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Nkwe, Nugi

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RISKS AND MOTIVATION IN THE USE OF SOCIAL NETWORK SITES: AN EMPIRICAL STUDY OF UNIVERSITY STUDENTS

NUGI NKWE

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STUDENT ID: 761212

SUPERVISOR:

PROF. J.COHEN

ABSTRACT

Social Network Sites (SNS) such as Facebook, Instagram, Twitter, Piniterest and Google+ have made it easy for youth to communicate, produce and share information. Using SNS has become a daily activity for many youth and young adults around the world, including South Africa. The use of SNS by youth may be motivated by needs for safety, belonging, self-esteem and self-actualization, and others such as enjoyment. Yet, the use of SNS by youth may also carry a number of risks. They include risks to violations of privacy, social and psychological risks that may harm the user's self-image, as well as time and financial risks resulting from excessive SNS usage.

The purpose of this study is to understand the tension between *risks* and *motivation* in the use of SNS by university students. To do so, this study developed an extended Technology Acceptance Model (TAM). Multi-dimensional risk and motivation constructs were examined for their interactions with TAM constructs of perceived ease of use and perceive usefulness and their effects on SNS usage intentions and actual usage were examined.

To test the model, a non-probability convenience sampling method was adopted using students from the University of the Witwatersrand, Johannesburg. Five hundred and fifteen students participated in the study. The ages ranged between 18 and 34 years, 26% males and 74% females took part in the study, and included students from 1st year through to 4th year undergraduate or Honours level.

Facebook was found to be the most used SNS. Approximately 80% of respondents reported accessing SNS on their mobile phones and 66% reported being always connected. More than 25% of respondents were actively using SNS for more than 3 hours a day, with 35% using less than one hour per day. Interestingly, only 35% reported having public profiles although 10% did not know whether their profiles were public or private, and nearly 40% of respondents knew less than half the "friends" they were connected to on SNS

Partial least squares approach to structured equation modelling was used to test the hypothesised research model. Results showed that motivation influences perceived usefulness (β=0.239, $p<0.001$) and perceived ease of use (β=0.319, $p<0.001$) positively. The results suggest that when motivations such as enjoyment and need to belong are high, SNS will be perceived as useful and easy to use.

Risk was found to have a negative influence on perceived usefulness (β=-0.0764, $p<0.05$) and perceived ease of use (β=-0.3265, $p<0.001$). The results show that when risks are considered high, users are likely to increase their vigilance and consequently will report SNS as less easy to use. Moreover, as a result of risk users may find the SNS less useful.

Perceived usefulness (β=0.295, $p<0.001$) influences intention to use SNS positively. This suggests that when SNS is useful to users, they will have intentions to use it. Intention to use SNS is also influenced by perceived ease of use (β=0.0396, $p<0.01$). An easy to use SNS will

make users want to use it, as opposed to one considered more complex and requiring more effort.

Motivation (β=0.281, $p<0.001$) was found to have more of an effect than risk (β=-0.071, $p<0.05$) on intentions to use. Respondents thus appear to recognize some risks associated with SNS use, but they appear to be driven more by motivations and less by risk avoidance when deciding on SNS usage.

The study will have implications for researchers, SNS providers and users. The results of the study have implications for how researchers conceptualize risk and motivation. The study shows how different dimensions of risk and dimensions of motivation affect the overall risk and overall motivation construct respectively. Currently SNS providers may not have deep understanding of the risks which hinder the use of SNS and motivations which drive the use of SNS. Providers will be better informed to design SNS that are less risky and where possible mitigate the risks. Results also show that SNS providers should not only mitigate risks but also provide online social networks that better fulfil motivational needs of youth.

Users will be aware of different risks they are exposing themselves to by using SNS. Since users will be aware of the different types of risks, they can be vigilante when using SNS.

Keywords:

Motivation, Risk, TAM and Social Network Sites

Table of Contents

ABSTRACT i
Table of Contents iii
List of Figures: vi
List of Tables: vii
CHAPTER 1 – INTRODUCTION 1
1.0 Introduction 1
1.1 Introduction to the Problem of Social Network Site Usage 1
1.2 Problem Statement 3
1.3 Purpose of the Study 3
1.4 Research Objectives 3
1.5 Importance and Contribution of the Study 5
1.6 Structure of the Dissertation 6
CHAPTER 2 – LITERATURE AND THEORETICAL BACKGROUND 8
2.0 Introduction 8
2.1 Overview of Social Networking 8
2.1.1 Facebook 9
2.1.2 Twitter 10
2.1.3 Instagram 11
2.1.4 Other social network sites 12
2.1.5 Characteristics of Social Network Sites 13
2.2 Risks and Motivation in Social Networking 13
2.2.1 Risks 13
2.2.2 Motivation 16
2.3 Past Studies of SNS 17
2.4 Theoretical Background 18
2.4.1 Risk and Motivation 18
2.4.2 Risk and Motivation in the Use of SNS 19
2.4.3 Technology Acceptance Model 22
2. 5 Research Model and Hypotheses 24
2.5.1 Behavioural Intention to Use and Actual Usage 24
2.5.2 Perceived usefulness and perceived ease of use) and Intention to use 25
2.5.3 Risk 26

2.5.4 Motivation 30
2.6 Controls 32
2.7 Conclusion 32
CHAPTER 3 – RESEARCH METHODS 34
3.0 Introduction 34
3.1 Research Methodology 34
3.2 Research Philosophy 34
3.3 Research Approach and Design 35
3.4 Research Strategy 36
3.5 Time Horizon 37
3.6 Data Collection and Data Analysis 37
3.6.1 The Primary Data 37
3.6.2 Unit of Analysis and Population 37
3.6.3 Questionnaire 39
3.6.4. Measurements: 39
3.6.5 Pre and Pilot testing 43
3.6.6 Administration of the instrument 43
3.7 Analysis Approach 44
3.7.1 Initial Reliability and Validity Testing 44
3.7.2 PLS Approach 44
3.7.3 Hypothesis Testing 45
3.8 Ethical Considerations 46
3.9 Study Limitations 47
3.10 Conclusion 48
CHAPTER 4 – EMPIRICAL RESULTS 49
4.0 Introduction 49
4.1. Data Preparation 49
4.2 Respondent's demographic data 50
4.3 Principal Component Analysis 63
4.4 Confirmatory Analysis of the Measurement Model 66
4.5 Structural Model and Hypotheses Testing 70
4.6 Impact of Gender on SNS use 72
4.7 Risk and Motivation on Usage 73

4.8 Conclusion....74
CHAPTER 5 – DISCUSSION....76
5.0 Introduction....76
5.1 Interpretation of Demographics Data....76
5.2 Perceived usefulness and perceived ease of use in the use of SNS....77
5.3 The role of motivation and risk in SNS use....78
5.3.1 The role of Motivation in SNS use....78
5.3.2 The role of Risk in SNS use....79
5.4 Risk versus Motivations....81
5.5 Conclusion....81
CHAPTER 6 – CONCLUSION....82
6.0 Introduction....82
6.1 Summary of the Study....82
6.2 Implications of the study....83
6.2.1 Implication for Theory....83
6.2.2 Implication for practice....84
6.3 Limitations and Future Research....87
6.4 Conclusion....88
REFERENCES....89
APPENDICES....110
Appendix A: Past studies on SNS....111
Appendix B: Studies on Motivation....116
Appendix C: Risk as factor....118
Appendix D: Ethics Clearance....120
Appendix E: Registrar's Permission Letter....121
Appendix F: Survey Invitation Letter....122
Appendix G: Consent Form....123
Appendix H: Questionnaire....124
Appendix I: Initial Structural Model....129
Appendix J: Risk and Motivation on Intention and Usage....130

List of Figures:

Figure 1 : Facebook Page....10
Figure 2 : Twitter Page....11
Figure 3 : Instagram Page....11
Figure 4 : Pinterest Page....12
Figure 5 : Google+ Page....12
Figure 6 : Basic TAM Model....23
Figure 7 : Research Model: An extended TAM Model with Risk and Motivation....24
Figure 8 : Diagram showing overview of research methodology....34
Figure 9 : Saunders Research Onion....35
Figure 10 : Sampling Approach....38
Figure 11 : Gender of respondents....52
Figure 12 : Number of respondents per faculty....52
Figure 13 : Respondents' place of residence....52
Figure 14 : Graph of Most Used SNS....53
Figure 15 : Graph of Age at First Use....53
Figure 16 : Graph of use on average a day....56
Figure 17 : Graph of displayed information on SNS....56
Figure 18 : Graph of usefulness items means....61
Figure 19 : Graph of top 5 risk items based on mean....61
Figure 20 : Graph of bottom 5 risk items base on mean....62
Figure 21 : Graph of top 5 motivation items based on mean....62
Figure 22 : Graph of bottom 5 motivation items based on mean....63
Figure 23 : Structural Model....71
Figure 24 : Model with intention excluded....73

List of Tables:

Table 1: Multiple Dimensions of motivation and definition 21
Table 2: Multiple dimensions of risk and definitions 22
Table 3: Perceived Usefulness 40
Table 4: Perceived Ease of Use 40
Table 5: Multi-dimensional Risk 41
Table 6: Facets of Motivation 41
Table 7: Usage 42
Table 8: Behavioural Intention 43
Table 9: Missing Values 50
Table 10 : Demographics of Respondents 51
Table 11 : Usage Description 55
Table 12 : Pearson Chi-square results 57
Table 13 : Statistics for measurement items 58
Table 14 : Principal Component Analysis results 65
Table 15: Table of reliabilities 66
Table 16: VIF for Risk 67
Table 17 : VIF for Motivation 67
Table 18 : Outer Loadings 68
Table 19 : Outer Weights 68
Table 20 : Composite Reliability and AVE 69
Table 21 : Item Cross Loadings 69
Table 22 : Inter-correlation of the latent variable 70
Table 23 : Bootstrap Output 72
Table 24 : Impact of gender on SNS use 73
Table 25: Table of effects 74
Table 26: Outcomes of the hypothesis testing 75

CHAPTER 1 – INTRODUCTION

1.0 Introduction

This chapter provides an introduction to social network site usage. The research objectives, importance and contribution of the study are described. Finally, the structure of the dissertation is presented.

1.1 Introduction to the Problem of Social Network Site Usage

Social Network Sites (SNS) are websites which provide a digital platform for interaction with others in a social network through sharing content such as messages, posts, videos and photos (Ellison, 2007). Individuals are attracted to SNS sites because of their potential to enhance communication, facilitate information sharing and collaboration, and provide a tool for relationship formation and maintenance (Kim, Sohn and Choi, 2011; Thackeray, Neiger, Smith and Van Wagenen, 2012). Some SNS have a particular purpose e.g. LinkedIn is oriented towards the work-related context, Friendster is focused on initiating romantic relationship, YouTube facilitates the sharing of videos and others, Facebook, have roots in connecting and sharing of information amongst university student population (Ellison, Steinfield and Lampe, 2007). SNS also offer a user-centred approach. This approach makes SNS to be centred around the profile or user's home page (Keenan and Shiri, 2009). SNS is user centred because of the greater proportion of the content that the users produce, the increased immediacy and the absence of professional editing involved in the social media setting (Hussein, Alaa and Hamad, 2011; Johnson, 2013).

Social Network Sites (SNS) have more than 2.3 billion combined users (See-To and Ho, 2014) and Facebook is enjoying the largest share of users at 1 billion users (Zhenfang, Chhachhar and Gillani, 2014). Worldwide, the use of SNS such as MySpace, LinkedIn, Facebook and Twitter has grown exponentially across different age groups between the years 2005 and 2013 (Brenner and Smith, 2013; Wang, Scown, Urguhart and Hardman, 2014). China has the highest number of users of SNS as of October 2013 (Park and Kim, 2013), while South Africa is ranked 28 in the top 30 countries in the world in Facebook usage (Bohler-Muller and van der Merwe, 2011), and amongst the top countries in Africa with the highest SNS population (South Africa is second with 9.4 Million Facebook users) (SA Social Media Landscape, 2014; Veerasamy and Govender, 2013). Facebook and twitter have been dominating SNS landscape for a long time but that is changing with the emergence of other SNS providers such as Instagram and the South African Mxit[1] (SA Social Media Landscape, 2014).

[1]Mxit (pronounced "mix it") is a free instant messaging application developed by Mxit (Pty) Ltd in South Africa

The youth still account for the majority of SNS users with SNS becoming a cornerstone in the lives of many teenagers, high school, and college students (Lampe, Vitak and Ellison, 2013; Lenhart and Madden, 2007; Ofcom, 2008). Definition of youth varies across countries.

Youth in South Africa is defined as 14-35 years cohort (National Youth Policy, 2009). This study focuses on youth in the 18-25 years bracket. This is based on research which showed that the majority of SNS users are young individuals from the ages of 18 to 24 years (PEW, 2014). These individuals are most heavily utilizing Facebook (Raacke and Bonds-Raacke, 2012; Corbett, 2010) and spending more hours a day on SNS (Tandoc et al., 2014).

Youth born after 1980 have been described as "digital natives" (Prensky, 2011) where many aspects of their daily activities and lives such as their social interaction, friendships, civic activities, and hobbies are mediated by technology (Palfrey and Gasser, 2013). Digital natives rely on technology. Their lives are immersed in technology and surrounded by computers, videogames, digital music players, video cams, cellphones and all the other 'toys and tools' of the digital age (Prensky, 2001).

In contrast to Prensky's concept of digital natives, other researchers (Bennett, Maton and Kervin, 2008; Bennett and Maton, 2010; Helsper and Eynon, 2009) have a different view. They argued that there are other factors which define the young generation better than the concept of them being surrounded by technology (Prensky, 2001). They suggest that while technology is embedded in youth's lives, young people's use and skills are not uniform (Bennett et al., 2008). Consequently, not all youth are expected to exhibit the same technology behaviours.

The growth in SNS adoption and its high degree of usage amongst the youth is an interesting phenomenon to understand, especially when one considers the risks involved in using SNS. SNS exposes users to a number of risks (Casalo, Flavian and Guinaliu, 2011). Boyd (2006) quoted one attention-getting headline "Generation shock finds liberty online: the children of the internet age are ready to bare their bodies and souls in a way their parents never could".

The risk associated with SNS use includes usage (Chen, 2013; Grieve, Indian, Witteveen, Tolan and Marrington, 2013; Kuss, Griffiths and Binder, 2013; Litt, 2013; Trepte and Reinecke, 2013):

- risks of disclosure of private information by either the SNS user him/herself or by SNS 'friends' and contacts,
- risks from phishing emails from social networking sites that encourage users to visit fraudulent or inappropriate websites,
- risks of cyber-stalking,
- risks of prosecution or recrimination from posting offensive or inappropriate comments; risks of viruses or spyware contained within message attachments or photographs,

- risks from concealed hyperlinks beneath legitimate clickable content which, when clicked, cause a user to unknowingly perform actions,
- risks to self-image that result from certain comments on SNS,
- and financial risks resulting from data bundles.

