absence of role models (the lack of evidence in a successful professional life), culture professional (the male-dominated jobs due to work long hours and late into the night and have style strict and focus on the individual's behaviour), and the presence of non-official sites ("good old boy" site, the traditional methods to create camaraderie), lack of teachers (lack of people close to advise you on the job and to assist in the social and psychological issues). The structural factors that effect on the continuation of information technology career are the lack of role models and professional culture, and other structural factors such as a lack of teachers and unofficial sites and institutional structures affect the progress of the IT career.

The careers in the area of IT that lack of women involvement (Burch & Leon, 2000; Adya & Kaiser, 2005; Broos, 2005; Trauth & Howcroft, 2006; Crump et al., 2007) include design, support, development, management, analysis, and implementation of computer-based information systems, composed of procedures, data, hardware and software (Wkh & Ri, 2015).

In particular, the use of computer by male students is more positive than female students. For example, the study showed that when the computer is used by male students, it will have high self-efficacy and more positive in the deal, as well as a greater role in the sexual stereotyping compared to women (Broos, 2005). In fact, many investigations conducted with topics related to women, it focused on women under-represented, as well as how to reduce the gender gap in the information technology. These things include the stereotype of gender, social issues, education, media influences, and employment, and the work environment (Trauth & Howcroft, 2006).

Furthermore, Burch and Leon (2000) discussed the issues of equality between men and women and how women get new technology to help them in all areas of life,

especially the initial analyses on women and the media, as well as women and technology, in 1990, there are three main issues focused on gender in communication and media. These issues are women's access to various important functions and centres in decision-making, which were exclusively taken by men. The role of women in media helps to change and enhance the stereotype, women's access to means of public expression fairly and equally with men, in recent years, there is a shift from the concept of women as an object of information to focus the role of women in the information control. In other words, change the method of talk about concept of women through empowerment and advancement of women. Through their new locations could explain women's mission and create their own information.

## **2.8 Motivation to Pursue an IT Career**

Croasdell, McLeod & Simkin (2011) have identified a number of reasons managers should attract females in the IT industry. The main one is that experienced and qualified IT professionals are scarce, causing many organizations to pay high salaries and offer sign-on bonuses, in order to attract top employees through change their ages. However, Croasdell et al. (2011) discovered that women do not choose to major in IT fields because they tend to focus on their family. The influence of family impacts the decision to choose an IT profession. These very same factors are important to the retention and recruitment of women in the IT profession.

Heinze & Hu (2009) studied the factors that affected college undergraduates' choice to pursue a major in IT. The study found that attitudes toward IT affected the students toward IT majors. The study implied that negative stereotypes have a tendency to affect a student's attitude. As such, a socially withdrawn male does not encourage females to participate in the IT industry. The underrepresentation of

women in IT shows there may be truth in this perception. According to the researcher, the social aspect of the IT industry should be addressed with efforts to attract a broad range of IT professional.

According to Trauth et al. (2008), the collaboration of the less participation of women in the field of IT workforce and boost cultural variety is a result of the globalization of the IT field and is a problem in research and practice. Thus, there is a need for an investigation of the factors affecting in gender. In order to maximize the possible solutions focused to enhance social inclusion of women in the field of IT, The research of information technology needs to account for cultural contexts. In turn, analysed cultural factors that influenced women career choices in the IT profession.

Blum, Frieze, Hazzan & Dias (2007) argued that women need a female friendly environment to share and be successful in IT. According to the authors, women can fit in any computing environment under certain environmental and cultural conditions. Culture is defined as a set of behaviours, values, relationships, attitudes and which are connected a specific community consciously and unconsciously. Environmental and cultural conditions attributed to the way women and men related to IT and are being moulded by those occupying it.

Blum et al. (2007) conducted three case studies. One particular case study studied undergraduates at Carnegie Mellon University in the Computer Science (CS) department. Before 1999, the CS department was imbalanced in the areas of gender, professional support for women students and student personalities. This department was geared toward male students. The women had an extremely low sense of self and felt they do not tend to get along well with the computing environment. In 1990 the new admission criteria allowed diversity in a balanced environment. The study found

that diversity and balance in the Carnegie Mellon University CS Department produced an environment where male and female students had similar attitudes toward IT. Some male and female students loved programming and some did not. The shift in the environment produced a change in the female students' confidence levels, perspective of programming and a sense of belonging.

## **2.9 Related Theories**

There are many theories explaining the involvement of women in IT workforce, including Liberal feminism, Socialist feminism, Radical feminism, Feminist standpoint, and Cyberfeminism. Every theory has its own goals as discussed in the following subsections.

### **2.9.1 Liberal Feminist Theory**

Liberal feminists dated back to the nineteenth and twentieth century engaged in equal rights fights (Beddoes & Borrego, 2011). Liberal feminism is considered the most modest feminist approach and is based on a simple proposition that everyone is created equal and should not be denied equal opportunity due to gender (McCabe, 2013; Beasley & Bacchi, 2007). Liberal feminism promotes equality of opportunity. In today's society, liberal feminists' most common movement issues involve equal pay, education, and job opportunity along with removal of legislation that discriminates against women (Anne, 1993). Liberal feminists believe women are intimidated in modern society due to unfair discrimination. They are not seeking special privileges for women but equal opportunities (Rosser, 2005).

Rosser (2005) explained that women in the IT field tend to take on the positions of electronic assembly while men take on positions that are decision making and creative designers in the role of computer scientists, engineers, hardware designer, and capitalists. In this male-dominated field, creators of technology tend to be useful from a male perspective and fail to address the issues of women users. A liberal feminist would seek to eliminate the obstacles preventing equal access to jobs and high paying jobs for women. The liberal feminist theoretical approach in research would seek to bring awareness to male bias in technology designs by expressing the need to correct the failure by including the viewpoints of men and women in the technological design.

### **2.9.2 Radical Feminist Theory**

Radical feminism believes women oppression is the first, well-known, and deepest oppression (Rosser, 2005). According to Donovan (2012), the radical feminist theory was developed in the late 1960s and early 1970s by a group of ex-movement women. These women were participants of the civil rights and anti-war campaigns in the 1960s. It was during this time when women became aware of their oppression from the treatment they received from their men cohorts. Oppression in women derived from male-domination, thus women must create women-centred societies that rely mostly on women (McCabe, 2013). The radical feminist theory was a response to theories, organizational structures, and personal styles of men (Rosser, 2005). The women experienced belittling treatment within male radical organizations. The concern was whether organizations would allow internal democracy that permitted women's styles to materialize. The women were determined to express that feminism and feminine styles were just as important as masculine styles (Donovan, 2012).

Rosser (2005) explained that most theories in IT would be rejected by radical feminism; hence they are not centered on women. The radical feminist theory assumes the needs for women in the male-dominated IT field. The foundation of computing is reinforced through the absence of women and the domination of men in the design operation. In turn, technologies designed to be suitable for men and do not meet the needs of women. A radical feminist may propose that technology is linked to men and their masculinity, and women have no alternative.

### **2.9.3 Socialist Feminist Theory**

Socialist feminist concepts were derived from the opinions between the Marxist feminist and radical feminists in 1970s. The opinions focused on social inequality. Thus, socialist feminist views are comprised of elements of Marxism's regards to the significance of class distinctions, labour and the elements of radical feminist views that sexual oppression is not historically a penalty of class separation (Beasley & Bacchi, 2007). Socialist feminist attention is centered on the power relationship particularly in capitalism, racism, patriarchy, and the politicized personal life. This branch of feminism attempts to bring gender balance in the roles allocated to women in an independent class status (Barrett & McIntosh, 2005). The socialist feminist rejects individualism (Rosser, 2005).

Further, Barrett and McIntosh (2005) does not view the concept of a woman as individual gender awareness, but as a political category. The socialist feminist assumes that gender situation is forced and defined by social relations, rooted by the factors of historical and placed in social mechanisms (Enns, 1992). In the male-dominated field of technology, feminist scholars characterized technology and social pattern of technology for men; thus isolation of women in all fields. Socialist

feminist revealed that the low wages of women in the IT field may lead to men in IT producing work that is difficult to automate and faster automation, in order to destroy unions and keep the women's wages low, or both (Rosser, 2005).

#### **2.9.4 Feminist Standpoint Theory**

The feminist standpoint theory investigates challenges of creating a relationship between knowledge and power of women lived experience (Ramazanoglu & Holland, 2002). This theory started in the 1970s during the Marxist feminist and feminist critical theoretical approach as an epistemological theory (Rosser, 2005) and Lukacs advancement of the standpoint of proletariat (Taussig, 1980). Dorothy Smith is a known originator of the feminist standpoint theory. She used the word standpoint to confirm what one knows is affected by where one stands in society (Appelrouth & Edles, 2010). Smith argued that one must look at the world from one's own standpoint or viewpoint. The feminist standpoint theory uses an orderly methodology to theorize the perspectives of women and complication of lived skills (Donna, 1988).