Thus use of SNS appears to be associated with a number of privacy, physical, financial, social, psychological, time and performance related risks.

Despite such risks, the number of users continues to grow and usage is estimated to be daily for 95% of SA youth (Veerasamy and Govender, 2013). Thus understanding the motivations of youth to use these sites in the face of such risks is therefore a research problem in need of attention. Although research in South Africa (e.g. Du Plessis, Van Heerden and Cook, 2010; Veerasamy and Govender, 2013) has previously reported on the overall prevalence of Internet and SNS use, the tension between motivation and risk in use of SNS has not been comprehensively examined. In the usage of technology, there may be opportunity factors motivating usage and barrier factors inhibiting usage (Cocosila et al. 2009). The purpose of this study is to investigate the tension between motivation and risk factors in the use of SNS by university students.

1.2 Problem Statement

There is a problem of limited understanding of factors influencing university students' adoption and use of SNS. Students have been found to adopt and use SNS in high numbers and also use SNS for extend period of time. Factors such as motivations and risks which influence students to use SNS are still not well understood. Use of SNS exposes users to a number of risks. Understanding the adoption and use of SNS by university students is interesting, especially when one considers the risks involved in using SNS.

Despite the high degree of SNS usage, researchers still do not understand what motivates the students to use or what hinders use of SNS.

1.3 Purpose of the Study

The purpose of the study is to understand how risk and motivation combine to effect intention. Further, the study will examine motivation and risk's relative effects so as to better understand how the tensions between the two play out in SNS use. In addition the study will examine the amount of time students spend on SNS and level of usage of different SNS platforms.

1.4 Research Objectives

Given the above stated problem, the objective of the study was to propose and test a model of how motivation and risk perceptions influence the use of social network sites amongst university students. The study aimed to understand how risk and motivation combine to effect

intention, as well as to examine their relative effects so as to better understand how the tension between risk and motivation play out in SNS use. To achieve these objectives, the study:

- reviews literature in the area of SNS usage and develop a model of the relationships among:
  - motivation (needs fulfilment) and TAM constructs,
  - risk and TAM constructs,
  - motivation and risk and combined effects on intentions and actual use,
- develops an instrument (questionnaire) that can be used to measure the constructs in the proposed model,
- collects data from a sample of youth between the age of 18 and 25 at a South African University campus,
- tests the hypothesized research model using PLS approach to structural equation modelling.
- the study will discuss implications of the findings and make.

More specifically, the study developed an extended technology acceptance model (TAM) (Davis, Bagozzi and Warshaw, 1989; Davis, 1989; Davis, 1993) in order to describe SNS risk and motivation perceptions of youth. Suki, Ramayah and Ly (2012) in their study of factors influencing the intention to use Facebook concluded that TAM, and its variables of perceived usefulness and perceived ease of use, was a useful underpinning in studies involving adoption and use of technology. TAM was extended by drawing on theories of risk (Featherman and Pavlou, 2003; Luo, Li, Zhang and Shim, 2010) and motivation (Lee, Cheung and Chen, 2005; Maslow, 1954) to hypothesize the effects of risk and motivation as additional determinants of use that may interact with TAM constructs of perceived usefulness and perceived ease of use.

Students from the University of the Witwatersrand, Johannesburg were used as the study sample. They were surveyed using non-probability convenience. A total of 515 usable responses were obtained from ten available classes each from a randomly selected school across the five faculties of the University of the Witwatersrand, Johannesburg. A questionnaire was used to collect data. The questionnaire was pre and pilot tested. The measurements items were tested for validity and reliability. The partial least squares (PLS) approach to structural equation modelling was used to test the model to confirm or reject the study's hypotheses.

1.5 Importance and Contribution of the Study

The study sheds light on some important issues related to users' intentions toward social network sites that have not been addressed by previous studies. Cocosila (2007) has previously acknowledged that this is an area worthy of continued research. Examining adoption and use in SNS through the risk and motivation theory provides additional insights into use of the SNS. The study makes a threefold contribution; theoretically, empirically and to practice by deepening understanding of SNS users' behaviour, which can benefit users, researchers and providers.

First, from a theoretical perspective, the model provides an enhanced explanation of SNS user's decision-making process, incorporating the effects of multi-dimensional perceived risk and motivation and assessing their impact not only on use intentions about also on actual use behaviours.

Although user perceptions of the risks of using SNS have been studied by many researchers (Aimeur et al., 2010; Harden et al., 2012; Lorenzo-Romero et al., 2011), the perceived risk variable has only been modelled as a single construct, which fails to reflect the dimensions of perceived risk and explain why users resist SNS. This study overcomes this limitation of past work. The study conceptualizes perceived risk as a multi-dimensional construct, consisting of seven dimensions. This provides for a more in-depth understanding of how different risk perceptions come to influence SNS use. The technology acceptance model extended with risk and motivation constructs has been theorized and will be empirically validated in this work. Motivation in use of SNS has been studied in the past (Davis et al. 1992; Sledgianowski and Kulviwat, 2009; Wakefield and Whitten, 2006). It was conceptualized as a single construct i.e. intrinsic and extrinsic motivation or enjoyment. This does not adequately reflect the influence of motivation in SNS use. This study conceptualizes motivation through the lenses of Maslow's hierarchy of needs and as a formative construct. This provides an opportunity for a more in-depth examination of motivation in the use of SNS than presented in past work.

Second, the study provides much needed empirical evidence to improve our understanding of motivation and risk related factors that users consider as they engage in SNS. In addition, prior studies have not adequately considered the relationship between risk and motivation and thus how they work independently or in combination to influence behavioural intentions. By distinguishing among the concepts of risk and motivation both conceptually and empirically, the study provided important insights into their distinct roles in the users' intentions to use SNS.

Third, from a practical standpoint, the study highlights risk-motivation factors that may guide the successful use of SNS. SNS providers will gain understanding of different dimensions of risks and facets of motivation which affect SNS use.

Currently SNS providers understand that using SNS may be risky but they may not have an in-depth understanding of the risks. The study intends to help SNS providers to better

understand different dimensions of risk as perceived by users and how each contributes to the overall risk. In addition, the study will inform them on how risk affects intention to use SNS and how risk influences motivation in using SNS. It has been found that people use technology including SNS because of its usefulness and ease of use. The study will inform providers on how risk influences perceived usefulness and perceived ease of use.

The examination of the relationship between perceived usefulness and perceived ease of use in the use of SNS will help providers to better understand how the two are related and affect intention to use.

In addition, the study examined the impact of motivation on SNS use. Motivations are known to influence behaviours. The dimensions of motivation will be studied and how each affect overall motivation. The five dimensions of motivation may be contributing or having different weights on overall motivation in the use of SNS. Providers will have a deeper understanding of how motivation influences intentions in the use of SNS. Furthermore, the relationship between motivation and perceived usefulness and perceived ease of use will be important. The study will inform the providers how users perceive each when they are motivated.

The analysis will also give SNS providers information on the demographic characteristics of users of SNS. It will reveal usage such as time spent on SNS, the most used SNS, how many friends on average users have and others such as gender differences in the use of SNS. Providers will also be able to differentiate the influence of each risk and each motivation in the use of SNS and be in a position to act accordingly. This will be particularly important for providers as they decide how to allocate resources to retain and expand their current user base. However, building a risk-free SNS environment is much more difficult than providing motivation to users (Lee, 2009). Therefore, SNS providers need to search for risk-reducing strategies that might assist in inspiring high confidence in potential and current users. Providers may have to educate their users on risks involved in using SNS and how best to mitigate them.

The study will also be important to users. They will be able to understand the different types of risks they expose themselves to by using SNS. And also, the study will highlight to the users the amount of time they spend on SNS and how others make use of SNS. Depending on the risks, users too will have to act. They will have to be vigilant so that they can avoid or reduce the risks when using SNS to meet their motivational needs.

1.6 Structure of the Dissertation

Chapter 1: Presented the introduction of the problem of social network sites usage, outlined the research objectives and approach, and presented the importance / relevance of the study.

Chapter 2: Presents overview of social networking, risks and motivation in social networking. A review of literature and past SNS studies are presented in this chapter. Theoretical background for the research model, underpinning theory, the research model and associated hypotheses are included in this chapter.

Chapter 3: Presents the hypothetico-deductive, quantitative and survey-based methodology used in the study. Non-probability convenience sampling of the population, the pre and pilot testing of the instrument, data collection, content, convergent and discriminant validity of the measurement items, PLS approach to hypotheses testing and study limitations

Chapter 4: Organizes and reports the study's main findings, including the presentation of relevant quantitative data. The chapter presents the respondent profile using demographic data. Results of principal component analysis (PCA) and confirmatory factor analysis are presented as confirmation of construct validity. The chapter then includes the results of the test of the structural model using partial least squares analysis, which was used to accept or reject the study's hypotheses

Chapter 5: This chapter presents a discussion of the results of this study. Findings are discussed with reference to prior literature. The chapter discusses where theory has been confirmed or why findings might contradict expectation from theory. The literature is drawn upon the theory of reasoned action. Chapter 2 discusses this underpinning.

Chapter 6: The chapter presents conclusions, limitations, implications and recommendations of the study.

CHAPTER 2 – LITERATURE AND THEORETICAL BACKGROUND

2.0 Introduction

This chapter presents an overview of social network sites, and discusses the risks and motivations associated with the use of social networking. A review of the literature and past SNS studies is presented together with the theoretical background for the research model. The research model and associated hypotheses are then developed.

2.1 Overview of Social Networking

SNS are Web 2.0 based social applications (Murugesan, 2007). The second phase of web's evolution is known as Web 2.0 (Fu and Wang, 2007; Lefebvre, 2007; O'Reilly, 2005; Reactive, 2007). Web 2.0 is often referred to as wisdom Web, people centric Web, participative web and read/write Web. SNS have characteristics which define Web 2.0 (Murugesan, 2007; O'Reilly, 2005). Some of the characteristics of Web 2.0 include interactive and collaborative, emphasizing peers' social interaction and collective intelligence (Högg et al. 2006). Web 2.0 technologies such as SNS are becoming popular in consumer and business context (O'Reilly, 2005).

Social network sites are websites that enable users to create public or private profiles within that website and form relationships with other users of the same website who access their profile (Boyd and Ellison, 2007). More formally social networking sites (SNS) are defined as "web-based services that allow individuals to (1) construct a public or semi-public profile within a bounded system, (2) articulate a list of other users with whom they share a connection, and (3) view and traverse their list of connections and those made by others within the system" (Boyd and Ellison, 2007:211).

Social networking existed before the web and there were other forms of networking which existed before SNS. For example Duke University in 1979 created Usenet which was a worldwide online discussion system. Social networks delivered over the web started around 1997 (Boyd and Ellison, 2007). Six degrees can be traced as one of the first web based SNS. It was launched in 1997 by Andrew Weinreich (Ellison et al., 2007).

Six degrees provided the user the opportunity to build profiles, display friends and peruse the friend's lists (Shim, 2008). It is suggested that Six degree was not sustainable and was shut down because it was "ahead of its time", it came at a time when not many users were online (Boyd and Ellison, 2007).

However, rapid SNS expansion was observed between the years of 1997-2001(Boyd and Ellison, 2007; Shim, 2008). This increased use of SNS can be associated with high speed internet (Kaplan and Haenlein, 2010).

For example, sites for business networking and personal connections and dating, such as AsianAvenue and BlackPlanet, were popularized around that time. There was no specific

SNS for businesses until the introduction of Ryze.com which provided businesses with a means to maximize their networks. Ryze.com is the idea that gave birth to other popular sites like LinkedIn, Friendster and Tribe.net. Many of the above mentioned social network sites failed. For example, Ryze.com did not penetrate the market, Tribe.net was only accepted by small amount of selected users, and Friendster was significant but focused more on the media and less on the social (Boyd and Ellison, 2007).

Around 2003, the landscape in the SNS space changed with the release of new sites such as MySpace, Facebook and LinkedIn. SNS became popularized around this time as the majority of SNS built on the success of Friendster by taking the profile-centric approach to SNS design (Boyd and Ellison, 2007). Moreover, the growth of user-generated content led to other websites traditionally focused on media sharing adding SNS features. Examples include Flickr for photo sharing, Last.FM for music listening and YouTube for video sharing.

Social networking sites offering different benefits or features have continued to emerge and evolve in response to user preferences. Currently, SNS such as Facebook, Twitter, and Instagram are highly popular amongst the youth (PEW, 2014) with sites such as Hi5 and Myspace losing favour (Stelzner, 2014).

To provide context for this study, these contemporary social network sites are described further below.

2.1.1 Facebook

Facebook was launched in 2004 by Mark Zuckerberg at Harvard University as a tool for connecting students. Figure 1 shows Mark Zuckerberg Facebook profile. It was exclusive to Harvard students as membership required a Harvard email address (Cassidy, 2006). Membership was later extended to other college students. Finally it was opened to the public. Any person above the age of thirteen can be a member. Lately, organizations are establishing SNS profiles for the purposes of marketing, communication and employee recruitment (Richter and Riemer, 2009).

Facebook has grown to be the leader in the SNS space. According to Facebook (2014), there are 1.35 billion monthly active Facebook users and 92% of SNSs users are on Facebook (Hampton et al., 2011). Majority of Facebook users are youth and researchers suggest that this is due to its origins in a university-aged population and the ease with which younger individuals tend to adopt new technologies (Kirschner and Karpinski, 2010). Individuals from the ages of 18 to 24 years tend to be the demographic most heavily utilizing Facebook, with one study estimating that 75% of the 18 to 24 years age group are on Facebook as opposed to 57% of the 25 to 34 years age bracket (Corbett, 2010).

Murphy (2012) concluded that most Facebook users are ‘always on’ Facebook. It was found that Facebook users spend between 30 to 40 minutes on average each day using the SNS (Ellison et al., 2007; Tandoc, Patrick and Duffy, 2014).



Figure 1 : Facebook Page

2.1.2 Twitter

Twitter founded in 2006, is an SNS that is used to send and read textual messages. These messages are usually referred to as "tweets", which are made of up of 140 characters. Initially tweets were to be shared via SMS but it developed in to other services such as web and desktop (Boyd et al., 2010). Twitter has characteristics of a blog and SNS. SNS are based on connection (people connecting together), and Twitter profiles too are connected. Twitter profiles' connections are different from other SNS connections because they are direct (Agrifoglio, Black and Metallo, 2010). The presentation of participants' tweeter pages in reverse chronological order make it similar to blogs (Boyd and Ellison, 2007).

Twitter is among the SNS that are currently enjoying a large user base. It has quickly gained popularity and has 284 million monthly active users (Agrifoglio et al., 2010). In 2014, it was found that 23% of adults use Twitter and it is most popular among the ages of 23 to 29 years. There was no gender disparity in the use of Twitter (PEW, 2014). It was found that 90% of Twitter users tweet at least 11 times and have at least 11 followers (Zarella, 2009).

Twitter describes itself as service that is for anyone who wants to follow the 'news' (Twitter, 2014). Twitter stated that its users include millions of people from around the world, as well as influential individuals and organizations, such as world leaders, government officials, brands and celebrities. For example, Figure 2 shows a celebrity's profile, Kim Kardashin's Twitter profile. In contrast, Facebook is for friends and family.

Studies (Blaszka, 2014; Luo, Osborne, Tang and Wang, 2013; Rinkus, 2012) show that Twitter users spend between 30 minutes to an hour a day on the SNS. Twitter usage has increased by at least 50% since 2008 (Webster, 2010). Young adults are the majority when it comes to using Twitter for status updates. One-third of online 18-29 year olds post or read status updates (PEW, 2014).



Figure 2 : Twitter Page

2.1.3 Instagram

Instagram was created by Kevin Systrom and Mike Krieger and launched in 2010. It is an online mobile-sharing, video- sharing and social network service that enables its users to take pictures (Figure 3 shows a picture shared by Kerem) and videos, and share them on a variety of social networking platforms, such as Facebook, Twitter, Tumblr and Flickr (Salomon, 2013).

Instagram gained active users within a short period of time, in 2012 it had over 100 million user and over 300 million in 2014 (Bakhshi, Shamma and Gilbert, 2014). Instagram users are 68% female and 32% male. It was found that majority of the users are in urban areas (Salomon, 2013). Instagram has been found to largely attract a young generation of users with 90% of users reported as under the age of 35 (Business Insider, 2014).

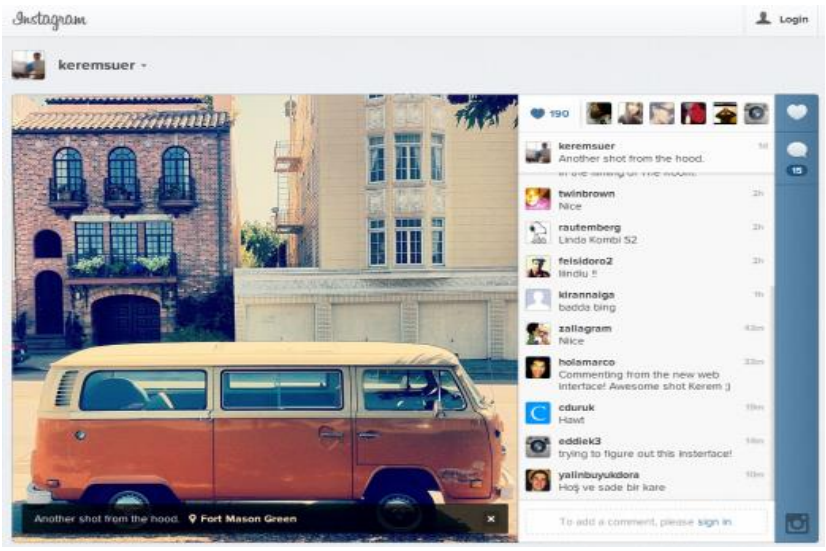

Figure 3 : Instagram Page

2.1.4 Other social network sites

There are other social network sites which are not as popular as the above mentioned three, SNS such as Pinterest (Figure 4), and South African Mxit. Other SNS such as Google+ (Figure 5) are popular in other regions of the world may be less so in Africa.

Pinterest was launched in 2010 as a web and mobile application company that offers a visual discovery, collection, sharing, and storage tool. Users create and share the collections of visual bookmarks (boards) (Business Insider, 2015). Semiocast published that Pinterest had 70 million users worldwide in 2013.

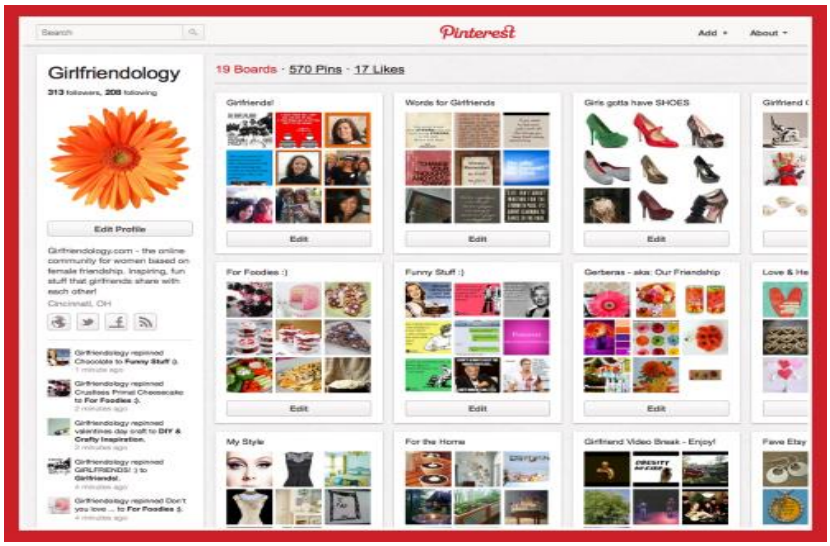

Figure 4 : Pinterest Page

Google+ owned by Google was launched in 2013 as social networking and identity service. It had 540 million active users in 2013 (Russell, 2013).



Figure 5 : Google+ Page

University of Stellenbosch in South Africa is the originator of Mxit, which is a free instant messaging application (Social Media Landscape, 2014). It had 7.4 million monthly active subscribers in July 2013 (Electronic Frontier Foundation, 2014).

2.1.5 Characteristics of Social Network Sites

SNS are different from other websites that may be used for information sharing. Specifically, SNS have characteristics such as bottom-up adoption; user generated content and social interaction and networking as their main features (Soliman, 2012).

Bottom up adoption: SNS are usually adopted by individuals before organisations. This adoption and use of SNS by individuals may be motivated by factors such as enjoyment, need to belong, extrinsic and intrinsic needs. Therefore adoption and use may be triggered by personal needs or motivations (Soliman, 2012) as opposed to external factors. For example, if a company wants its employees to use SNS, it will be difficult for the company to impose that decision on its employees (top down approach), but it will be easy when the individuals are motivated to use SNS. SNS adoption is driven by individuals' needs.

User generated content: SNS are encouraging creativity. Users' content on SNS reflects users' creative effort (Vickery and Wunch-Vincent, 2007). New opportunities, ideas, culture exchange and knowledge sharing take place because of user generated content. Mostly users do not get financial compensation for sharing content. This sharing is driven by motivations such as enjoyment (Gillmor, 2004), users enjoy been active and simultaneously contributing to discussions or SNS conversations.

Social interactions and networking: A key feature of SNS is increased interaction and collaboration among users (Lai and Turban, 2008). Users use SNS to fulfil the need to belong (Parameswaran and Whinston, 2007), they make friends and share information with family and friends. SNS users may be using SNS to leverage their social capital (Ellison et al., 2007). Facebook gives users the opportunity to search their network to see who is connected to who for the purpose of making new connections i.e. new friends, meeting relatives and searching for users with the same interests (Lampe, Ellison, and Steinfield, 2006).

These defining characteristics of SNS suggest that SNS use is underpinned by a number of individual-level motivations. However, the use of SNS does present a number of risks. The risks and motivations in SNS use are explored further in the next section.

2.2 Risks and Motivation in Social Networking

The impetus for use of SNS can be need fulfilment such as enjoyment, need to belong, safety, self-actualization and self-esteem (Ross, Orr and Sisic, 2009). On the other hand, the impediments to use can be financial, social, psychological, physical, privacy, time and performance-related risks (Featherman and Pavlou, 2003). This section discusses the risks and motivations in social networking use.

2.2.1 Risks

One of the risks in SNS use is privacy-related. By using SNS, a users' personal information and those of the individuals in their social network can be easily accessed by other SNS users. Some of these other users may use the information inappropriately. Exposure to privacy risk may lead to reputation and credibility damage, security risks such as identity

theft and profiling risks (Aïmeur, Gambs and Ho, 2010), i.e. making it easy for other users to track their use of personal characteristics or behaviour patterns to make generalizations about them.

Security Threat Report (2008) identified SNS as top target for identity theft. For example, SNS are being targeted by criminals as a convenient platform from which to perpetuate identity theft. This is because SNS users allow other users access to their personal information. Some users' SNS profiles are public as opposed to private. They can be navigated or viewed in detail by people who are not in their network. Users reveal a lot of personal information on their SNS profiles i.e. contacts, address and pictures. As a result of public profiles and displayed personal information, SNS users are easy target for fraudulent appropriation and use of someone's identifying or personal data.

Youth are major users of SNS and are vulnerable to many of these SNS risks. Some of the issues that compromise their SNS profiles include the fact that they include the following information on their social networking profiles (PEW, 2010);

- Real age,
- Photos of themselves,
- City they live in,
- School name/location,
- Videos of friends,
- Videos of themselves,
- Their cell phone number,
- Places where they typically go.

SNS use may also present psychological risks to users, especially youth. American Psychological Association (2011) found that young adults who have strong SNS presence show more signs of other psychological disorders including antisocial behaviours, mania and aggressive tendencies. Another study suggested that the number of hours students spend on Facebook was positively correlated with depression (Wright et al., 2012).

Other examples of the risks that might be associated with SNS are as follows, as adopted Fox News (2007), MSNBC (2009), and L.A. Times (2010).

1. "In 2008, hackers sent messages to Facebook users stating, 'Hey, I got a new Facebook account. I'm going to delete this one, so add my new profile.' Upon clicking the hyperlink to add their friend's new account, the users were sent to a phishing page that was designed to collect their user information. The page looked identical to a Facebook login page; however, the URL was view-facebookprofiles.com, which is not a subdomain of Facebook and is one of the tell-tale signs of a phishing page. However, most people did not recognize this, and potentially thousands of Facebook users had their accounts compromised by giving away their usernames and passwords." (TechCrunch, 2008). This was not the first attempt at phishing on Facebook, but it was

certainly one of the most coordinated and stands as classic example of risks that may arise from phishing through social network sites.[2]

2. In 2007, the dangers of cyberbullying were brought to light when a teenage girl, committed suicide when it was revealed that a boy she admired on Myspace was actually a classmate's mother antagonizing the teenager for being different. The mother allegedly communicated to girl as for over one month and then abruptly ended the relationship. The girl committed suicide the same day (Fox News, 2007).[3]

3. In 2009, a man was arrested for impersonating a model named Bree Condon on the social network dating site Seekingmillionaire.com. Unlike many scams perpetrated on social networking sites, he impersonated a real model and assumed her real name. The man had phone conversations with wealthy men in exchange for money and gifts (MSNBC, 2009).[4]

In addition to the above mentioned risks, other SNS risks include social, physical, and time-related risk.

Social risk in the use of SNS involves acts such as when young users post photos of them drinking or in sexually suggestive poses (Karl, Peluchette and Schlaegel, 2010). This can lead to an embarrassment to user's social group or among significant others. In another example, Canada Border Services Agency officers lost their credibility and reputation in 2007 for posting inappropriate and offensive material on SNS about their jobs (Aïmeur et al., 2010).

Studies (Ophir and Clifford, 2009; Rouis, Limayem and Salehi, 2011) suggest that users spend a lot of time on SNS. Wang et al. (2011) results indicate that most university students spend many hours checking SNS, and interrupt their work to check SNS profiles. Users may find themselves spending time on SNS at the expense of other important duties (Kalpidou, Costin and Morris, 2011). For example, use of SNS can be distracting and can negatively impact learning. Checking SNS just once during 15 minutes of University study has been associated with lower grades (American Psychological Association, 2011). Therefore, time risk is a concern in SNS use.

Physical risk can manifest itself in different ways in the use of SNS. Users who spend time using SNS do not do enough physical activity and this may jeopardise their health (O'Keeffe and Clarke-Pearson, 2011). In addition, exposure to tablet and computer screens for extended period of time can strain the eyes (NHS, 2011). Such risks have frequently been associated with computing gaming amongst youth (Rehbein, Psych, Kleimann, Mediasci, and Mößle, 2010), but may be similarly relevant in the SNS context.

[2] L.A. Times. (2010). Man masquerading as fashion model bilks wealthy men. Retrieved on August 10, 2011 from http://articles.latimes.com/2010/jan/19/entertainment/la-et-bree-condon19- 2010jan19

[3] MSNBC. (2009). Ruling Disappoints Myspace Victim's Mom. Retrieved on August 16, 2011 from http://today.msnbc.msn.com/id/31722986/ns/today_people

[4] Fox News. (2007). Mom: Myspace Hoax Led to Daughter's Suicide. Retrieved on August 11, 2011 from http://www.foxnews.com/story/0,2933,312018,00.html.

2.2.2 Motivation

Given the popularity of SNS, it is not surprising that researchers have tried to uncover the reasons underpinning their increased use. Amongst these, an individual's basic needs such as for enjoyment, belonging, self-actualization, self-esteem and safety have emerged as the main driving factors behind the use of SNS (Childers, Carr, Peck and Carson, 2001; Ross, Orr and Sisic, 2009; Van der Heijden, 2004).

SNS fulfils the need to belong. Motivation to stay in touch with friends, make plans with friends, make new friends or just share information with someone are reported as reasons for why people join and partake in SNS use (Lenhart and Madden, 2007). In addition, SNS help users to share video and photos with friends and family.

SNS can influence self-esteem by providing a platform through which individuals may earn respect, recognition, status and independence (Schwartz, 2012). Study by University of Pittsburg and Columbia Business School said users who are "focused on close friends… tend to experience an increase in self-esteem when browsing social networks". Research at Cornell University found that Facebook walls (area on a profile or page where friends can post their thoughts, views, for everyone to see), can have a positive influence on the self-esteem of university students (Barker, 2009). This is especially if users received positive feedback from friends. The postings accuracy and attractiveness were vetted by one's often extensive network of friends. This positive feedback positively influenced their self-esteem (Toma, 2013). For example, a student can post his marks on the SNS wall and others may positively comment or congratulate the student thus making them feel recognised and prestigious in the community.

Self-Actualization, or the need for self-fulfilment, is another motivation that may underpin the use of SNS. For an individual to achieve self-actualization, they must be in a state of congruence (Rogers, 1959). Self-actualization occurs when a person's "ideal self" (i.e. who they would like to be) is congruent with their actual behaviour (self-image) (Rogers, 1961).

SNS users use these platforms to fulfil the need for self-image and ideal self (Khaldi, 2014). Self- image includes how the individual see himself, how others see the individual and how the individual perceives others see him (Florack, Scarabis and Gosejohann, 2005). Users post their pictures so that people can see or perceive them in a certain way (Yoon, 2014). SNS give users the opportunity to project their ideal self. Users can post or share pictures of the idealized version of themselves created out of what they have learned from life experiences, the demands of society, and what they admire in their role models (Mehdizadeh, 2010).

There are other forms of needs such as safety needs which may influence use of SNS (Gangadharbatla, 2000). SNS provides a feeling of being safe, secure and settled. SNS can provide a level of stability in a chaotic world (Elliot, McGregor and Thrash, 2002). Users interaction with their social network provides consistency and stability in their lives and makes them feel safe and secure (Rauniar, Rawski, Yang and Johnson, 2014; Consi et al., 2009).