In addition, this theory emphasizes on the difference between the person and the group as groups of analysis who share a unified position in community hierarchies. Thus, the feminist standpoint theory allows a conceptual theory in the research of the underrepresentation of women in IT. The feminist theory is used in research to focus on the political, social, and material contents of a woman's lived experience and knowledge, in order to solicit social change (Kvasny, 2006).

The use of the feminist standpoint theory allows for research to understand the lived experience of women in the male-dominated IT field. Kvasny et al., (2009) used the

feminist standpoint theory in research to understand how class inequality, race and gender formed the experience of black women IT learners and workers. The theory provided a theoretical perspective to interpret the stories about women's viewpoint on being concealed and obvious exclusion. The authors were able to draw upon the effects of the women's lived experience to analyse the power relations and how it produced oppression.

### **2.9.5 Cyberfeminism Theory**

Cyberfeminism was coined in 1994 by Sadie Plant, the Director of the Cybernetic Culture Research Unit at the University of Warwick in Britain, to describe the work of feminists interested in theorizing, critiquing, and exploiting the Internet, cyberspace, and new-media technologies in general. In other words, Cyberfeminism simply refers to feminist activity in cyberspace (Wajcman, 2006). It indicates a "woman-centered perspective that advocates women's use of new ICT of empowerment" (Rosser, 2005, p. 17). According to Rosser (2005), Cyberfeminism combines different feminist's views in order to show the complex interactions among IT, women, and feminism (Rosser, 2005).

While Rosser (2005) takes it that way, Hawthorne and Klein (1999) express Cyberfeminism as a philosophy that acknowledges, firstly, that there are differences in power between women and men, in the digital discourse in specific; and secondly, that cyberfeminism aim at changing that situation. The Internet offers a great opportunity to feminists to work in ways they never considered possible, creating groups where they can discuss about gender issues and reach a larger audience.



On the other hand, Gajjala explains the cyberfeminism share is the belief that women should take control of and appropriate the use of cyber-technologies in an attempt to empower themselves. Gajjala believes that the empowerment would be possible by giving women who live in the de-empowered south, which is not efficiently connected to the rest of the world, the chance to become computer literates and connect to the north of the world. New technologies, which enable users to create contents and share opinions, can be powerful tools nowadays and increase the potentials for women (Gajjala, 1999). Activists working online had recognized the potential of the Internet as a force for social change and a tool of empowerment for women because it creates women's venues, resources and networks for organizing (Sutton & Pollock, 2000).

Based on the discussions in the previous paragraphs, among the objectives of cyberfeminism is the facilitation of female involvement in the virtual world through their participation in issues that immediately influence their transitional areas of communication. Cyberfeminism works towards the reshaping, redefining and reclaiming of innovative electronic for women (Motter, 2011).

For Wajcman, technological innovations had been pivotal in the fundamental shift in power from men to women that occurred in Western cultures in the 1990s. Old expectations, stereotypes, senses of identity and securities were challenged as women gained unprecedented economic opportunities, technical skills, and cultural powers. Automation reduced the importance of muscular strength and hormonal energies and replaced them with demands for speed, intelligence, and transferable, interpersonal and communication skills. This was accompanied by the feminisation of the workforce that favours independence, flexibility and adaptability. While men were ill

prepared for a postmodern future, some women became ideally suited to the new techno culture (Wajcman, 2006).

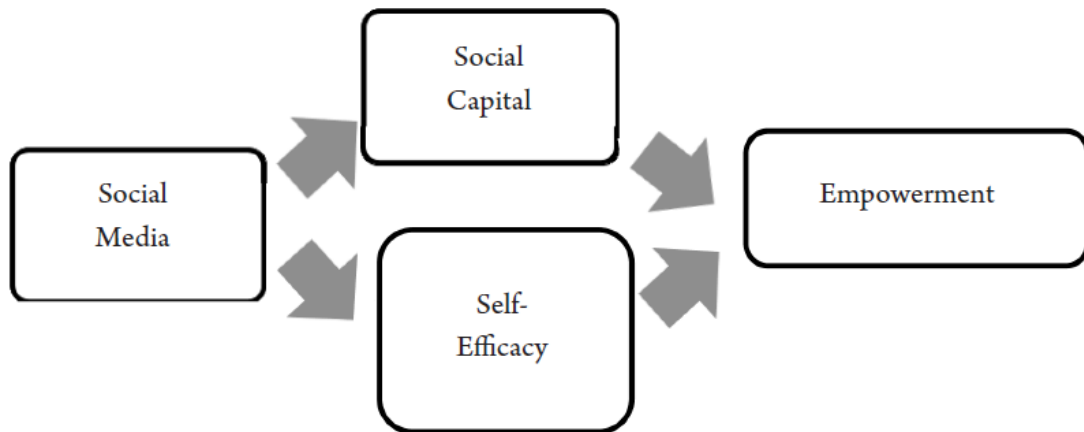
Several studies have proven the role of cyberfeminism theory in women's empowerment through social media. According to Monami & Shams (2014), stated that during the past ten years, Bangladeshi women have been enthusiastic about harnessing the easily accessed services provided by the internet. According to a nationwide survey on the media conducted by the Bangladesh Telecommunication Regulatory Commission, as of January, 2013, the number of Bangladeshi internet users stood at 30.48 million. The number of Facebook users is recorded as 3.9 million and rising with a new user registered every 20 seconds. Thus, the availability of Facebook has the potential to empowering women through the enhancement of female participation in small or medium e-commerce.

Cattane (2012) delved into the motivations and experiences of Egyptian women with regard to the utilization of blogging as an instrument in the empowerment process. Blogging acts as a linkage between gender parity and empowerment, the internet and social media as an online community realm, as well as feminism and cyberfeminism.

In addition, Chen (2012) who surveyed 312 women bloggers, found out a significant relationship between need for self-disclosure and seeing blogging as a way to express their opinion, even if this is not considered the main reason why women blog. In fact, other secondary reasons compel women to blog, related to basic needs that are most deficient in them.

It was extended by Ajjan et al. (2014), Cyberfeminism perspective focuses on women and how to defend the use of technology in all fields, for the empowerment of women, and increase the level of awareness. A conceptual model for the study

explores the role of social media, in empowering women entrepreneurship in emerging economies via increased social capital and improved self-efficacy as shown in Figure 2.1.

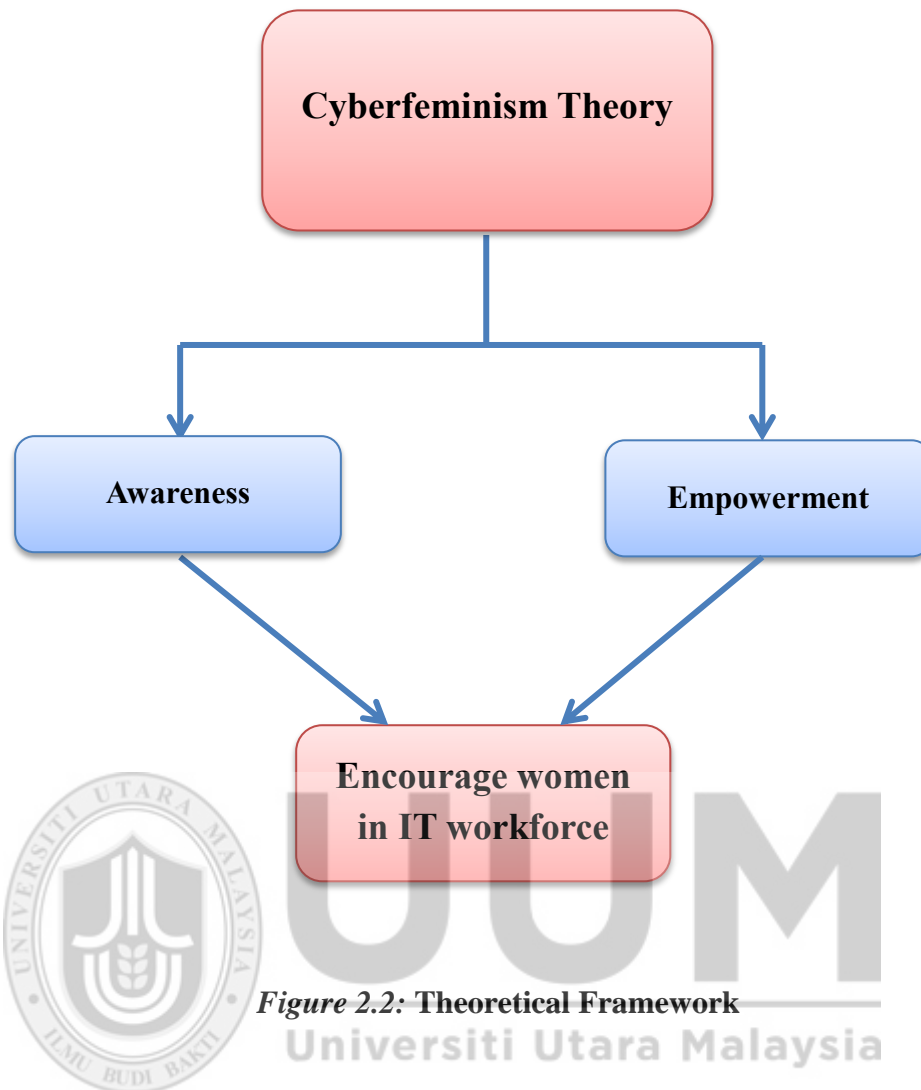


**Figure 2.1: Empowering Women Entrepreneurs in Emerging Economies**

### **2.10 Theoretical Framework**

The theoretical framework of this study is based on the Cyberfeminism theory because it does focus on the use of communication technology, especially social media tools, in bringing awareness and empowerment to women more than ever before. Although not without its limits, electronic communication puts the women in touch with one another for sharing ideas and concerns (Heuwagen, 2014).