Awareness and information about family and friends make one to feel safe. For example, SNS may provide the information that a user's child is safe on a trip, thus creating a calm feeling (Teras, 2011), a feeling of safety and making the user settled. In addition, SNS provide the user with structures that help people learn and develop social skills. SNS users may become more aware of their environment and may be exposed to job and employment opportunities (Jacobs, 2009), which are important part of broader concept of safety and security.

SNS provide users with enjoyable experience. It fulfils their need for enjoyment. SNS is fun, exciting and pleasing to use (Chen, 2013). Users may be deeply absorbed in using SNS they are enjoying (Webster, 2010). SNS is a fun or pleasure oriented technology (Kang and Lee, 2010). Users who enjoy engaging in SNS may develop a tendency to repeat using the SNS (Webster, 2010). SNS may provide enjoyable experience i.e. people share exciting stories, pictures and information on SNS.

It also appears from some studies that the youth are motivated more than others to use SNS. SNS usage by youth can be summarised as follows, more than 55% of youth online use social network sites and 48% of them visit SNS daily or more (Lenhart and Madden 2007). Research (Corbett, 2010; Raacke and Bonds-Raacke, 2012) found that:

- 72% of all internet users are now active on SNS
- 18-29 year olds have 89% usage
- ages of 18 to 24 years tend to be the demographic most heavily utilizing Facebook
- 75% of 18 to 24 years age group use Facebook as opposed to 57% of 25 to 34 years age bracket
- 23% of adults use Twitter and it is popular among the ages of 18 to 29 years
- 90% of Instagram users are reported to be under the age of 35

2.3 Past Studies of SNS

In order to identify past empirical studies into risk and motivation in SNS usage, a systematic review of the literature was carried out. Data sources including Web of Science, Google Scholar, ProQuest, EBSCO, Elsevier and ACM were searched using terms such as social risk, motivation, social networking sites, adoption, acceptance, use, students and youth.

Table in Appendix A summarizes past research on SNS showing gaps in how risk and motivation impact SNS use.

While past work (presented in Appendix A) has helped identify factors which influence use of SNS (e.g. privacy risk, self-actualization and need to belong), there remains little past work that has focused on both risk and motivation. Cha (2010), Lin and Liu (2012), Currás-Pérez, Ruiz-Mafé and Sanz-Blas (2013) and Forest, and Wood (2012) being notable exceptions, studies that have examined motivations in the use of SNS such as Behav and White (2009), Ernst et al. (2013), Gangadharbatla (2008), Pelling, Wilson, Fornasier, and White (2010), are focused on single motivation construct but omit the multi-dimensional nature of motivation in the use of SNS.

Studies that examined risks in the use of SNS include those by De Cock and Donoso (2011), Dumlao and Ha (2013), Lo (2010), Dwyer, Hiltz and Passerini (2007) and Vandoninck, d'Haenens, (2007). These studies focused on risk as single dimension construct, perceived risk. However, they have neglected to distinguish between different risks such as psychological, social, financial, performance and time-related risks described earlier relevant to SNS use.

Thus while past studies have confirmed the relevance of motivations and risks to the study of SNS usage, they have largely been focused on perceived risk as single dimension construct and motivation as a single dimension construct. Past studies do not sufficiently consider the multi-dimensional nature of risk and motivation. Furthermore, none of these studies have considered the combined and relative effects of motivation and risk on SNS usage as well as their inter-relationship. As a result, we do not yet understand the combined and relative effects of risks and motivations on SNS usage behaviours.

This study aims to address this gap through the development and testing of its research model. The theoretical underpinnings and development of the research model are presented next.

2.4 Theoretical Background

The above sections have provided the context for the study of SNS usage. The purpose of this study is to understand some important issues related to users' intentions toward social network sites that have not been addressed by previous studies. The following sections present the underpinning theories and concepts that will be used to develop the research model.

2.4.1 Risk and Motivation

The tension between risk and motivation has been studied in disciplines such as health psychology (Blanton and Gerrard, 1997) and marketing (Webster Jr and Wind, 1972). Risk is defined as the possibility that something bad or unpleasant (such as an injury or a loss) will happen (Pavlou, 2001) and motivation is defined as the process that initiates, guides, and maintains goal-oriented behaviours (Davis, 1993). By definition, risk and motivation pull in two different directions; motivation is the reason why people do certain things or take certain decision while risk is the reason why people do not do certain things or take certain decisions.

Users of online sites such as social network sites (SNS) are often faced with the difficulty of making a choice amid the tension between risk and motivation. Users have shown reluctance to sign up or use SNS primarily due to risk concerns and thus risk is posited as prominent barrier to users' acceptance of online sites (Chen, 2013). Contrary, these online sites fulfil users' needs such as the need to belong, enjoyment, self-actualization and self-esteem (Hardin, 2010). Users in their decision making process have to grapple with balancing risks and motivations.

2.4.2 Risk and Motivation in the Use of SNS

Hardin (2010), Sledgianowski and Kulviwat (2009), Wakefield and Whitten (2006) argued that motivation is important to SNS use. Motivational needs can influence the cognitive processes that produce behavioural variability (Kanfer, 1991), which may explain variance in SNS usage.

Risk, on the other hand, is considered an impediment to adopting SNS (Chen, 2013; Featherman and Pavlou, 2003; Lee, 2009). Risk is important to SNS use because users disclose a lot of information consequently subjecting them to risk. The relationship between enjoyment and other benefits of using SNS can be affected by risk (Chen, 2013).

Consequently, motivation and risk are both likely to influence use of SNS. However, existing studies have not combined these variables into a single research model in an effort to understand their combined and relative effects. Studying both the opportunity factors e.g. motivations and barrier factors e.g. risk is thus important to improving understanding of how and why users engage in SNS (Cocosila, 2007).

2.4.2.1 Motivation

Fundamental motivation generally guides cognition and emotion (Baumeister and Leary, 1995), and motivational needs, in particular, influence the cognitive process that produces behavioural variability (Kanfer, 1991), so it is important to understand the role of motivation in understanding and predicting human behaviour. It is not surprising therefore that motivation has also been identified as an important factor in understanding technology usage.
Motivational needs are discussed in the well-known Maslow's (1954) hierarchical needs theory. Soliman and Lapointe (2009: p.4) discussed the hierarchies as follows:

> "*The most basic needs are physiological, including the need for food and sleep. The next level, which we may call level two, is safety needs that include, for example, security and stability needs. In level three we find belonging and love needs, which include the need to be a part of a clan, or a herd: the need to join and belong..... In level four we find the need for self-esteem. Maslow divides this level into self-respect needs, like the need for achievement, and "prestige" needs, like the need for appreciation. Finally, Maslow believes that the highest level of needs is self-actualization needs, which refers to people's aspirations to attain self-fulfilment and realize their potential".*

Maslow's theory has been used in areas such as marketing and information technology to study consumer behaviour and computer user behaviours (Seeley, 1992; Yalch and Brunel, 1996).

In studies of factors affecting the intention to use technology (Mäntymäki and Salo, 2011; Oum and Han, 2011), motivation has been found to influence intention to use technology. For example, motivation was examined in the use of mobile financial service (Chemingui and Ben lallouna, 2013), teachers' use of e-learning technology (Sørebø, Halvari, Gulli, and Kristiansen, 2009) and its impact on the use of online technologies such as SNS (Lederer, Maupin, Sena, Zhuang, 2000; Mäntymäki and Salo, 2011; Oum and Han, 2011). In all the above mentioned studies, motivation was found to have a positive and significant influence on technology adoption and use.

Motivation can also be understood as intrinsic which is doing something because it is interesting or enjoyable and extrinsic which is doing something because it leads to separable outcome (Deci and Ryan, 1985). Some studies have distinguished between intrinsic and extrinsic motivation, and their influence on technology acceptance and use (Oppenauer, 2009; Venkatesh, 2000). They have found that individuals adopt technology because its use is enjoyable (intrinsic motivation) and because they derive some benefits from its use (extrinsic motivation).

In the study of personality and motivations associated with Facebook use, Ross et al. (2009) found motivation to be an important factor that influences use. Van der Heijden (2004) found that motivation has positive influence in the usage of pleasure-oriented information systems as opposed to productivity oriented information systems. Childers et al. (2001) found that while the instrumental aspects of new media are important, the hedonic aspects are important too. Brandtzæg and Heim (2009) studied the reasons for using SNS and found that people often report many motivational reasons for using SNSs. The most important reason is to get in contact with new people (31%). The second most valued was to keep in touch with their friends (21%), whereas the third was general socializing (14%). Suki and Ramayah (2012) investigated the factors that influence behavioural intention to use Facebook and found that motivation was one of the factors that influenced intention to use Facebook.

Users have found enjoyment to be an important motivator in using a hedonic system like SNS (Conci et al., 2009; Ernest et al., 2013; Hu et al., 2011; Sledgianowski and Kulviwat, 2008) and enjoyment is thus an important intrinsic motivation to consider alongside other motivational needs in the study of SNS. Studies on motivations in SNS and other technologies use are summarized in Appendix B.

Past work does not always sufficiently consider the multi-dimensional nature of motivation. It is therefore necessary to examine the influence of different dimensions of motivation on SNS use.

Based on the above review of literature, motivation is interpreted in terms of five facets of motivation. Four include Maslow's motivational needs of safety, belonging, self-esteem and self-actualization, while the fifth is enjoyment (Hu et al. 2011; Sheldon et al. 2001;

Venkatesh et al. 2002). Physiological needs will be excluded because no virtual technologies e.g. SNS can address or meet physiological needs (Thielke et al., 2011).

Table 1 Presents dimensions of motivation which were adopted from Chen (2013), Diener, (2011), Gangadharbatla (2008), Kenrick, Griskevicius, Neuberg, and Schaller (2010), Mittelman (1991).

Table 1 Multiple Dimensions of motivation and definition

Dimensions of Motivation	Definition
Safety	The safety needs include control and order in life. People are motivated by these needs to find a job, maintain good health and have financial security (Teras, 2011)
Belonging	The need to belong includes things such as love, acceptance and belonging. It is important for people to feel loved and accepted by other people (Chen, 2013)
Self-esteem	The self-esteem motivation involves the typical human desire to be accepted and valued by others, competence, mastery, self-confidence, independence, and freedom (Gangadharbatla, 2008)
Self-actualization	The self-actualization needs are centred on the need people have to achieve their full potential as human beings (Gangadharbatla, 2008)
Enjoyment	The state of enjoyment includes the state or process of taking pleasure in something (Chen, 2013)

2.4.2.2 Risk

Risk has been identified to be important in SNS usage (Lee, 2009). Schneider (1998) defined risk as a function of the probability that a hazard arises and the consequences of the hazard.

SNS users cannot totally avoid disclosure of private information when using SNS (Cocosila et al., 2009). Despite warnings, people are still not changing the way they disclose their information (Marett et al., 2011; Rosenblum, 2007). SNS have been designed in a way that usage fulfils needs but in so doing users have to trade their privacy. While the underlying personal motivation may favour adoption, perceived risks may be an obstacle (Cocosila, et al., 2009). Risk is one the few factors that do not favour usage (Featherman and Pavlou, 2003; Lapointe and Rivard, 2005).

Risk as a determinant in adoption and usage of technology has been studied by different researchers. Appendix C is a list of different studies that have examined risk in the use of online technologies.

Findings from Appendix C suggest that risk perceptions have an effect on user intention and use of technology. However, it is also evident that the multi-dimensional nature of risk has not been sufficiently examined in these past studies of SNS use.

There are at least seven dimensions of risk (Ben-Ur and Winfield, 2000; Cunningham, 1967; Featherman and Pavlou, 2003; Forsythe and Shi, 2003; Luo et al., 2010) that may be relevant

in the SNS context. Drawing on, Luo et al., (2010) and Fatherman and Pavlou (2003), definitions of these dimensions of risk are presented in Table 2:

Table 2 Multiple dimensions of risk and definitions

Risk Dimensions	Definition
Performance risk	The possibility of the product malfunctioning and not performing as it was designed and advertised and therefore failing to deliver the desired benefits (Featherman and Pavlou, 2003).
Financial risk	The potential monetary outlay associated with the initial purchase price as well as the subsequent maintenance cost of the product. The current financial services research context expands this facet to include the recurring potential for financial loss due to fraud (Featherman and Pavlou, 2003).
Time risk	Consumers may lose time when making a bad purchasing decision by wasting time researching and making the purchase, learning how to use a product or service only to have to replace it if it does not perform to expectations. (Featherman, and Pavlou, 2003).
Psychological risk	The risk that the service will lower the consumer's self-image, cause anxiety, tension or feelings of discomfort and addiction to the service which subsequently leads to loss (Jacoby and Kaplan, 1972).
Social risk	The risk that using a product or service may lead to embarrassment before one's social group (Jacoby and Kaplan, 1972).
Privacy risk	Potential loss of control over personal information, such as when information about you is used without your knowledge or permission. (Featherman and Pavlou, 2003).
Physical risk	The risk to the buyer's or other's safety in using products (Jacoby and Kaplan, 1972).

In examining the impact of risk and motivation in SNS use, this study draws on Technology Acceptance Model (TAM) and its original underpinning in the Theory of Reasoned Action TRA) is drawn upon. This is discussed next.

2.4.3 Technology Acceptance Model

Researchers studying user acceptance and usage behaviour of technology have used several theoretical models to study these technologies. Technology Acceptance Model (Davis, 1986; Davis, Bagozzi, and Warshaw, 1989) is one the most widespread models used to predict usage of technology. The original TAM paper has been cited over twenty thousand times. TAM is grounded in the theory of reasoned action (TRA) (Ajzen and Fishbein 1980, Fishbein and Ajzen 1975).

The Theory of Reasoned Action (TRA) originates from the field of social psychology. The model was developed by Fishbein and Ajzen (1975). TRA explains the link between beliefs, attitudes, norms, intentions and behaviours of individuals. The model posits that a person's behaviour is driven by behavioural intentions, and behavioural intentions are influenced by behavioural beliefs.

According to TAM, perceived ease of use and perceived usefulness are the two most relevant behavioural beliefs influencing individuals' behavioural intentions to use a technology (Taylor and Todd, 1995; Venkatesh, 2000). TAM is reflected in Figure 6.

Davis (1989: p. 320) defined perceived usefulness, as "the degree to which a person believes that using a particular system would enhance his or her job performance" and perceived ease of use as "the degree to which a person believes that using a particular system would be free of effort". Behavioural intention was defined by Fishbein and Ajzen (1975: p. 216) as "the strength of one's intention to perform a specified behaviour".

The TAM model (Figure 6) is parsimonious, easy to understand, and provides reasonable explanatory value under a variety of conditions. TAM has been found to explain 40% variance in behavioural intention to use technology (Burton-Jones and Hubona, 2006; Ventakash and Davis, 2000). In addition TAM has gone through a lot of testing, validations and replications (Davis, 1993; Igbaria, 1993; Ventakash and Davis, 2000; Ventakash and Morris, 2000). TAM has been used inter-alia to explain adoption and usage of online retail shopping (Childers et al, 2001), Web 2.0 technologies adoption (Lowe, D'Alessandro, Winzar, Laffey and Collier, 2013), and social networking sites adoption (Ernst et al., 2013).