Accordingly, based on the conceptual model by Ajjan et al. (2014) (Figure 2.1), the theoretical framework for this study enables the exploration of the roles of social media in empowering and increasing the awareness for women in IT workforce as illustrated in Figure 2.2.



*Figure 2.2: Theoretical Framework*

### **2.10.1 Women’s Awareness**

Awareness is defined as an introduction to informed action, while awareness focuses on the knowledge on certain thing and how to positively impact the concern. This concept extends to public awareness, which helps individuals understand and drive other individuals to participate effectively in activities (Zita, Burger & Scholtz, 2014).

On the other hand, online communities have recognized the social media as a highly effective tool for boosting the awareness and organizing movements on a wide range of issues. The views of women, whether on an individual or collective basis, have been observed to significantly influence the promotion of women’s rights

internationally. In their endeavour to achieve improved accountability and action in the context of gender equality, women's rights movements have greatly benefitted from developments in the social media. Now, the participation of women in social media outlets such as Twitter, Facebook, Instagram and Google+ for the purpose of elevating awareness, deliberating strategies or organizing campaigns related to gender equality, is on the rise. At the grassroots level, actions initiated by female-associated networks have led to alterations in regulations and customary practices in various countries including India, Kenya, and Nigeria. However, gender equality movements cannot afford to rest on their laurels just yet. There is still a long way to go in terms of elevating the involvement of civil society towards enhancing the participation of women in decision-making procedures (Shirky, 2011).

Now, modern technology and innovative developments in the social media significantly alters the lives of women especially those living in male-dominated societies. A case in point concerns the realities faced by Arabian women, who, without the Internet, would be deprived of the opportunity to put across their opinions on a global stage. The internet is also a means for them to acquire information that might otherwise be blocked by social and political impediments. As the social media offers an avenue for an individual to express himself/herself, it is especially attractive to the fairer sex who appear to be more inclined towards self-expression (Karolak & Guta, 2015). In fact, the ability for the creator to share, concerns, and emotions with others, results in an improved psychological well-being (Ajjan et al., 2014).

### **2.10.2 Women's Empowerment**

Empowerment in the circumstance of women's rights refers to their capacity to make tactical life choices in an environment where they were previously deprived of this opportunity (Kabeer, 1999). Stavrositu and Sundar (2012) argued that the very act of making their self-expression in public can instill a sense of empowerment in the bloggers. Empowerment influences the option for women to (a) decide on issues affecting them directly, (b) gain from resources and opportunities, (c) have power over the management of their own lives and bodies and (d) have a say in communal decisions which can potentially lead to a raised level of independence and improved well-being (Schuler & Rottach, 2010).

They are meaningful, based on the definition by Keller and Mbewe (1991), that the empowerment of women is a procedure that facilitates their systemized endeavour to enhance their independence, exercise their autonomous right to make decisions, and manage resources that will help them to confront and do away with their own subordination. Kabeer (2001) cites the importance of empowering women through fostering their ability to challenge their contexts and make strategic choices in an environment where such choices were previously denied. Thus, increased access to information through social media can improve a woman's capacity to envision alternative options to make meaningful choices (Alsop & Heinsohn, 2005).

Social media empower the women to understand and overcome the structural factors such as the lack of evidence in a successful professional life, the male-dominated jobs due to work long hours and late into the night and have style strict and focus on the individual's behaviour and lack of people close to advise you on the job and to assist in the social and psychological issues, also social factors such as social

traditions about women's shape and the difficulty of women's participation in more than one area (Khan & Moin, 2013).

### **2.11 Summary**

This chapter finds that literatures suggest that the under-representation of women in the IT workforce is a worthy subject in order to gain knowledge about the challenges impacting the attraction and retention the women in the field. This study contributes to the literatures exploring the relationship between gender and factors impacting the perspective of women in the IT workforce. The study explored the significance of men and women perspectives to understand the shortage of women. The structure of Cyberfeminism theory has been explained in the literatures, in order to construct a theoretical perspective of understanding relationship between women and technology, including women's awareness and empowerment through the social media. Hence, this study adapts it in carrying out further investigation in achieving the objectives stated in Chapter 1. Next, Chapter 3 outlines the process this study has gone through.

## CHAPTER THREE

### METHODOLOGY

#### 3.1 Introduction

This study particularly focuses on the working women in IT sector in Iraq. Basically, this study works on achieving two specific objectives;

1. To determine the women awareness for using social media in influencing them into the IT workforce in Iraq.
2. To identify the role of social media in empowering Iraqi women to influence them into the IT workforce.

Thus, in order to achieve the above objectives of the study, two research questions were developed;

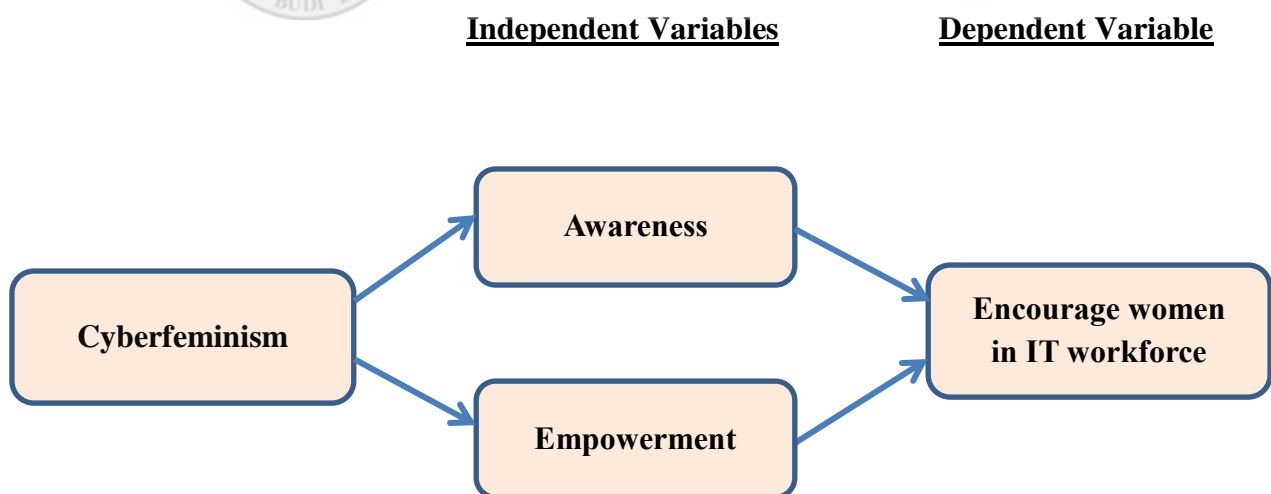
1. What is the women awareness for using social media in influencing them into the IT workforce in Iraq?
2. How do social media empower Iraqi women in participating in the IT workforce?

This chapter explains and discusses the type of study and instrumentation that used in this particular study. This chapter also consists of data collection technique and data analysis techniques in order to explain how the research is carried out. Furthermore, this chapter also describes the techniques or steps that need to be followed in order to collect and gather data as well as the subsequent research process. Finally, this chapter explains the analysis techniques of the data which made use of Statistical Packages for the Social Science (SPSS) for data analysis.



### 3.2 Conceptual Framework

According to the cyberfeminism theory described in the literature review, it contains two main aspects that are the awareness of women to use social media and the empowerment for women in order to increase the involvement in the IT workforce in Iraq. In such context, social media can serve as a mean to increase women's awareness by encouraging self-expression because they allow people to share thoughts, concerns, and emotions with other/s, and attract attention, sharing, and participation. In return, they could result in an improved psychological well-being through repetition. Also, social media could empower women to understand the structural factors such as the absence of role models, culture, professional and lack of teachers, besides social factors such as social expectations and the conflicts between family and work. Based on such consideration, this study comes-up with the conceptual framework illustrated in Figure 3.1.



*Figure 3.1: Conceptual Framework*

### 3.3 Research Design

A research design is the arrangement of conditions for collecting and analysing data in a manner that aims to combine relevance to the research purpose with economy in procedure (Kothari, 2004). It has to be determined because there are various ways data could be collected and analysed. Basically, no matter what type a research is, either analytical or descriptive, quantitative or qualitative, and conceptual or empirical (Creswell, 2003; Kothari, 2004), they involve data collection and analysis. Hence, it must specify the procedure as clearly as possible.

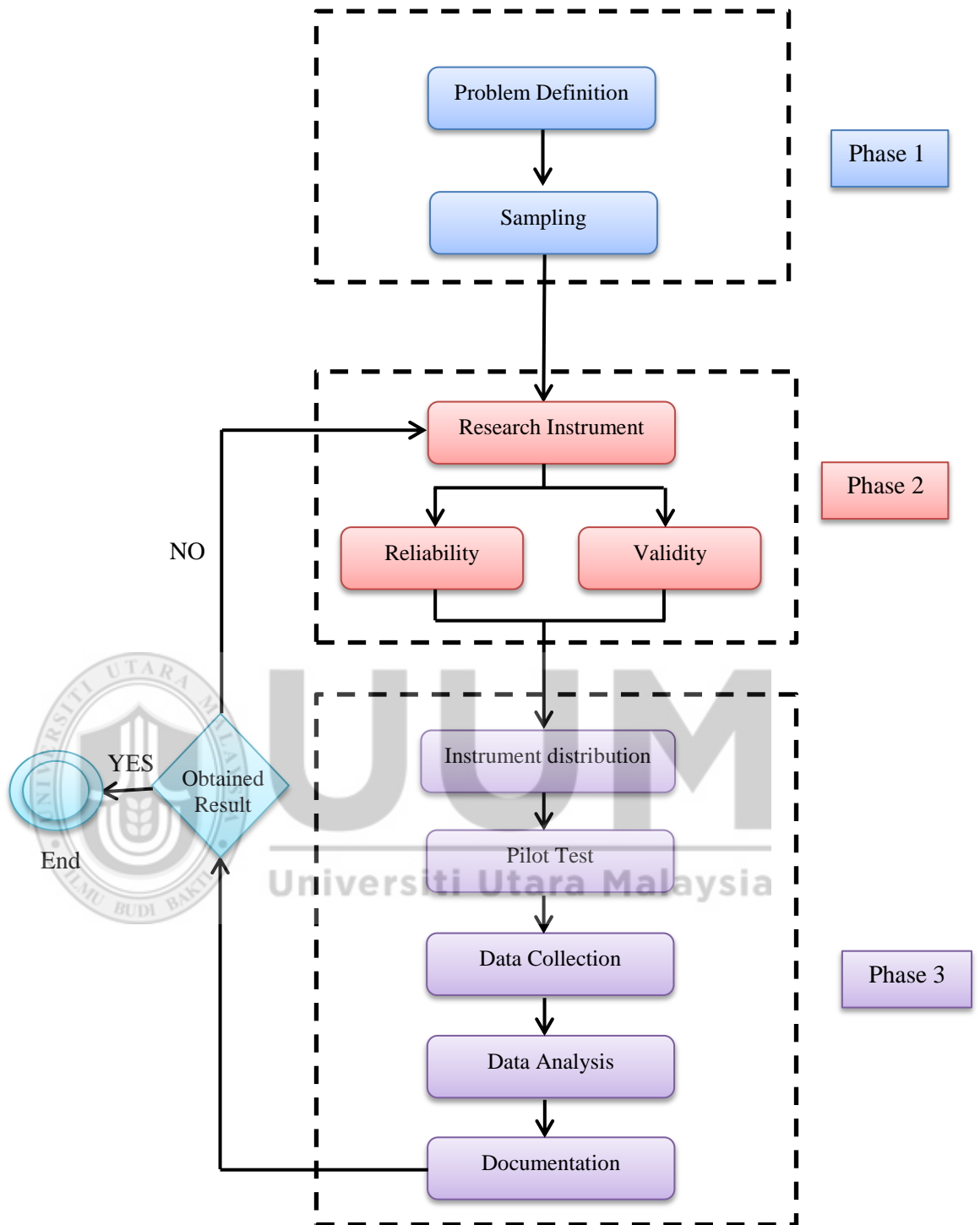
Regarding that, Jonker and Pennink (2010) state the research design is the researcher's overall plan for obtaining answers to the research questions. In short, designing a study helps a researcher to plan and carry-out the study in a way that will help obtaining the intended results, thus increasing the chances of obtaining information that could be associated with the real situation.

In this study, quantitative approach is embraced, in which a model is created to analyse the relationship between awareness and empowerment as independent variables with the encouragement for women to venture into IT workforce as the dependent variable. Quantitative approach is appropriate to maximize objectivity and generalizability of findings (Creswell, 2003). For such approach, survey method is chosen because it is the most common technique for gathering primary data.

The design of this study is aimed at attaining answers to the research questions. For that, this study adapts the research design by Sandelowski (2000) and Chasib (2014) consisting of three phases as seen in Figure 3.2. The first phase requires this study to understand the problem and determines the population and the sample. The second phase involves the development of the research instrument. Then, phase three contains many activities such as pilot study and the commencement of the actual data

collection. In this phase, female students in University of Baghdad - College of Education Ibn al-Haytham were contacted to answer the questionnaire. This study constructs the questionnaire with a well-defined purpose and was ensured correlated with the goals of study. While gathering data from the respondents, they were well-informed about the purpose of study, after ensuring their understanding on the items in the questionnaire was clear (Giesen, Meertens, Visschers & Beukenhorst, 2012). Finally, it was followed by data analysis using SPSS version 20. The phases in Figure 3.2 are further detailed in the following sections.





**Figure 3.2: Research Design**

### **3.4 Phase One**

Two steps were carried-out in Phase 1, understanding the problem being solved and determining the sample of study.

#### **3.4.1 Problem Definition**

In this step, the researcher relied on the secondary sources in the formation of current research problem such as research articles, conference papers, reports, and books. This is to identify the main variables necessary for identifying and constructing the research problem in which it concerns about the involvement of women in information technology workforce in Iraq.

#### **3.4.2 Sample**

Then, this step determines the population and the sample for this study. This study refers population to the group of individuals who have one or more characteristics in common that are of interest (Creswell, 2008). They are 1320 (CSO Iraq, 2012) female students in University of Baghdad - College of Education Ibn al-Haytham. The decision to select the students of University of Baghdad was made based on the recommendation by Hashim (2015) who has gathered the best number of feedback from female respondents in his study. Having identified the population, they were sampled, as suggested by Stoker (1981) and Chasib (2014), so that this study could limit the process systematically. Eventually, based on the rule of thumb in Table 3.1, a sample of 162 students were involved as participants.

**Table 3.1*****Determining the Sample Size***

N	Sample Size
20	20
30 $\div 20 = 1.5$	$\sqrt{1.5} \times 20 = 24$
50 $\div 20 = 2.5$	$\sqrt{2.5} \times 20 = 32$
100 $\div 20 = 5$	$\sqrt{5} \times 20 = 45$
200 $\div 20 = 10$	$\sqrt{10} \times 20 = 63$
500 $\div 20 = 25$	$\sqrt{25} \times 20 = 100$
1000 $\div 20 = 50$	$\sqrt{50} \times 20 = 141$
10000 $\div 20 = 500$	$\sqrt{500} \times 20 = 447$
100000 $\div 20 = 5000$	$\sqrt{5000} \times 20 = 1414$
200000 $\div 20 = 10000$	$\sqrt{10000} \times 20 = 2000$
29688 $\div 20 = 1484$	$\sqrt{1484} \times 20 = 770$

**3.4.2.1 Sampling Techniques**

This sub-section explains the sampling techniques. While population refers to the whole gathering of individuals that interests this study (Sekaran & Bougie, 2010), sample is the subset of the population (Zikmund, Carr, Griffi & Jacobsen, 2010). This study utilized stratified random sampling technique to determine the participants. Technically, stratified random sampling involves a process of stratification or segregation, followed by random selection of subject from each stratum (Sekaran & Bougie, 2010). Particularly, stratification is used when the population reflects an imbalance on a characteristic of a sample (Creswell, 2003).

For the purpose of this study, the sample was divided into degree, master, and PhD students. Further, to ensure the distribution among levels of study is even, proportionate random sampling is used. Having carefully designed that, they were followed with simple random sampling within each stratum (Levy & Lemeshow, 2013). While the whole population is 1320, 1060 of them are degree students, 203 master students, and 57 of them are doing PhD. Hence, when proportionate random sampling was used to select the samples using the equation  $n_h = (N_h/N)*n$ , where  $n_h$  is the sample size for stratum  $h$ ,  $N_h$  is the population size for stratum  $h$ ,  $N$  is total population size, and  $n$  is total sample size (Rossi, Wright & Anderson, 2013), the sizes of sample for each strata are 130 degree students, 25 master students, and 7 PhD students. Eventually, the questionnaire was distributed randomly to the female students satisfying the determined number for each stratum.

### **3.5 Phase Two**

The main focus in this phase is to construct the instrument to be used in this study. Regarding the instrument, this study concerns on the reliability and the validity, to ensure the results are convincing.