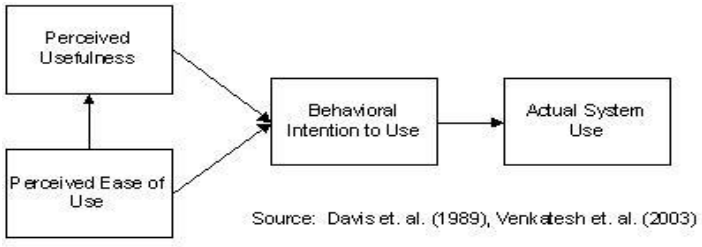

Figure 6 : Basic TAM Model

This study extends the basic TAM[5] model illustrated above by adding the motivation and risk constructs.

The inclusion of motivation is important because TAM does not consider motivational influence (needs fulfilment) and this may help to improve the predictive and explanatory power of the model (Hu, Chau, Sheng, and Tam, 1999).

TAM will also be extended by adding risk perceptions. The inclusion of risks is important because of the situations youth find themselves in as a result of using SNS. Young SNS users are faced with different risks such as finance, social, psychological, privacy, performance, time, and physical risk (Chen, 2013; Grieve et al., 2013; Kuss et al., 2013; Litt, 2013; Trepte and Reinecke, 2013).

Motivation and risk may influence usage directly as well as by influencing perceptions of usefulness and ease of use. The study's research model is developed next.

[5] A modified version of TAM was proposed by Davis et al. (1989), and this is commonly referred to as the parsimonious TAM (pTAM). Drawing on TRA, original TAM included attitude as an intervening variable in the link between beliefs and behaviours. As illustrated in Figure 6, parsimonious TAM links PU and PEOU directly to intention without modelling attitude as an intervening variable.

2. 5 Research Model and Hypotheses

Drawing on the above theoretical background, the study's research model is developed and is illustrated in Figure 7. As per TAM, technology acceptance is examined through the dependent variables of intention and actual usage of a technology. The measures of actual usage include the amount of time spent on SNS and the frequency of using SNS. Actual usage is dependent on behavioural intention (BI). In general, behavioural intention is defined as "the strength of one's intention to perform a specified behaviour" Fishbein and Ajzen (1975: p. 216). In this context, it is defined as the user's intention to use features of an SNS in the near future.

BI is in turn predicted by motivation, risk, perceived usefulness and perceived ease of use. Perceived usefulness and perceived ease of use from TAM are also modelled as having risk and motivation as their determinants. Both risk and motivation are modelled as formative constructs (Kellerman, 2013; Lou, Li, Zhang and Shim, 2010); this is because their underlying dimensions are not required to covary.

The model's underlying hypotheses are developed next.

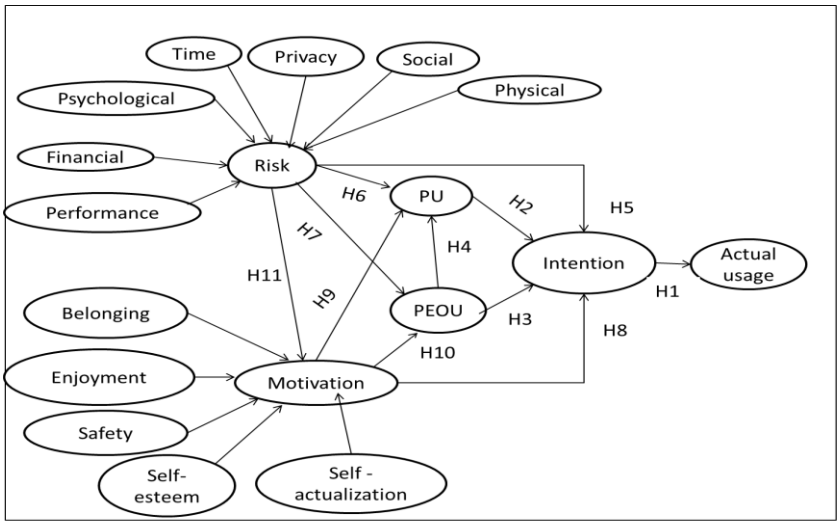

Figure 7 : Research Model: An extended TAM Model with Risk and Motivation

2.5.1 Behavioural Intention to Use and Actual Usage

The TRA extensively describes the positive relationship between behavioural intentions and actions (Ajzen and Fishbein, 1980; Featherman and Pavlou, 2003; Lin, 2006). Technology adoption research that has drawn on TAM and TRA has consistently showed a high correlation between user intentions and actual usage behaviours (Ajzen, 1985; 1991; Johnston et al., 2013). TRA's theoretical rationale, suggests that a person's behaviour is determined by his/her intention to perform the behaviour and that this intention is, in turn, a function of his/her attitude toward the behaviour and his/her subjective norm. Drawing upon TRA's theoretical rationale and abundant empirical evidence, this paper proposes that there is positive relationship between behavioural intentions and actual use behaviour in use of SNS.

H1: User intentions to use SNS positively influence actual usage of SNS

2.5.2 Perceived usefulness and perceived ease of use) and Intention to use

The technology acceptance model (Davis, 1989) argues that two external variables (i.e., perceived usefulness and perceived ease of use) influence the acceptance of technology. Perceived usefulness and perceived ease of use are salient beliefs found in TAM (Pavlou, 2003).

Davis (1989) stated that user's intention to use technology is based on his or her perception of the perceived usefulness of the technology, which is defined as "the degree to which a person believes that using a particular system would enhance his or her job performance". Since Davis' original definition, perceptions of usefulness have been re-interpreted for different technology contexts. While job performance remains relevant to utilitarian IS systems introduced into workplace contexts, usefulness can be defined in SNS context as the extent to which the SNS user believes that using a particular SNS helps to connect with others and share information (Rauniar, Rawski, Yang and Johnson, 2014) and more specifically in the SNS context, perceived usefulness is the extent to which the user believes that using a particular SNS helps to meet the related goal-driven needs of the individual (Rauniar et al., 2014).

In an online environment like SNS, users have to be certain that they will gain the expected usefulness of the SNS (Choo, Chung and Pysarchik, 2004). For the user to gain utility from the technology, the technology has to behave in accordance with the user's confident belief (Featherman and Wells, 2004). In the SNS context users aim to communicate and share information such as photos (Rauniar, et al. (2014). If the SNS can present advantageous results, then the SNS will be perceived useful (Hsu, Yu and Wu, 2013), 2004). The extent to which these functions of technology are perceived beneficial determines perceived usefulness (Gutman, 1982*).*

Agarwal and Prasad (1999), Davis (1989), Karnouskos, Hondroudaki, Vilmos and Csik (2004), Zmijewska, Lawrence and Steele (2004) also identified that user's intention to use a technology is influenced by perceived ease of use of the technology. Perceived ease of use was described by Davis (1989) as the degree to which a person believes that using a particular system would be free of effort. Each individual will adopt a course of action that will involve the least average work from the person (Zipf, 1949). The SNS user will appreciate minimum effort when required to learn features, make use of the SNS and perform SNS related activities such as uploading and sharing of videos (Rauniar et al., 2014). If the user finds the SNS not to be difficult to understand, learn and operate the SNS will be perceived to be easy to use (Rogers, 1961; Thammakoranonta et al., 2011).

Based on TRA's premise that beliefs influence behavioural intentions, usage intentions are determined by beliefs about whether the technology can improve performance and will be free of effort (Mathieson, 1991; Taylor and Todd, 1995; Venkatesh, 2000).

Wide variety of research has validated that perceived usefulness and perceived ease of use influence intention to use a technology (e.g. Davis, 1993; Hsu et al. 2013; Yoon, 2014). Taken together, it can by hypothesised that:

H2: Perceived usefulness of SNS positively influences user intentions to use SNS

H3: Perceived ease of use of SNS positively influences user intentions to use SNS

The relationship between perceived usefulness and perceived ease of use has been studied by different researchers. Davis (1992) suggested that perceived ease of use operates through perceived usefulness, and the same conclusion was reached by other studies (e.g. Adams et al., 1992; Gefen, 2000; Keil et al., 1995; Venkatesh and Davis, 1996). A user must first engage with a technology and find it easy to use before they can experience the benefits of use i.e. find it useful (Gefen and Straub, 2000; Venkatesh and Davis, 1996).

In the context of SNS, a user will prefer to use an SNS to communicate and perform other social networking activities when they find the SNS easy to use (Gefen, 2000). On the other hand, if potential users believe that the SNS is too difficult to learn and to use then the performance benefits of usage are outweighed. Thus it is hypothesized that:

H4: Perceived ease of use of SNS positively influences perceived usefulness to use SNS

2.5.3 Risk

Risk has been described as an inevitable element of SNS usage (Al-Gahtani, 2011). As discussed earlier, finance, privacy, performance, physical, time, social and psychological risks are all relevant in this SNS context. Disclosure of personal information, risk of embarrassment, negative criticism, wasted time, present users with these risks (Featherman and Pavlou, 2003; Pavlou, 2003).

Bauer (1960) discussed risk as a form of belief. Risk is difficult to capture as an objective reality, the literature predominantly has addressed the notion of perceived risk, which will be defined as the user's subjective belief of suffering a loss in pursuit of a desired outcome (Yousafzai, 2003). This subjective belief is consistent with TRA and TBP that beliefs influence intention (Fishbein and Ajzen, 1975). Choo et al. (2004) pointed that perceived risk is an important determinant of consumers' behaviour. Currás-Pérez et al. (2013) found that multi-dimensional risk negatively impacted attitude to use SNS. Therefore the greater the perceived risk a user associates with an SNS, i.e. the greater the probability of suffering a loss of privacy, loss of finance, time loss, loss of respect by those the user holds in high esteem, loss of benefits expected from using the SNS, then it is less likely that a user will want to engage with an SNS.

H5: Perceived risk as a formative construct comprising physical, psychological, social privacy, time, finance and performance risk negatively influences user intentions to use SNS.

Featherman and Wells (2004) building on Pavlou (2003) hypothesized that risk can influence other behavioural beliefs in technology acceptance, specifically perceived usefulness and perceived ease of use. Other researchers have arrived at the same conclusion (e.g. Lee, 2009; Littier and Melanthiou, 2009; Lu et al. 2005 and Sathye, 1999).

For SNS to be perceived useful, it should have low performance risk (Featherman and Pavlou, 2003) i.e. a user should perceive a low probability of loss. If the SNS is not performing as it is supposed to, such as sending messages to unintended recipients and not delivering messages and the user is unable to therefore share information, the less likely a user will perceive the SNS as useful.

Physical risk perceptions can have a negative influence on perceived usefulness of the technology (Lu et al., 2005; Pavlou, 2003). Physical risk includes the risk to the user or others' safety in using the SNS. Using SNS for extended period of time may expose the user to physical risk. The greater the user perceives the probability of suffering personal physical risks such as eye strain, or even physical risks to computing equipment due to computer malware or virus infection, the less likely the user will perceive SNS as useful.

Social risk is defined as using a product or service which may lead to embarrassment before one's social group (Luo et al., 2010). SNS can present social risk if users are posting or sharing information which may embarrass them. A user may perceive a high probability of suffering loss due to risks such as embarrassment e.g. youth may post content that may later subject them to embarrassment if received negatively by the social network. Embarrassment might include posts such as photos of them drinking or in sexually suggestive poses. The greater the probability of such social risk i.e. the less likely a user will perceive the SNS as useful.

Financial risk is defined as the risk of financial loss associated with the use of the service (Pavlou, 2003). SNS can present financial risk if users are required to spend money to access SNS. If for a user to engage with SNS they are required to make significant outlays which may result in financial loss, i.e. spending considerable amount of money buying data bundles, then the user is less likely to perceive the SNS as useful.

Time risk includes the possibility that users may lose time when using or learning how to use the service. It has been reported that youth engage on SNS multiple times a day (Kuss et al., 2013) and may spend up to 7 hours a day on SNS (Camilia, Dahiru and Dalhatu, 2013) and they may ignore other activities. The potential to waste time using SNS may present a risk. If the user perceive a high probability of suffering a loss, i.e. wasting time participating in SNS and wasting time on tasks such as reading and writing posts, the less likely the user will perceive the SNS useful.

Privacy risk is defined as loss of control over personal information such as when information about a person is used without their knowledge or permission (Featherman and Pavlou,

2003). SNS may present privacy risk because users display their information and others may be able to access this personal information i.e. if profiles are public, or user does not know how to protect their information, their personal information will be displayed to the public. SNS is less likely to be perceived as useful if there is a strong probability of suffering loss i.e. loss of control of personal information and personal information used without users' knowledge.

Psychological risk is defined as the risk that SNS usage may lower the user's self-image (Jacoby and Kaplan, 1972), cause embarrassment, cause discomfort, cause tension. SNS may present psychological risk because the response of the social network to the user or to content such as photos and information posted by the user could be negative and result in a loss to self-image or create feelings of anxiety, tension or discomfort. The use of SNS has also been described as addictive, a conditions for subsequent psychological risk.

In summary, perceived risks are likely to have a negative influence on the perceived usefulness of an SNS (Dowling and Staelin, 1994; Van der Heijden et al., 2003). The higher the risk involved in using the SNS, the lower the perceived usefulness of the SNS. Users with the belief that the SNS is risky will opt for technologies or systems which are less risky thus finding the SNS not useful. Therefore the greater the perceived risk that a user associates with an SNS i.e. risk that the SNS does not perform as expected, waste more time, results in loss of respect by those the user hold in high esteem or causes anxiety, or discomfort, the less likely a user will perceive the SNS useful.

H6: Perceived risk as a formative construct comprising psychological, social privacy, time, finance, physical and performance risk negatively influences perceived usefulness of the SNS

Given the risks associated with SNS use, users may have to employ coping mechanisms. Coping mechanisms are a way of mitigating the risks involved in SNS use. Some of the mechanisms may include taking time to understand how the SNS functions, learning how to use it and checking security features. In other words, a perception of risk may result in increased vigilance by users around their usage behaviours. This comes at a cost. The cost is that the SNS become less easy to use and greater amount of effort is required to use the SNS. Thus risks may reduce perceptions of ease of use.

First, time risk may influence perceived ease of use (Liu and Wei, 2003). The risk of spending too much time in participating in SNS and wasting time on SNS activities may cause user's to be more vigilant as to how much time is spent on SNS. This can disrupt the usage experience and make the SNS appear less easy to use.

Privacy risk may also influence perceived ease of use (Lu et al., 2005). The potential to lose control over the privacy of personal information and the potential of hackers taking control of user's personal information may increase the required vigilance needed to use an SNS. If user's perceive that protecting themselves online and on an SNS platform is complex and that there efforts to protect their privacy may be easily thwarted or undermined then they will

associate SNS use with more effort. This is likely to lower perceptions that the SNS is easy to use.

Performance and physical risk are also likely to influence perceived ease of use (Pavlou, 2003; Featherman and Pavlou, 2003). If performance risk is considered high, then users are likely to be more vigilant, constantly checking whether the actions they have completed on the SNS have been performed as intended. For example, checking message delivery status to ensure the SNS has sent a message as intended and it has arrived at the intended recipient. Vigilance is required to avoid the physical risks associated with SNS use such as the potential of eye-strain, the potential of clicking an inappropriate link and therefore download virus which may harm the computer or phone. The greater the required level of vigilance to cope with such risks associated with SNS use, the less likely the user will perceive the SNS to be easy to use.

Perceptions of finance risk and social risk are also likely to influence perceived ease of use (Pavlou, 2003). Users have to be vigilant as to avoid the potential of financial loss i.e. spending considerable amounts of money buying data to remain connected. Users have to be vigilant to ensure posts are not negatively received and that they will not result in embarrassment from those who hold users in high esteem. The cost of such added vigilance as a coping mechanism is that the SNS become less easy to use as greater amount of effort will need to be expended in using the SNS.

Psychological risk is likely to influence perceived ease of use (Feaherman and Pavlou, 2003). The potential that the SNS can lower the user's self-image, make them feel uncomfortable, feel anxious and experience tension may increase the required vigilance needed to use an SNS. If user's perceive that protecting themselves online and on an SNS platform is complex and that there efforts to protect their self-image may be easily thwarted or undermined then they will associate SNS use with more effort. This is likely to lower perceptions that the SNS is easy to use.

When a user perceives risks associated with the use of a technology, there is a perceived need by the user to better understand, monitor and control the usage situation (Featherman and Pavlou, 2003; Pavlou, 2003). This lowers the technology's perceived ease of use (Featherman and Wells, 2004). Thus the more risk associated with an SNS, the more effort will be expended in monitoring and controlling their interactions with the technology. Thus user will not consider using the SNS to be effortless (Pavlou, 2003). In the SNS context, risk will push users to check details, give special attention to all aspects and monitor actions increasing the time and effort required to use SNS (Littier and Melanthiou, 2009).

Featherman, Miyazaki and Esprott (2010) concluded that reducing risks reduces the amount of effort and work that goes into using the system. Thus less risky is the system the more the system is perceived to be easy to use (Lo, 2010). Previous studies have shown how the seven dimensions of risk considered in this study can influence perceived ease of use (Featherman and Pavlou, 2003; Featherman et al., 2010; Pavlou, 2003). It is therefore hypothesized that:

H7: Perceived risk as a formative construct comprising psychological, social privacy, time, finance, physical and performance risk negatively influences perceived ease of use of SNS.

2.5.4 Motivation

Needs and desires of an individual can drive their motivation (Ambrose and Kulik, 1999). The role of motivation in adoption and use of technology has been studied by different researchers (Malhotra, et al. 2008; Soliman and Lapointe 2009; Venkatesh, 1999; Venkatesh et al. 2002).

For an individual to perceive SNS to be useful, the individual should have been motivated to use it. Literature on motivation has suggested that motivation will influence behavioural intention to use a technology (Chatzisarantis, Hagger, Smith and Sage, 2006; Yoon, 2014; Lai, 2011). For an individual who is motivated to fulfil their needs to belong, enjoyment, self-esteem, self-actualization and safety by using SNS, they are more likely to have intentions to use SNS. Thus, consistent with the expectation that intentions and behaviours are prompted by motivations (Chang and Chin, 2011). The study can posit that:

H08: Motivation as a formative construct comprising fulfilment of self-actualization, self-esteem, safety, belonging and enjoyment needs positively influences behavioural intention to use SNS

Motivations might also influence usage through perceived usefulness and perceived ease of use.

Self-actualization and self-esteem have been considered antecedent to perceived usefulness (Phang, Sutanto, Kankanhalli, Yan, Tan and Teo, 2006). An individual using SNS to fulfil their self-esteem and self-actualization needs may be more perceptible to the usefulness of the SNS. For example, a user who has their needs i.e. feelings of worthwhile accomplishment, opportunity for personal growth, prestige in the community and recognition, met thorough the SNS may be more likely to perceive the SNS as useful. Thus, they may be more willing to use multiple features and spend time in use (expanded utility) because of the role it is plays in meeting their needs.

People are not only using SNS for communication or sharing information, there is an aspect of enjoyment to using SNS (Agarwal and Karahanna, 2000). Van der Heijden (2004) suggests that enjoyment is an antecedent of perceived usefulness. An SNS that is enjoyable will have a higher instrumental value (Chen, 2013; Agarwal and Karahanna, 2000). A user who has their need for enjoyment met through the SNS is more likely to perceive the SNS as useful. The greater the enjoyable experience associated with the SNS i.e. the greater the potential for excitement and pleasure, the more likely a user will engage with the SNS. Thus a more enjoyable SNS experience will increase the perceived usefulness of the SNS.

Safety is a motivation which may influence perceived usefulness (Elliot, McGregor and Thrash, 2002; Gangadharbatla, 2000). An individual who is motivated to fulfil their needs i.e.

employment, feeling of safety in life and feeling settled in life by using SNS are more likely to perceive it as useful.

Social networking sites offer a space in which people can address their needs. Needs are met by using services provided by SNS. Individuals' needs met by SNS include, communication with familiar and friends, conversations and information gathering, gaining social approval, expressing opinions, and influencing others (Gangadharbatla, 2008). Users will perceive SNS to be useful if it fulfils their needs. Thus SNS will be perceived useful by the user if there is a probability of the SNS fulfilling the user's needs.

This is consistent with the expectation that perceived usefulness of a technology is influenced by motivations (Ventekash, 2000). Thus the study can posit that:

H9: Motivation as a formative construct comprising fulfilment of self-actualization, self-esteem, safety, belonging and enjoyment needs positively influences perceived usefulness of SNS

Motivation is also considered an antecedent of ease of use (Ventekash, 2000; Conci et al., 2009; Rauniar et al., 2014).

Self-actualization and self-esteem have been considered antecedents of perceived ease of use (Gangadharbatla, 2000; Consi et al., 2009). Effort needed to use an SNS may be less perceptible to an individual who experiences their needs as being adequately fulfilled through SNS use. For example, a user who has their self-esteem and self-actualization met through the SNS may be more forgiving of difficulties that may have been associated with its use. They may be willing to learn to use multiple SNS features or spend more time and effort in getting the SNS to work for them because of the role it is playing in meeting their needs.

People's attitudes and behaviour with regard to SNS may stem from their need to belong (Gangadharbatla, 2008). For example, a user who has their need to let out emotions, express problems to others, share information with family and friends fulfilled by the SNS, may be forgiving to difficulties that may have been associated with its use. Thus, may be willing to learn to use more SNS features i.e. sending inbox, direct messaging and writing on walls, because of the role it is playing in fulfilling their needs.

SNS that fulfils a need for enjoyment is less likely to be perceived as difficult to use (Agarwal and Karahanna, 2000; Van der Heijden, 2004). Effort needed to expand using SNS may be perceptible to an individual who experiences enjoyment i.e. finds SNS to be exciting, pleasant and compelling, when using it. Thus, the more enjoyable the SNS experience, the lower the perceived effort required.

If using SNS fulfils a need for safety, a user is likely to find it easy to use (Rauniar et al., 2014); Consi et al., 2009; Gangadharbatla, 2000; Elliot et al., 2002). For example, users who have their needs for security i.e. need for employment and need to feel settled in life, adequately fulfilled through the SNS may be more forgiving of any difficulties that may have been associated with its use. Thus a user may be willing to learn to use different features of the SNS and overcome difficulties in use if it can provide them with features that help them achieve feelings of comfort and security in their lives.

In summary, motivation influences perceived ease of use of technology (Consi et al., 2009; Venketash, 2000) and it is expected that:

H10: Motivation as a formative construct comprising fulfilment of self-actualization, self-esteem, safety, beloning and enjoyment needs positively influences perceived ease of use of SNS.

Users of online sites such as social network sites (SNS) are often faced with the difficulty of making a choice amid the tension between risk and motivation. Users have shown reluctance to sign up or use SNS primarily due to risk concerns and thus risk is posited as prominent barrier to users' acceptance of online sites (Chen, 2013). Contrary, these online sites fulfil users' needs such as the need to belong, enjoyment, self-actualization and self-esteem (Hardin, 2010). Because risks are a reason for, why people may not do certain things, it is likely to reduce the motivation i.e. enjoyable experience, the excitement and the need to belong.

H11: Perceived risk will have a negative influence on motivation.

2.6 Controls

In examining effects of motivation and risk, it is important to control for gender. Past studies on technology adoption have found gender differences in perceptions and relationships among dominants affecting technology acceptance (Durndell and Thomson, 1997; Venkatesh and Morris, 2000). In a study by Ong and Lai (2004), it was found that women were more strongly influenced by perceptions of ease of use and men's usage decisions were more significantly influenced by their perception of usefulness of the technology. It is important to find out if gender has an impact on adoption and use of SNS and gender's relation to motivation and risk in the use of SNS.

Age has also been found to have an effect in adoption and use of SNS (Pfeil, Arjan and Zaphiris, 2009). Although the focus is specifically on youth i.e. university student, it is important to distinguish between students who may be slightly older having grown up before the popularizing of social network. These students may be classified as digital immigrants (Jones and Shao 2011). They were born after the spread of digital technology and were less exposed to it at an early age (Palfrey and Gasser, 2013).

2.7 Conclusion

This chapter presented the literature and theoretical background to the study. It provided an overview of social network sites, discussed risks and motivations in social networking, and summarized past SNS studies. This chapter then presented the theoretical underpinnings of the study, grounded in literature on risk, motivation and technology adoption. The chapter

presented the development of the research model and hypotheses. Hypotheses are summarized as follows:

H1: *User intentions to use SNS positively influence actual usage of SNS*

H2: *Perceived usefulness of SNS positively influences user intentions to use SNS*

H3: *Perceived ease of use of SNS positively influences user intentions to use SNS*

H4: *Perceived ease of use of SNS positively influences perceived usefulness to use SNS*

H5: Perceived risk to use SNS negatively influences user intentions to use SNS.

H6: *Perceived risk to use SNS negatively influences perceived usefulness of the SNS*

H7: *Perceived risk to use SNS negatively influences perceived ease of use of SNS*

H8: Motivation to use SNS positively influences behavioural intention to use SNS

H9: *Motivation to use SNS positively influences perceived usefulness of SNS*

H10: *Motivation to use SNS positively influences perceived ease of use of SNS*

H11: Perceived risk will have a negative influence on motivation.

The next chapter discusses the research methodology that is used to collect and analyse the data needed to test the hypotheses.

CHAPTER 3 – RESEARCH METHODS

3.0 Introduction

This section presents the methodology for collecting and analysing the data necessary to test the research hypotheses. The research philosophy and design are discussed first, followed by discussion of data collection and analysis strategies.

3.1 Research Methodology

The Figure 8 below shows an overview of the research methodology employed in this study. This includes research philosophy, research approach and design, strategy, time horizon, data collection and analysis. Each will be expanded in the sections of the chapter.

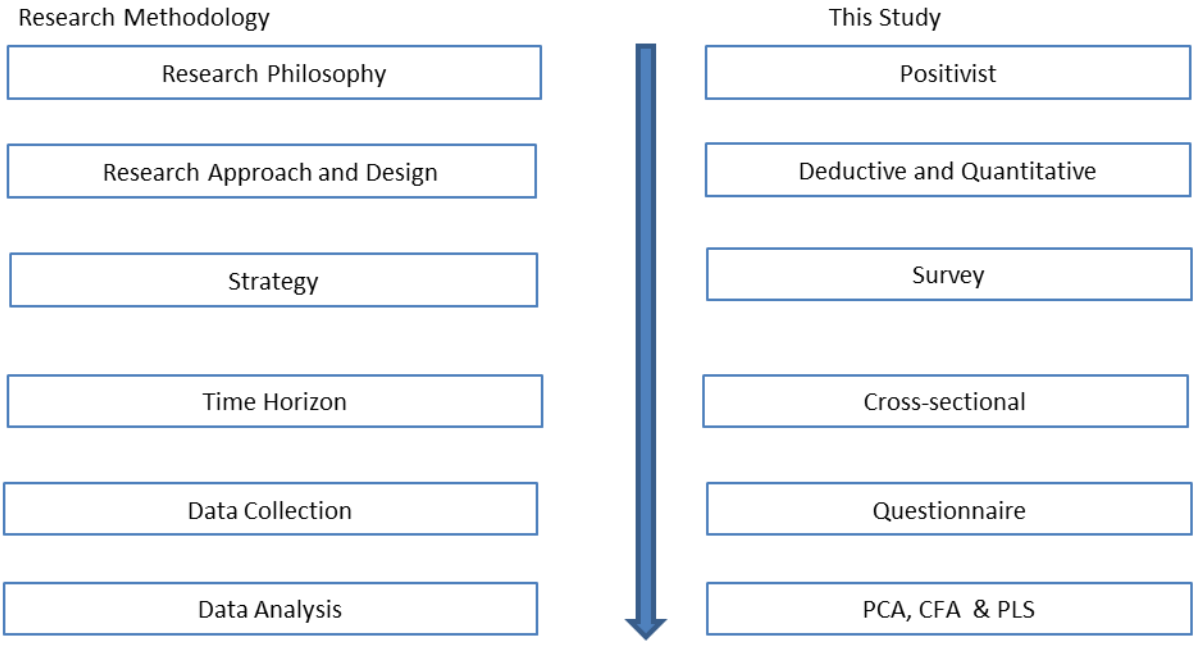

Figure 8 : Diagram showing overview of research methodology

3.2 Research Philosophy

Research Philosophy is the mental models or frames of references that are used to organise the reasoning and observations, and also shapes the design and conduct of research (Kuhn, 1962). Positivism and interpretivism are the two main research philosophies (Saunders, 2006). Interpretivism follows the idea that the best way to study social order is through the subjective interpretation of participants involved, such as interviewing different participants and reconciling differences among their responses using their own subjective perspectives (Bhattacherjee, 2012: p 18). Positivism on the other hand, adopts the philosophical stance of the natural scientist and prefer 'working with an observable social reality and that the end product of such research can be law-like generalisations similar to those produced by the physical and natural scientists' (Remenyi et al. 1998:32).

This study follows the positivist philosophy because the researcher intends to test a theory and also make reasonable inferences about a phenomenon by combining empirical

observations with logical reasoning (Bhattacherjee, 2012). An underlying assumption is that reality is stable and can be observed and described through an objective viewpoint (Levin, 1988).

3.3 Research Approach and Design

There are two approaches to research, deductive and inductive. The inductive approach is associated with building a theory, which is being concerned with the context of events, using more qualitative data and permitting alternative explanation for phenomena (Saunders and Lewis, 2007). The deductive approach involves deducing a hypothesis from theory, expressing the hypothesis operationally, testing the operational hypothesis, examining the specific outcome of the enquiry and modifying the theory if necessary (Bhattacherjee, 2012). The present study suits the latter, since the study is deducing hypotheses from theory of technology acceptance, risk and motivation and testing those hypotheses in order to determine the relative and combined effects of the theoretically derived concepts on observed SNS usage behaviours. A deductive approach is mainly used with the quantitative research (Jonker and Pennink, 2009).