#### **3.5.1 Research Instrument**

The use of questionnaire is very practical because a large amount of information can be collected from a large number of people in a short period and in a relatively cost effective way (Creswell, 2003). The queries in a questionnaire come in two forms: open-ended questions and closed-ended questions. Open-ended questions allow respondents to forward a response in their own words. On the other hand, for a closed-ended question, the response entails the choice of one or more answers from a

catalogue of precise phrases. It also come with a wide ranging form of responses, including two-option responses, one best answer, rating scale, ordered choice, items in a series, paired comparisons, matching, and multiple choice answer (Friborg & Rosenvinge, 2013). From the various options, this study utilizes closed-ended questions for gathering data. With that, this study wins benefits like (a) its objectivity ensures that the responses are collected in a uniform manner, (b) data were collected promptly, (c) relatively cheap, and (d) the responses were swiftly and effortlessly analysed as outlined by Chasib (2014).

The main instrument of this study is a questionnaire. It consists of four sections; Part I: Demographic profile of respondents (adapted from literatures), Part II: women's awareness of using social media (adapted from Abisola, Oyesomi, Nelson and Omole (2014), Charles, Helen and Jennifer (2014), and Tasir, Mohammed, Harun and Shukor (2011), Part III: women's empowerment through social media (adapted from Das and Bhowal (2013), Gazzar (2011), and Khan and Moin (2013), and Part IV: Encouraging the involvement of women in IT workforce in Iraq (adapted from Charles, Helen, and Jennifer (2014) and Gazzar (2011). Parts II, III, and IV measure respondents' agreement using a five-point scaling system, with 1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree and 5 = Strongly Agree. The details are available in Appendix A.



### **3.5.2 Validity**

Validity is characterized as the degree to which any measuring instrument measures what it is expected to measure (Buchanan & Bryman, 2007). It is also used to improve the existing scales, and to evaluate the reliability of scales already in use. Multivariate procedures like factor analysis can be useful in establishing construct validity (Zikmund et al., 2010).

Test of validity can be identified with the degree of correlation between the test and a measure. In terms of accuracy and precision, reliability is similar to precision, while validity is similar to accuracy. In this research, the validity has been tested using face validity and content validity test as recommended by Buchanan and Bryman (2007). They concentrate on the adequacy and representativeness of a set of items to obtain the idea of an intended concept. The validity can be achieved if an instrument has contents that are more appropriate or scale items represent the main concept being measured. For that, this study consults with Dr. Ariffin Abdul Mutalib, the head of department (Multimedia Technology) for the assessment of face validity and content validity of the questionnaire. The expert was chosen based on his area of specialty in internet-related research. The comments consist on the number of questions and how they should reflect the study's dependent variables. All the comments were considered by the researcher and changed upon the experts' point of view.

### **3.5.3 Reliability**

Reliability refers to the consistency of a measure. A test is considered reliable if it gets the same result repeatedly (Sekaran & Bougie, 2010). Reliability test on the reliability and validity of the questionnaires data was done. Based on Sekaran &

Bougie (2010) the closer Cronbranch's Alpha value to 1, the higher consistency reliability is obtained. According to Bryman & Cramer (2011) having an alpha value of more than 0.8 in order for the questionnaires to be accepted. However, for explanatory study, an alpha value minimum 0.6 is accepted and reliability coefficient of 0.7 and above is considered as good. A measurement by the mean Cronbranch's Alpha value was used to indicate the reliability of the items test included in the questionnaires. The range of Cronbranch's Alpha with reliability can be shown in Table 3.2 as below:

**Table 3.2**

***Croanbach 's Alpha Value***

<b>Range of Croanbach's Alpha</b>	<b>Reliability</b>
<b>1</b>	<b>Perfect</b>
<b>0.8 – 0.9</b>	<b>Good</b>
<b>0.6 – 0.79</b>	<b>Acceptable</b>
<b>Below 0.6</b>	<b>Poor</b>

**3.6 Phase Three**

This section details the pilot test and the actual data collection and analysis. The pilot test was carried out before the real data were collected to ensure the instrument's reliability.

**3.6.1 Pilot Test**

A pilot (or feasibility) study is a minor experiment crafted for the testing of logistics and collected data before the commencement of the actual experiment. This is to

enhance the quality and effectiveness levels of the actual experiment, as a pilot study has the capacity to expose weaknesses in the configuration of the recommended experiment. This serves to save time and resources as these weaknesses can be rectified prior to the execution of the actual experiment (Creswell, 2003; Ary, Jacobs, Razavieh & Sorensen, 2009; Sekaran & Bougie, 2010).

In pilot test involving 30 female students in Mustansiriyah University - College of Education was carried out to determine the reliability of the instrument. According to Malhotra (2008), the sample size for pilot study is normally small, ranging from 15-30 respondents. The pilot study outcomes were gauged using Cronbach's alpha with the Statistical Package for Social Science (SPSS) program version 20. The respondents involved in the pilot study were excluded from the main data assessment process. The results acquired from the pilot study reveal that all the constructs attain an acceptable reliability level of greater than 0.9 as outlined by Bryman and Cramer (2011). (Please refer to Appendix B).

### **3.6.2 Data Collection Techniques**

Data were collected through a set of questionnaires, which were distributed to female students in Baghdad University - College of Education Ibn al-Haytham in order to capture their responses related to the aim of this study. Data collection procedures were established upon meeting the female students face to face and explaining to them the purpose of the study in the covering letter. A total of 162 questionnaires have been distributed to the female students in this collage and 158 questionnaires were received.

### **3.6.3 Data Analysis Techniques**

It involved interpreting information collected from the respondents. Once the questionnaires were completed and collected from each respondent, the researcher compiled them. It involved data editing, data coding, and data tabulation. Quantitative data was analysed in a systematic way by using SPSS version 20 in order to come out with some useful conclusions and recommendations. The results of tests are presented in cross table and percentage. Inferential facts is the methodology of applying factual systems keeping in mind the end goal to reach determinations from sample to a whole population.

At that point, several statistical tests were run in SPSS software version 20, including missing data, multicollinearity, and descriptive analysis to analyse the characteristics of the participants, different tests to compare the range of attitude of the participants, and reliability analysis and correlation analysis to measure the relationship between two variables. In this study, SPSS 20 version was used to check and test the data in a deep manner.

#### **3.6.3.1 Missing Data**

Missing data are a common occurrence and can have a significant effect on the conclusions that can be drawn from the data. Missing data can occur because of non-response, no information is provided for several items or no information is provided for a whole unit (Sekaran, 2006).

### **3.6.3.2 Multicollinearity**

A multicollinearity test shows the measurement that indicates any unusual appearance of data or unwanted information in the responses of the questionnaire (Stevens, 2012). This indication of blind or repeated data is signified by calculating the Variation Inflation Factors or also known as VIF, for short. According to (Norusis, 2011), if a VIF is higher than 10, there is a serious problem with the data gathered.

### **3.6.3.3 Descriptive Analysis**

Descriptive analysis describes all variables in the study. In order to provide an in-depth understanding of the relationship among the independent and the dependent variables of the study, a descriptive statistical analysis was conducted. According to Bryman & Cramer (2011), a descriptive statistical analysis is used to explain the construct of the items in the questionnaire, where it is used to portray, show and clarify the information provided by specific respondents. The following chapter discusses the descriptive statistics analysis of the variables Awareness\_IV1, Empowerment\_IV2 and Encourage\_DV.

Statistics such as mean, standard deviation are used in this study. These scales highlight the respondents' answer obtained from the data collected. These scales were then arranged to the classifications to show their level from answers towards all variables: 1.00 to 2.33 that is low level of mean, the moderate level of mean between 2.34 to 3.66 and the level from 3.67 to 5.00 is high (Mawaddah, 2013).

### 3.6.3.4 Correlation Analysis

The correlation analysis refers to determine the relationship between Awareness\_IV1 and Empowerment\_IV2 as independent variable, and Encourage\_DV women in IT workforce by using social media as dependent variable. To test the bivariate relationship between variables, a Pearson's correlation analysis was conducted. The result of the correlation is used in analysing all variables for independent and dependent variables. The correlation coefficient is ranged between -1 and +1 and this value explains the strength of relationship which has been arranged into high, moderate or low based on the correlation coefficient value as show in Table 3.3 (Mawaddah, 2013). The grade of significance should be less than 0.05 ( $p < 0.05$ ). This correlation is derived by estimate the disparities in one variable as another variable also different (Sekaran, 2006).

**Table 3.3**

*Strength of Relationship for Coefficient Correlation*

Value of r	Strong of relationship
-1.0 to -0.5 or 0.5 to 1.0	Strong
-0.5 to -0.3 or 0.3 to 0.5	Moderate
-0.3 to -0.1 or 0.1 to 0.3	Weak
-0.1 to 0.1	None of very weak

### **3.7 Summary**

This chapter describes how the research is designed and the techniques using in this study to achieve the objectives. Particularly, research design, data collection, sampling technique, data analysis technique, validity; reliability and pilot test have been discussed. All techniques have been carried out in a quantitative approach, in which a set of questionnaires have distributed in order to collect data from respondents. The samples of study were determined through stratified sampling method and proportionate random sampling; the sample population of this study is female students of university of Baghdad - College of Education Ibn al-Haytham. Further, the next chapter elaborates more on the appropriate statistical analysis and finally considers the findings of the study.