Based on the Research Onion (Figure 9) – adapted from Saunders, Saunders and Lewis (2011:128) strategies like survey and experiment are commonly used for quantitative studies and ethnography and archival research for qualitative studies.

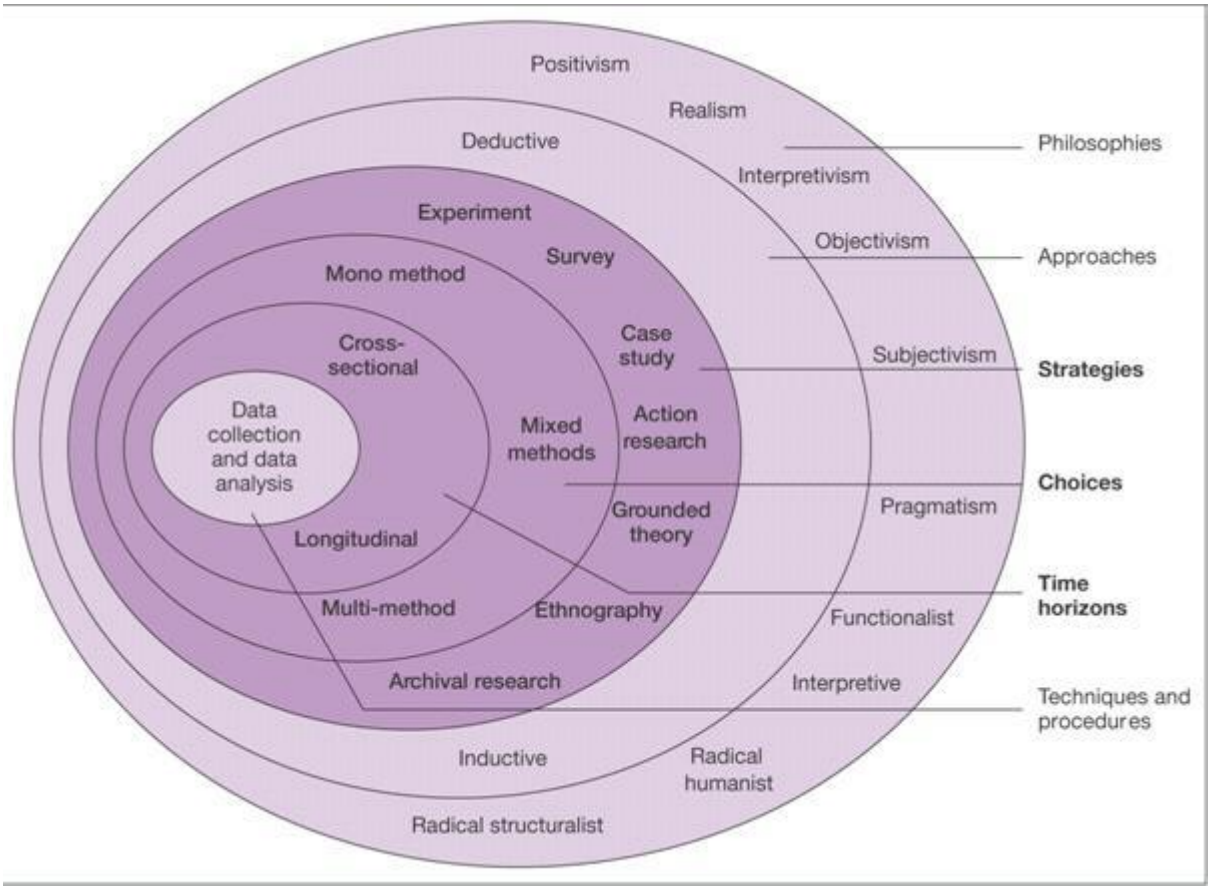

Figure 9 : Saunders Research Onion

Qualitative research by definition is exploratory and it best suits a researcher who does not know what to expect, to define the problem or develop an approach to the problem (Bhattacherjee, 2012). On the other hand quantitative research is for a researcher who is trying to quantify the problem and understand how prevalent it is by looking for projectable results to a larger population (Johnson and Christensen, 2008: p34).

In conjunction with the deductive approach, this study adopts a relational or weak causal research design. While other designs (e.g. experimental designs) might provide stronger evidence for causality, they are not possible in this study. Users studied are actual users of SNS technology and they have already been exposed to the technology of interest. They were examined in the natural field setting and therefore not able to control users' interactions and experiences with SNS in the manner required by experimental designs. Therefore this study suits a relational design.

3.4 Research Strategy

There are different types of research strategies. Strategies such as laboratory experiment or field survey are associated with the deductive approach while strategies such as ethnography and grounded theory are associated with the inductive approach (Saunders et al., 2011). The study used the survey strategy. Survey strategy is used in this study because of the advantages it offers in studying phenomenon in their natural context. Advantages include, gathering large amounts of data, numerous questions can be asked about a subject, giving extensive flexibility in data analysis, a broad range of data can be collected (e.g., attitudes, opinions, beliefs, values, behaviour, factual), use of standardized questions and it has low costs (Sincero, 2012; Bhattacherjee, 2012).

The survey method offers the researcher a highly economical way of collecting large amounts of data to address the "who, what, where, when and how" of a topic (Saunders, 2006).Using a survey will enable the research to collect information from a sample of individuals through their responses to questions (Sauder, 2006: Bhattacherjee, 2012). When data is to be collected from a broad spectrum of individuals, survey is an efficient method to use because of its systematic collection of data (Bhattacherjee, 2012). Survey has good generalizability, versatility and efficiency and as a result surveys are popular for research in business, scientific and other disciplines (Johnson and Christensen, 2008). The other advantage is the possibility of measuring many variables without substantially increasing the time or cost (Sauder et al., 2011; Bhattacherjee, 2012). When a researcher needs to collect data from many people under time and financial constraints, the survey offers a solution by enabling data to be collected from many respondents at relatively low cost and relatively quickly.

Survey research has systematic biases as one of its weakness. Some of the biases are non-response, sampling bias, social desirability bias, recall bias and common method bias (Johnson and Christensen, 2008). Some of the ways to try and limit these biases include respondent friendly questionnaire, offering incentives, and ensuring a high level of confidentiality and privacy to respondents (Bhattacherjee, 2012: p 80).

3.5 Time Horizon

There are two types of time horizon in research; cross-sectional and longitudinal (Bhattacherjee, 2012). Cross-sectional study is a snap shot taken at a particular time and longitudinal is a series of snap shots taken over a period of time (Robson, 2002). The choice of time horizon depends on the research question. Cross-sectional studies are typical in social sciences (Easterby-Smith, Thorpe, Jackson, and Lowe, 2008; Robson 2002). This study adopts a cross-sectional horizon because of time constraints.

3.6 Data Collection and Data Analysis

Data collection and data analysis are important elements in a research study. For research questions to be well answered, the researcher has to systematically collect data and properly analyse it (Johnson and Christensen, 2008). Systematic collection of data can be primary or secondary (Sincero, 2012). The researcher collected primary data which is collecting data directly from respondents as opposed to using data collected by others i.e. secondary data (Yin, 2010).

3.6.1 The Primary Data

The researcher collected data to be used in the study using questionnaire as a survey instrument. The instrument uses structured questions.

3.6.2 Unit of Analysis and Population

Individuals are the unit of analysis in the study and specifically it focuses on youth. The population of the study are students at the University of the Witwatersrand, Johannesburg students in the age group 18-25 years.

However due to the large size of the population, financial constraints and the limited time frame, it was impossible to gather data from each member of the population. The researcher sampled the population. Sampling is a statistical process used to get a good representative subset of a population of interest (Bhattacherjee, 2012: p 65).

There are different types of sampling techniques, namely probability and non-probability sampling. Probability sampling comprises simple random sampling and systematic sampling, while non-probability sampling comprises convenience sampling, quota sampling and expert or judgment-based sampling (Saunders, 2006). Each of these techniques can be used based on the population and other factors such time frame and finance (Brink 1996:133; Polit and Hungler 1999:227).

Focusing on a student population for the study of SNS use is appropriate because research has shown that the majority of SNS users are young individuals from the ages of 18 to 24 years (PEW, 2014). These individuals are most heavily utilizing Facebook, 75% of 18 to 24 years age group use Facebook (Raacke and Bonds-Raacke, 2012; Corbett, 2010). This age group spends a maximum of seven hours a day on SNS (Tandoc et al., 2014).

The sampling approach is illustrated in Figure 10 below. University of the Witwatersrand, Johannesburg has five faculties. These are faculty of Science, Humanities, Commerce, Law and Management, Health Sciences and Built Environment and Engineering. Two schools from each faculty were randomly selected from a list of schools. Ten available classes from the 10 schools were sampled.

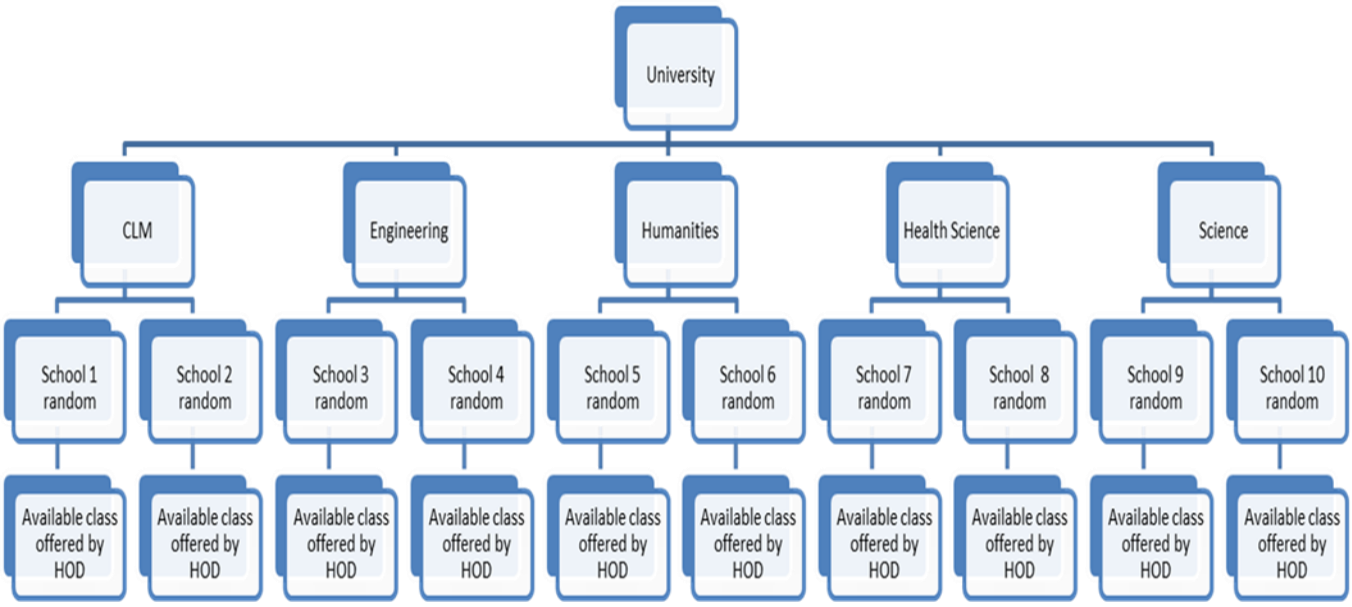

Figure 10: Sampling Approach

The sample size was established by using a power analysis to estimate the number of participants needed. A power analysis revealed that at the $p < .05$ level with an effect size of .50 and a power of at least .80, which is the preferred standard according to Cohen (1992), a sample size of 379 participants was needed to provide the required power to detect effects (Cohen, 1992).

Letters were sent to heads of school of the five faculties (Copies of letters used are in Appendix E and F). The purpose of the letters was to seek permission to survey an available undergraduate class within their school. With approval of the heads of schools, the classes were identified based on availability and accessibility. Although the selection of the schools was random, the selection of the class to be surveyed was based on convenience and thus a non-probability sampling approach was adopted.

Convenience sampling has been found to decrease generalizability of the results (Keppel & Zedeck, 2001). The results may not be representative of the population of university students. However, time and conditions made it not possible to carry out random sampling. Convenience sampling was the best method of obtaining a sample population for this study, taking into consideration the time and conditions. Moreover, participants were of a diverse demographic makeup and classes ranged from first year to fourth year. Classes included males and females and students who reside in resided on student residences and private residences.

3.6.3 Questionnaire

Survey research can be classified into two; questionnaire and interview (Johnson and Christensen, 2008). For questionnaire the respondents write the answers on the instrument and for interviews, responses are often verbal (Bhattacherjee, 2012). Depending on factors such as cost, population coverage and geographical locations, the best survey method can be chosen. In this particular study, a questionnaire was used because it allowed the researcher to reach a high number of the target population and it is cheaper.

Questionnaire was used as data collection instrument. It has the capability of capturing responses in a standardized manner (Saunders et al. 2009: p114). The questions can be closed ended questions or open ended (Bhattacherjee, 2012). The researcher physically administered the questionnaire to individuals. The questionnaires were administered in line with the approved ethics committee's protocol.

It was important for the questionnaire to have a high level of content validity and face validity (Devellis, 2003). Content validity was assured by adopting measurement items from the literature. The researcher ensured that elements within a measurement procedure are relevant and representative of the construct that they will be used to measure (Haynes et al., 1995). Face validity was achieved by running a pre and pilot tests. The researcher tried to achieve content validity by clearly defining the construct and its components.

For a questionnaire to be of good quality response formats (dichotomous, nominal, ordinal interval and continuous responses) have to be used in appropriate parts of the instrument (Bhattacherjee, 2012). The questions in the instrument and the contents are to be clear and not confusing or prone to misinterpretation (Saunders et al., 2011). To ensure a higher response rate, the length of the questionnaire was kept as short as possible. The questionnaire can be found in Appendix H.

3.6.4. Measurements:

There are six main constructs in the model. The measurement items for each construct were drawn from literature and modified to suit the context of social network site usage. The adaptation of constructs from other published studies helps to ensure that the study is underpinned by rigorously developed and validated psychometric questionnaires (Kaiser et al., 2003). In addition to the model constructs, there are demographics of the respondents which were included in the questionnaire.

The respondents conveyed their opinions/perspectives based on a 5 point Likert scale, ranging from "strongly disagree" to "strongly agree", with the midpoint as "neither agree nor disagree".

The measurement items for each of the study constructs are described next.

3.6.4.1 TAM Constructs:

Perceived usefulness and perceived ease of use are the two salient beliefs in TAM (Venketash, 2000).

3.6.4.1.1 Perceived Usefulness

Perceived usefulness was defined as the extent to which the SNS user believes that using a particular SNS helps to meet the related goal-driven needs of the individual in context of hedonic systems (Rauniar et al., 2014). Four measurements items were adapted (as shown in Table 3) from Rauniar et al. (2014) to fit the SNS context.