## CHAPTER FOUR

### ANALYSIS AND RESULT

#### 4.1 Introduction

This chapter gives an in-depth analysis of influencing social media on women involvement in IT workforce through awareness and empowerment. The major purpose of this research is to examine the association between the awareness, empowerment as a variable independently, and encourage women in IT workforce as the dependent variable.

This chapter reveals the outcome of the data analysis conducted in this study. The topics are discussed according to the findings of the research questions, beginning with the response rate, the data screening and cleaning, the description of the demographic profiles of the respondents, the descriptive statistical analysis of the data, followed by the reliability assessment. Finally, the chapter discusses the correlation analyses conducted on the data gathered. The chapter ends with a conclusion, discussing the overall data analysis of the study.

#### 4.2 Response Rate

In this study, the data was collected among female students in university of Baghdad - College of Education Ibn al-Haytham. A total of 162 questionnaires have been distributed to the female students in this collage and 158 questionnaires were usable while the remainder questionnaires were not received. Hence, the response rate is 97.5% which is consider very good and high for the study (Njoroge, 2013). Table 4.1 shows the response rate.



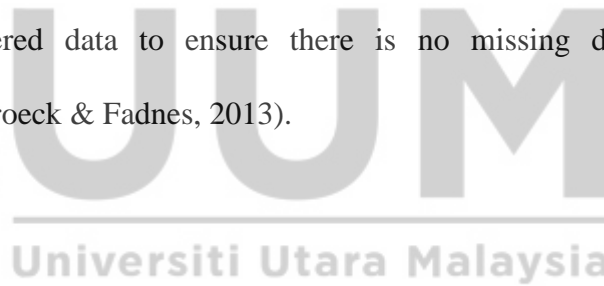
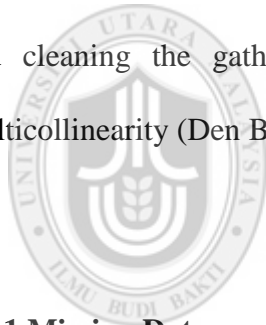
**Table 4.1**

***Response Rate***

	<b>Total</b>	<b>Percentage</b>
Questionnaire distributed	162	100.0
Collected Questionnaire	158	97.5
Usable Questionnaires	158	97.5
Uncollected Questionnaires	4	2.5

**4.3 Data Screening and Cleaning**

This section explains the first process before analysing the data. It involves screening and cleaning the gathered data to ensure there is no missing data, and no multicollinearity (Den Broeck & Fadnes, 2013).



**4.3.1 Missing Data**

Through the screening, there is no missed data found the gathered responses, as seen in Table 4.2 (Appendix B exhibits the raw results).

**Table 4.2*****Missing Data***

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Awareness_IV1	158	100.0%	0	0.0%	158	100.0%
Empowerment_IV2	158	100.0%	0	0.0%	158	100.0%
Encourage_DV	158	100.0%	0	0.0%	158	100.0%

**4.3.2 Multicollinearity**

Table 4.3 below shows that the VIF value for the data in the present study is 2.795 for both the independent variables (Awareness\_IV1 and Empowerment\_IV2) with a tolerance value of .358. Thus, as the VIF value lower than 10, it can be significantly concluded that there is no indication of any serious problem with the data analysed.

**Table 4.3*****Multicollinearity Test***

Model	Collinearity Statistics	
	Tolerance	VIF
Awareness_IV1	.358	2.795
Empowerment_IV2	.358	2.795

Dependent Variable: Encourage\_DV

#### 4.4 Demographic Profile of Respondents

The demographic background for the 158 female students were analyzed in order to provide a clear understanding about the distribution of respondents in terms of education level, age, social media used, and the frequency in using social media. They are exhibited in Table 4.4

**Table 4.4**

*Summary Demographic Background*

Demographic	Frequency	Present
<b>Educational Level</b>		
Degree	126	79.7
Master	25	15.8
Ph. D	3	4.4
<b>Age</b>		
18 – 22	111	70.3
23 – 35	40	25.3
36 – 45	4	2.5
Over 45	3	1.9
<b>Social Media Usage</b>		
Facebook	98	62.0
Twitter	38	24.1
YouTube	33	20.9
Other	24	15.2
None	0	0
<b>Social Media Login</b>		
Several times a day	104	65.8
Once a day	38	24.1
Once a week	9	5.7
Once a month	4	2.5
Less frequently than the above	3	1.9

#### **4.4.1 Educational Level**

Referring to Table 4.4, the demographic profile shows the educational level of the respondents. Majority of the respondents came from the Degree Level of education, with a frequency of 126 and a percentage 79.7%. Next is followed by respondents from the Masters Level, with a frequency of 25 and a percentage of 15.8%. Finally, are those with Ph.D 4.4% of the respondents with a frequency of 3. This may be due to the fact that in Iraq, not many women are encouraged to pursue education beyond the degree level.

#### **4.4.2 Age**

In Table 4.4, for the demographic profile for age shows that the highest number of respondents is from 18-22 years old, where the frequency is shown as 111 with a percentage of 70.3%. Next are respondents from the age group of 23-35 years old, having the second highest number of respondents with a frequency of 40 and a percentage of 25.3%. This is followed by respondents who are 36-45 years old, having the third highest number, with a frequency of 4 and a percentage of 2.5%. Lastly, the least number of respondents in this demographic profile is from 45 years old and above, with a frequency of 3, with a percentage of 1.9%.

#### **4.4.3 Social Media Usage**

Table 4.4 shows the demographic profile for the social media usage among the women in the selected setting. It shows that the social media usage which has the highest number of respondents is from Facebook, with a frequency of 98 and a percentage of 62.0%. This is followed by the Twitter, which shows a frequency of 38

and a percentage of 24.1%. Next, is the YouTube with a frequency of 33 and a percentage of 20.9%. Subsequently, from the demographic profiling, it was found that there are a frequency of 24 and a percentage of 15.2% of users of other types of social media while there is a zero indication of those who do not use any kind of social media. This shows that most of the respondents who participated in this study are those who frequently use Facebook as a tool of social media. The demographic profile of the respondents also shows that all the respondents are exposed and have experience to some kind of social media. It can be assumed that the women in Iraq are also actively participating in the emergence of the IT era.

#### **4.4.4 Social Media Login**

The demographic profile shows the frequency of logging into social media among the respondents. The highest frequency of logging in is shown as several times a day with a frequency of 104 and a percentage of 65.8%. The second highest frequency of logging into the social media is once a day with a frequency of 38 and a percentage of 24.1%. Next is the frequency for once a week which has a frequency of 9 and a percentage of 5.7%. This is followed by the usage of social media once a month with a frequency of 4 and a percentage of 2.5% while those who logged in less frequently than the above is shown as having a frequency of 3 and a percentage of 1.9% as shown in Table 4.4. The demographic profiling for logging into social media among the women indicated that the women are frequent users of the social media, having a tendency to login into a social media several times a day to once a day.

#### 4.5 Descriptive Analysis

Table 4.5 exhibits the descriptive analysis of the women's awareness in using social media. The table displays the mean and standard deviation values for nine items about women's awareness. It is seen that items six and nine share the same highest mean. Particularly, item six measures the use social media to send messages (mean=4.30, SD=0.744), and item nine measures the use of social media to make plans with my friends (mean=4.30, SD=0.802).

The respondents also believe that through social media applications, they can freely create and participate in group discussions in item eight (second highest mean=4.25, SD=0.740), and that social media is the best way to contact with friends who are away (item seven, with mean=4.23, SD=0.799). While item five measures whether the respondents log into the social media to see comments and item four measures whether the respondents log into the social media to share photos, videos and opinions. They both receive good responses from the respondents (mean=4.19, SD=0.775 and mean=4.22, SD=0.777 respectively). Meanwhile item two also gets good responses (mean=4.11, SD=0.935) when measuring whether the respondents download and upload files through the social media. The respondents agree that that they have the desire to share knowledge with others through the social media (item one with mean=4.09, SD=1.085). Besides, they have also experienced using online discussion tools (item three with mean=4.08, SD=0.871).

**Table 4.5***Descriptive Statistics for Awareness*

NO	Items	Mean	Std. Deviation
1.	I have the desire to share knowledge with others through the social media.	4.09	1.085
2.	Downloading and uploading files through the social media.	4.11	.935
3.	I have the experience of using online discussion tools.	4.08	.871
4.	I log into the social media to share photos, videos and opinions.	4.22	.777
5.	I log into the social media to see comments.	4.19	.775
6.	I use the social media to send messages.	4.30	.744
7.	Social media is the best way to contact friends who are away.	4.23	.799
8.	Through social media applications, I can freely create and participate in group discussions.	4.25	.740
9.	I use the social media to make plans with my friends.	4.30	.802
	Valid N (listwise)		

Next, Table 4.6 details the descriptive analysis of the women's empowerment through the social media. Referring to the table, it is seen that the highest score is item four that measures whether the social media makes the respondents do things that they think they could never do (mean=4.34, SD=0.692). It is followed with item eleven (social media encourages us to travel for our work) with mean=4.32

and  $SD=0.698$ . Then, item three (social media encourages us to improve the standard of living) follows with  $mean=4.29$  and  $SD=0.768$ .

Meanwhile for item two (social media helps us to develop our ideas and creativity), item eight (social media makes us feel confident that are able to work with male colleagues), item nine (social media helps us to be aware about our rights to equitable shares of resources i.e. same time of work, same wage rate) and item ten (social media helps us to have self- reliance and more independence) share the same score with  $mean=4.28$  and  $SD=0.739$ ,  $0.695$ ,  $0.739$ ,  $0.758$  respectively. Other than that, item seven (social media increases our participation in decision-making on domestic issues that are usually considered as a domain which woman should not be involved in) scores  $mean=4.27$  and  $SD=0.690$ , item five (social media gives us the feeling that we are important persons in society) scores  $mean=4.25$  and  $SD=0.748$ , and item six (social media makes us have self-confidence and increases our social interactions) received also good responses with  $mean=4.23$  and  $SD=0.851$ . The lowest mean is found in item one (social media provides a platform to speak out about our lives, needs and the issues we face) scores  $mean= 4.12$  with  $SD=0.824$ .



**Table 4.6***Descriptive Statistics for Empowerment*

NO	Items	Mean	Std. Deviation
1.	Social media provides a platform to speak out about our lives, needs and the issues we face.	4.12	.824
2.	Social media helps us to develop our ideas and creativity.	4.28	.739
3.	Social media encourages us to improve the standard of living.	4.29	.768
4.	Social media makes us do things that we think we could never do.	4.34	.692
5.	Social media gives us the feeling that we are important persons in society.	4.25	.748
6.	Social media makes us have self-confidence and increases our social interactions.	4.23	.851
7.	Social media increases our participation in decision-making on domestic issues that are usually considered as a domain which woman should not be involved in.	4.27	.690
8.	Social media makes us feel confident that are able to work with male colleagues.	4.28	.695
9.	Social media helps us to be aware about our rights to equitable shares of resources i.e. same time of work, same wage rate.	4.28	.739
10.	Social media helps us to have self-reliance and more independence.	4.28	.758
11.	Social media encourages us to travel for our work.	4.32	.698
	Valid N (listwise)		

Further, Table 4.7 shows the descriptive analysis on the encouragement for women to involve in IT workforce. There are four items asked. The highest score is seen in item four (social media helps me employment in IT workforce in future) with mean=4.33 and SD=0.752. On the contrary, item three (social media encourages me to participate in the IT workforce) holds the lowest mean value with mean=4.25 and SD=0.754. Other than that, both item one (my awareness of using social media encourages me to participate in IT workforce) and item two (social media increases self-esteem and well-being for empowerment) receive good responses also with mean=4.29 and SD=0.776, and mean=4.28 and SD=0.773 respectively.

**Table 4.7**

*Descriptive Statistics for Encouragement*

NO	Items	Mean	Std. Deviation
1.	Social media increases my awareness to involve in IT workforce.	4.29	.776
2.	Social media increases self-esteem and well-being for empowerment.	4.28	.773
3.	Social media encourages me to participate in the IT workforce.	4.25	.754
4.	Social media helps me employment in IT workforce in future.	4.33	.752
	Valid N (listwise)		

Based on the results in Tables 4.5, 4.6, and 4.7, it is understandable that the respondents perceive social media as very useful in various aspects in their live. While this section summarizes the results, the detailed results are available in Appendix B.

#### 4.6 Reliability Test

In order to support the descriptive statistics analysis, a reliability assessment was conducted on the three variables of the study. Accordingly, Table 4.8 below shows the Cronbach's alpha value for the test to identify the internal consistency and reliability between the three variables. Generally, for the lower limit of acceptability, the common value for Cronbach's alpha is between 0.6 and 0.79. According to Sekaran (2006), values more than 0.70 indicate that the items for the each variable are homogenous and measuring the same constant. Thus, scores greater than 0.80 are considered to be very good (Sekaran, 2006). Based on that, it is seen in Table 4.8 that all the three variables have alpha value of greater than 0.80, thus indicating very good scores. This indicates that the internal consistency for Awareness (IV1), Empowerment (IV2) and Encouragement (DV) with 0.809, 0.813 and 0.806 respectively are very consistent internally. (Please refer to Appendix B).

**Table 4.8**

#### *Reliability Result*

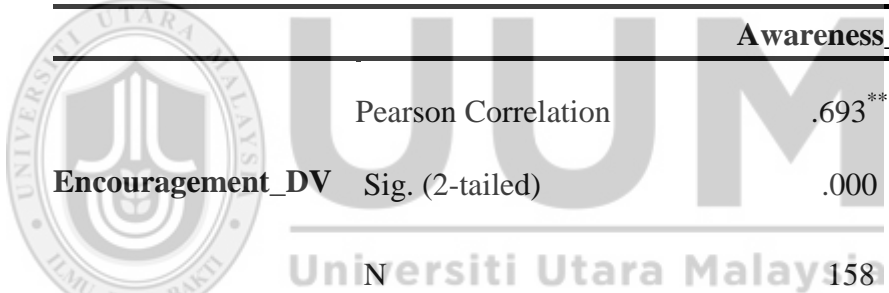
<b>Variable</b>	<b>Number of Items</b>	<b>Cronbach's Alpha</b>
<b>Awareness</b>	9	0.809
<b>Empowerment</b>	11	0.813
<b>Encouragement</b>	4	0.806

#### 4.7 Correlational

Further, Pearson's correlation analysis conducted on the two variables (one independent variable while the other is dependent variable), indicated that there is a perfect relationship between these two variables. Table 4.9 below shows the correlation between Awareness\_IV1 and Encouragement\_DV. It is observed that the correlation is significant at 0.000, showing a positive relationship between Awareness and Encourage (0.693) and vice versa. (Please refer to Appendix B).

**Table 4.9**

*Correlation between Awareness and Encouragement*



		Awareness_IV1
	Pearson Correlation	.693**
Encouragement_DV	Sig. (2-tailed)	.000
	N	158

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

Next, Table 4.10 below shows the correlation between Empowerment\_IV2 and Encouragement\_DV. It is observed that the correlation is significant at 0.000, showing a positive relationship between Empowerment and Encouragement (0.793) and vice versa. (Please refer to Appendix B).

**Table 4.10*****Correlation between Empowerment and Encouragement***

		<b>Empwerment_IV2</b>
	Pearson Correlation	.793**
<b>Encouragement_DV</b>	Sig. (2-tailed)	.000
	N	158

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

Further, Table 4.11 shows the summary of Pearson's analysis conducted in order to analyse the correlation between the variables; Awareness\_IV1, Empowerment\_IV2 and Encouragement\_DV. The test determines whether there is any significant relationship between women's awareness and the role of social media empowerment that influence women into the IT workforce in Iraq.

**Table 4.11*****Results of Correlation Analysis Summary***

	<b>Awareness_IV1</b>	<b>Empowerment_IV2</b>	<b>Encouragement_DV</b>
<b>Awareness_IV1</b>	1	.801**	.693**
<b>Empowerment_IV2</b>	.801**	1	.793**
<b>Encouragement_DV</b>	.693**	.793**	1

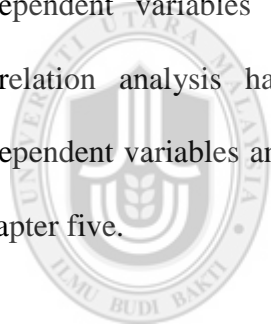
\*\* . Correlation is significant at the 0.01 level (2-tailed).

The results of the Pearson's correlation analysis further strengthen and validated the findings from the descriptive statistics analysis. The correlation analysis indicated a high level of correlations between the variables which shows that both the two

independent variables are linked significantly to the dependent variable of the study. (Please refer to Appendix B for details).

#### **4.8 Summary**

As a conclusion, the present chapter has provided a detailed interpretation of the data analysed. This included the detailed description of the data screening for missing and unwanted data. The three variables of the study: Awareness, Empowerment and Encouragement, have been statistically tested and validated. In addition, this chapter explained the results from the process of data analysis. This process is followed descriptive statistics analysis for demographic profile of respondents and for independent variables and dependent variable. After that reliability test, and correlation analysis has been executed to test strength relationship between independent variables and dependent variable. Further, the findings are discussed in Chapter five.



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## **CHAPTER FIVE**

### **DISCUSSION AND CONCLUSION**

#### **5.1 Introduction**

This study is conducted to understand the under-representation of women in IT workforce and how social media influences on women to encourage them to involve in IT workforce. Based on Cyberfeminism theory, this study examines two research objectives. First, to determine the women awareness for using social media that influences them into the IT workforce in Iraq. Second, to find the role of social media in empowerment the women in Iraq that influences them into the IT workforce as mentioned in chapter three.

This concluding chapter provides a discussion about the research objectives of the study. After that, it discusses the theoretical contributions and practical contributions of the study. Then, it highlights the limitations of the study and how the limitations were overcome. Finally, this chapter discusses some possible recommendations for future work and conclusion for this study.

## **5.2 Objective 1: To determine the women awareness for using social media in influencing them into the IT workforce in Iraq.**

For the first objective of this study, the respondents were provided with information related to their awareness of using social media that influences them into the IT workforce in Iraq. From the data analysis, it was found that majority of the respondents agree that they have the necessary awareness in using social media such as; Facebook, Twitter, and YouTube, as a contributing element that influences them into the IT workforce in Iraq.

Also, the results of analysis reveal that majority of the women are logging into and using social media as frequently as several times a day, which indicates that the awareness among women in Iraq on the importance of the social media in their daily activities is high. Besides that, this study examines on how Iraqi women use social media that influence them in IT workforce including desire to share knowledge with others through the social media, downloading and uploading files, online discussion, share photos, videos and opinions, contact friends who are away, create and participate in group discussions, send messages, see comments and enhance awareness and sense of achievement.

Social media often provide topics of conversation for discussion and thus help to lubricate social life also it provide the possibility of keeping in touch with people nearby as well as women use the social media for entertainment and communication. These activities generate self-expression. Hence, women express themselves as well as gaining knowledge which influences in increase participation in IT workforce. This means that the social media is a platform for the women to discuss and share information and ideas on various matters, thereby educate themselves, exchanging opinions and importance of the effective participation.



In addition, the findings also show that the social media provides a strategy for sharing their opinions, raising awareness, and promoting participation in the field of IT workforce. Participations in this study confirmed that they are aware of the benefits of social media that encourage women in IT workforce. Based on the discussions in this paragraph and the previous, the research objective one has been achieved.

These findings support the findings by Lehtonen (2014) that social media provides a strategy for sharing their opinions, raising awareness, and promoting participation. Besides that, women are effectively using social media as a tool for raising awareness among their social networks. Also, social media functions as a platform for opinion expression and enables sustaining interest among networks. Nevertheless, the importance of sharing information and raising awareness in the community results from efficiency, and those women strategically share thoughts everywhere they want; thus, this shows the utilization of both strong and weak ties in their networks.

Besides, according to Karolak & Guta (2015), explain in their study how Saudi Arab young women use social media for negotiating and expressing their identity. The finding of this study reveals that the internet especially social media brings new ways of self-expression and identification among Saudi females. Thus, creating a safe space where female body, predominant in daily life and activate participation.

### **5.3 Objective 2: To identify the role of social media in empowering Iraqi women to influence them into the IT workforce.**

For the second objective, the respondents were provided with information related to social media empowerment and its roles on encouraging women to join the IT workforce in Iraq. From the data analysis, the results show that there are significant relationship between empowerment and encourage for women to involve in IT workforce. The respondents believe that social media helps women to understand the challenges such as social and structural factors as illustrated in the literatures and enable them on it.

It was found that majority of the respondents agree that the social media provides them a platform to speak out about their lives, needs, and issues that they face as well as social media provides them with opportunities to bring information on every issues to them at their doorstep, and reach everyone in new ways. Many also agree that social media allows them to do things that many of them could otherwise never do, and it encourages them to improve the standard of living as well as develop their ideas and creativity.

In association with self-confidence and social interactions, the results indicate that women in Iraq have moved forward towards a higher level of self-confidence and have increased their social interactions due to the use of social media. Many respondents indicate that the use of social media helps maintaining good relationships among each other through online interactions. The advancement of social media in Iraq has also helped the women feel that they are significant in the society, increased self-reliance, more independent, and increased their participation in decision-making on domestic issues besides making them feel confident to be able to work along with their male colleagues.

Social media also serves as a gateway to benefits around empowerment denoting a variety of ideas, including self-confidence, autonomy, and the capacity to alter the structures that govern one's situation. Empowerment benefits flow from the fact that the social media permits information, ideas and perspectives to travel with greater ease. With that, it allows women to enlarge and develop their communities. Nevertheless, social media helps the Iraqi women to understand the barriers they face in participating in the workforce in the field of IT, such as structural and social factors.

The discussions in this paragraph and the previous show that the participations agree that social media is a tool for empowering the women to involve in IT workforce in Iraq. Thus, the research objective two has been achieved.

These findings support the findings by Beena and Vidyapith (2012); Khan and Moin (2013), that the IT especially social media empowers a women in various areas like social, educational, personal, psychological, political, and economical. In addition, Abisola, Oyesomi, Nelson and Omole (2014) found out that social media empowers and encourages women in diverse ways, one of which is that the social media encourages women to engage in economic activities that build-up networks with colleagues, business partners, workers, and clients. This study concludes that women make use of the social media as a veritable source of empowerment in different spheres of life.

#### **5.4 Theoretical Contributions**

In the theoretical field, this study may provide an insight to the future research, adding up the existing literatures with its findings that support academicians and research scholars to conduct deeper research on women's empowerment through technology especially social media. This study also describes the contribution of this study to the field of IT workforce.

In general, this study applies Cyberfeminism theory created in 1990. Cyberfeminism focuses on women and how to defend the use of technology in all fields, for the empowerment of women, and increase the level of their awareness (Ajjan et al., 2014). This study confirms the importance of Cyberfeminism theory because this theory was created to increase the awareness among women and empowers them by using social media towards encouraging them to involve in IT workforce.

This is consistent with Monami and Shams (2014), that during the past ten years, Bangladeshi women have been enthusiastic about harnessing the easily-accessed services provided by the Internet. According to a nationwide survey on the media conducted by the Bangladesh Telecommunication Regulatory Commission, as of January, 2013, the number of Bangladeshi internet users stood at 30.48 million. The number of Facebook users is recorded as 3.9 million and rising with a new user registered every 20 seconds. Thus, the availability of Facebook has the potential to empower women through the enhancement of female participation in small or medium e-commerce.

In addition, Cattane (2012) delved into the motivations and experiences of Egyptian women with regard to the utilization of blogging as an instrument in the empowerment process. Blogging acts as a linkage between gender parity and

empowerment, the Internet and social media as an online community realm, as well as feminism and Cyberfeminism.

### **5.5 Practical Contributions**

The goal of this study is to explore the relationship between the elements impacting on encouraging women to involve in IT workforce. This study contributes to the role of social media by bringing awareness about IT workforce and empowering women on factors that may hinder the attraction and participation of women in IT workforce in Iraq that is not highlighted in the previous studies.

### **5.6 Limitation of Study**

There are some limitations and obstacles that must be considered in the investigation in the future in this study. First, this study only focuses on the females from a particular college, thus limiting the generalization of the findings. Second, this study relies only on quantitative techniques to encourage Iraqi women in IT workforce in this study. Hence, this study would therefore suggest that future studies consider alternative solutions in order to overcome such limitations in future research.

### **5.7 Recommendation for Future Work**

On the basis of the findings from this study, and the conclusions drawn, the following recommendations are made which would improve the participation of women in IT workforce by using social media:

More research in the area of awareness of the use of social media within the general workforce in Iraq is required, in order to enhance the understanding on the influence of social media towards employment in general, and towards employment of women into specific workforce.

Studies have shown that women participate less in the IT profession (Neuhauser, 2007; Panko, 2008; Wentling, 2009). Thus, in order to understand the under-representation that goes deeper than a quantitative study, future research could be done using a qualitative methodology due to the time limit and resources.

Another recommendation for future research is to examine the relationship between women and social media in various sectors such as government, healthcare, aerospace, and security.

## **5.8 Conclusion**

This study was conducted with the aim of identifying the role of social media among women in Iraq and its influences in encouraging women to work in the IT workforce in Iraq. A conceptual framework was designed using Cyberfeminism theory. This study uses quantitative data analysis techniques based on the questionnaire distributed to female students' Baghdad University – Collage of Education Ibn al-Haytham.

The descriptive analysis provides reliable evidences that support the respondents' high level of agreements towards the use of social media and its influences, where the independent variables; Awareness and Empowerment; are found to be correlated with the dependent variable; Encouragement. Thus, according to the data analysis conducted and described in Chapter 4, it can be concluded that there is a high level of

awareness and empowerment among women in Iraq regarding the role of social media and its influences in encouraging them to work in the IT workforce.

As a conclusion, it is found that although social media is presumably new in Iraq, it has started contributing towards the indication of success and advancement among women in the nation. This is perhaps due to the fact that in Iraq, as a newly developing country, the emergence of the technology era has taken its' effect and has been accepted into the general norm of live and into the working lives of women in specific.



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