Table 3 Perceived Usefulness

Construct		Measurements	Source
Perceived Usefulness	PU1	SNS will enable me to connect with all my old friend	Rauniar et al. (2014)
	PU2	SNS will enhance my ability to get information from others	
	PU3	SNS enable me to make new friends	
	PU4	SNS will enable me to share my thoughts and ideas with my friends and other people	

3.6.4.1.2 Perceived Ease of Use

Rauniar et al. (2014) defined perceived ease of use as the degree to which the SNS is free of effort. Rauniar et al. (2014) measurements (as shown in Table 4) were modified and used for perceived ease of use in the SNS context

Table 4 Perceived Ease of Use

Construct		Measurements	Source
Perceived Ease of Use	PEU1	Learning to use SNS is easy for me.	Rauniar et al. (2014)
	PEU2	My interaction with SNS is clear and understandable.	
	PEU3	It is easy for me be to become skilful at participation in SNS	
	PEU4	Overall, participation in SNS is easy for me	

3.6.4.1.3 Risk

Risk (as shown in Table 5) is defined as user's subjective belief of suffering a loss in pursuit of a desired outcome (Yousafzai, 2003). Risk exists when a person is faced with hazard or exposure to loss (Fatherman and Pavlou, 2003; Lu et al., 2005).

Table 5 Multi-dimensional Risk

Construct		Measurements	Source
Psychological Risk	PSY1	The thought of using SNS makes me feel uncomfortable.	Featherman and Pavlou (2003)
	PSY2	The thought of using SNS gives me an unwanted feeling of anxiety	
	PSY 3	The thought of using SNS causes me to experience unnecessary tension	
Time Loss Risk			
	TIE1	I am concerned about wasting too much time participating in the social network SNS	Featherman and Pavlou (2003)
	TIE2	I am concerned about having to waste time on tasks(reading and writing) related to participation in the social network SNS	
Social Risk			
	RSO1	If I use SNS, I think I would be held in higher esteem by my colleagues	Featherman and Pavlou (2003)
	RSO2	The thought of using SNS and something go wrong with SNS, my friends, family and colleagues would think less of me.	
	RSO3	Some of the people whose opinion I value would think I was foolish if I use SNS.	
Performance risk			
	PRF1	SNS may fail to perform as it was designed and advertised	Featherman and Pavlou (2003);
	PRF2	SNS may fail to deliver expected benefits	
	PRF3	The SNS might not perform well and create problems with my information.	
	PRF4	There is a likelihood that there will be something wrong with the performance of the SNS or that it will not work properly	
Privacy risk	PRR 1	My use of SNS would cause me to lose control over the privacy of my information	Featherman and Pavlou (2003)
	PRR2	Using SNS would lead to a loss of privacy for me because my personal information could be used without my knowledge.	
	PRR3	Internet hackers (criminals) might take control of my information if I used SNS	
Financial Risk			
	PFR1	Using SNS would be a poor way to spend my money.	Featherman and Pavlou (2003)
	PFR2	I would be concerned about how much I would pay if I use SNS	
	PFR3	If I use SNS, I would be concerned that I would not get my money's worth.	
Physical Risk			
	PHY 1	Using SNS may infect may device with viruses and malware	Lu, Hsu, Hsu (2005)
	PHY 2	Using SNS may corrupt may data in the device	

3.6.4.1.4 Motivation

Motivation has been identified as an important factor in understanding technology usage behaviour (Davis et al. 1992). Maslow (1950, 1970) studied human motivation and stated that human motivation is based on people seeking fulfilment. Chen (2013), Cheung et al. (2011) and Gangadharbatla (2008) items measuring motivation (as shown in Table 6) will be used.

Table 6 Facets of Motivation

Construct		Measurements (my use of SNS allows me to)	Source
Need to belong	BE1	Let out my emotions easily to others.	Gangadharbatla(2008)
	BE2	Express my problems to otherswho will help	
	BE3	Talk to others when I am lonely	
	BE4	Let others know I care about their feelings	

Enjoyment			
	EN1	Using SNS is exciting	Chen (2013)
	EN2	Using SNS is pleasant	
	EN3	Using SNS is interesting	
Self-Actualization			
	SA1	SNS give me the opportunity for personal growth and development	Cheunget al. (2011)
	SA2	SNS give me the feelings of worthwhile accomplishment	
	SA3	SNS give me the opportunity for doing original or creative work	
		SNS give me the feeling of self-fulfilment	
Self esteem			
	SE1	Using SNS gives me the feeling of self esteem	Gangadharbatla(2008)
	SE2	Using SNS gives me prestige in the online and offline community	
	SE3	Using SNS gives me recognition	
Safety			
	SC1	Using SNS gives me a feeling of safety in my life	
	SC2	I feel secure in my life when I use SNS	
	SC 3	I feel settled in my life when I use SNS	

3.6.4.1.5 Usage

Usage is defined as the frequency of using an application (Johnston et al., 2013). Measurement items for usage are as shown in Table 7.

Table 7 Usage

Construct		Measurements	Source
Usage (model testing)	U1	SNS is part of my everyday activity	(Johnston, Tanner, Lalla and Kawalski, 2013)
	U2	I am proud to tell people I am on SNS	
	U3	SNS has become part of my daily routine	
	U4	I feel out of touch when I have not logged onto SNS for a while	
	U5	I feel I am part of the SNS community	
	U6	I would be sorry if SNS shut down	
Usage (demographics analysis)	U7	How old were you when you first started using SNS account	
	U8	How many times per day do you access your SNS accounts	
	U9	How many SNS do you participate in	
	U10	Which SNS account do you use most	
	U11	How many hours on average per day do you spend on SNS	
	U12	How many friends do you have on a particular SNS	
	U13	Which SNS account do you use most	

3.6.4.1.6 Behavioural Intention

Behavioural Intention is defined as "the person's subjective probability that he will perform the behaviour in question" (Fishbein and Ajzen, 1975: p12). Lin (2006) items measuring behavioural intention (as shown in Table 8) will be used.

Table 8 Behavioural Intention

Construct		Measurements	Source
Behavioural Intention	BI1	I plan to post content on an SNS site within the next 24 hours	Lin (2006)
	BI2	It is very likely that I will post content on an SNS site within the next 24 hours	
	BI3	I plan to share information with friends/contacts on an SNS site within the next 24 hours	
	BI4	I plan to read others' posts on an SNS site within the next 24 hours / It is very likely that I will read others' posts on an SNS site within the next 24 hours	
	BI5	I expect to respond to the posts of others on an SNS site (e.g. by liking or commenting) within the next 24 hours	
	BI6	I expect to respond to the posts of others on an SNS site (e.g. by following a link to a story, video or other content) within the next 24 hours	

The questionnaire also collected demographic data i.e. age, gender, year of study, employment status, programme of study, race, residence and other questions such as types of SNS visited, profile elements, type of profile (public/private) were for descriptive purposes (Johnston et al., 2013).

3.6.5 Pre and Pilot testing

Prior to comprehensive data collection, faculty members were asked to pre-test the questionnaire and their comments were incorporated. The purpose is to determine whether the questions are easy to understand and if necessary to clarify the content of the items. In addition to use of literature to operationalize variables, content validity was further established through the pre-test with four academic experts.

A pilot test was conducted which further improved face validity of the instrument. A total of 42 University of Witwatersrand, Johannesburg students were used to pilot test the instrument. The students were from different faculties, different genders and were reached using convenience sampling. The pilot test helps in identifying difficulties with the wording and interpretation of items in each set. In addition, it also helps to pinpoint misunderstanding in the instrumentation

3.6.6 Administration of the instrument

Once access to a class was permitted, the survey was administered at the end of lecture session. All the students present in the class at that time were handed the cover letter (Appendix G) inviting them to participate together with a paper-based copy of the

questionnaire. Students spent a maximum of 20 minutes when completing the questionnaire. Questionnaires were completed anonymously and handed back to the researcher.

3.7 Analysis Approach

The first step in analysis is a data preparation stage where the researcher must perform data coding and data entry (Bhattacherjee, 2012). It is common for empirical data set to have missing data and the researcher chose listwise deletion in cases where more than 10% of data is missing or imputation technique for cases of small amount of missing data (Johnson and Christensen, 2008). Further the data was screened for outliers, which were removed when detected.

Following data preparation, descriptive statistics and demographic data are presented. This includes preferred SNS, usage habits, time spent on SNS and number of friends.

3.7.1 Initial Reliability and Validity Testing

Following presentation of demographic data, an exploratory PCA was performed for the purposes of testing for convergent validity (items load on their expected construct) and discriminant validity (items do not load in constructs not expected to measure) (Bagozzi et al. 1991). Item loadings should be higher than .60 on their relevant theoretical construct for convergent validity, and items should not load above .40 on other constructs they are not intended to measure. Items found not to load were dropped at this stage.

Cronbach's alpha was then used to measure internal consistency of the scale measures. An alpha of 0.7 was used as it is a generally accepted cut-off level

Thereafter, the partial least squares (PLS) approach to structural equation modelling was used to carry out confirmatory factor analysis and test the model's hypothesized relationships.

3.7.2 PLS Approach

Information Systems research is one of the many fields that are using structural equation modelling. SEM is a statistical technique for simultaneously testing and estimating causal relationships among multiple independent and dependent constructs (Gefen et al. 2000). Structural equation models describe the relationships between several constructs and these constructs are usually modelled as latent variables (LV) that can be measured only through a set of indicators (Urbach and Ahlemann, 2010). There are two sub models in a SEM; the inner model specifies the relationships between the independent and dependent latent variables, whereas the outer model specifies the relationships between the latent variables and their observed indicators (Wong, 2013). A common technique to test structural models is the component-based approach partial least squares (PLS) (Albers, 2010; Henseler et al., 2009).

SmartPLS is one of the prominent software applications for PLS-SEM (Wong, 2013) and it will be used for this study. The software has gained popularity since its launch in 2005 not

only because it is freely available to academics and researchers, but also because it has a friendly user interface and advanced reporting features.

PLS is an adequate choice for the research problem and meets certain characteristics of the study (Based on Urbach and Ahlemann, 2010).

- PLS makes fewer demands regarding sample size than other methods,
- PLS does not require normal-distributed input data,
- PLS can be applied to complex structural equation models with a large number of constructs,
- PLS is able to handle both reflective and formative constructs,
- PLS is better suited for theory development than for theory testing,
- PLS is especially useful for prediction.

SmartPLS software was used to simultaneously test both the inner measurement model (confirmatory factor analysis) and outer structural model (that tests hypothesized relationships amongst the constructs).

The test of the inner model provides for a confirmatory factory analysis (CFA) (Chen, 2013). For all constructs, loadings and cross loading are used to assess convergent and discriminant validity. The average variance extracted (AVE), which is a measure of the amount of variance that is captured by the construct in relation to the amount of variance due to measurement error (Fornell and Larcker, 1981), is further used to establish convergent validity. AVE should be above 0.5 for convergent validity (Werts et al., 1974; Soliman, 2012). Discriminant validity was evident if each indicator's cross loading was lower than its loading on its theoretically intended construct. The square root of average variance extracted (AVE) of each construct should also be higher than the inter-construct correlations if discriminant validity is of good level (Luo et al., 2010; Gefen et al., 2008).

Furthermore, the CFA provides an assessment of composite reliability (CR) where a CR above the 0.7 threshold was adopted (Soliman, 2012).

3.7.3 Hypothesis Testing

The ability of PLS to handle formative constructs is especially important in the test of this study's model as both risk and motivation have been conceptualized as multiple dimensional constructs that were modelled in the formative mode. Risk was modelled as a higher-order construct where composite scores of the first-order risk dimensions were used as the formative manifest indicators of the higher-order risk construct. The composite scores of the first-order risk dimensions were obtained following a PCA analysis as the aggregates of items weighted equally. Similarly, motivation was modelled as a higher-order construct where the composite scores of the first-order risk dimensions were used as the formative manifest indicators of the higher-order risk construct. Composites were similarly calculated as the aggregates of items weighted equally.

The hypothesised relationship between the constructs (i.e. research model) is then tested using PLS, where path coefficients in the PLS model are interpreted to determine if hypotheses are supported or rejected. An alpha level of 0.05 was adopted in the study, i.e. all paths where $p<0.05$ were considered as supporting the associated hypothesis otherwise the hypothesis were be rejected (Luo et al. 2010).

The relative magnitudes of the path coefficients linking risk and motivation to usage intentions were illustrate which between risk and motivation has the largest effect on user behaviour.

PLS also provides the R^2 coefficient of determination which provides a measure of how well observed outcomes are replicated by the model, as a proportion of total variation of outcomes explained by the model (Draper and Smith, 1998; Glantz, Stanton and Slinker 1990; Steel and Torrie, 1960). R^2 is used with PLS as an indicator of the model's fit, if the model perfectly fits the data, R^2 should be 1.

3.8 Ethical Considerations

The researcher has complied with ethical guidelines for research on human subjects as defined by the University of the Witwatersrand, Johannesburg. University of the Witwatersrand, Johannesburg has well defined guidelines and ethics committee to ensure conformance thus

Permission from the registrar's office (Appendix E) was obtained prior to approaching course coordinators/lecturers, and permission obtained from the coordinator /lecturer of the sampled courses prior to questionnaire administration.

Letters were sent to heads of school of the five faculties. The purpose of the letters was to seek permission to survey an available undergraduate class within their school. With approval of the heads of schools, the classes were identified based on availability and accessibility. Although the selection of the schools was random, the selection of the class to be surveyed was based on convenience and thus a non-probability sampling approach was adopted.

Prior to sampling students from the aforementioned university, the author sought and obtained permission from the university registrar and the university's ethics committee.

Where permission was granted to the researcher, the survey was then administered at the end of a lesson. Students in each class were invited to participate and the purpose of the study was explained verbally prior to asking them to complete the questionnaire. A cover letter (Appendix F) was issued which explained the objectives of the study and explained conditions of participation. It was indicated that participation in the study was voluntary, respondents could choose to withdraw at any time, and study data was confidential. After reading and understanding the conditions, respondents signed letters of consent (Appendix G).

Furthermore, the study required clearance from the relevant ethics committee, and demonstrated that it conformed to generally accepted ethical standards such as those discussed in Bhattacherjee (2012). This includes:

Voluntary participation and harmlessness: The respondents were made aware that their participation in the study is voluntary and they could withdraw at any time without any unfavourable consequences. Respondents' participation or non-participation will not subject them to any harm. The invitation is found in Appendix F.

Anonymity and confidentiality: To protect respondents' interest and anonymity, no personal identity (e.g. name, id or cell number) was required. All data is treated confidentially and will not be shared with any third party.

The researcher also observed the disclosure standard: the researcher provided some information about the study to respondents before data collection to ensure informed consent by allowing them to decide whether or not they wished to participate. Aggregate findings of the study will be disclosed irrespective of the outcome (e.g. negative or positive).

The study was approved by University of the Witwatersrand, Johannesburg human subjects (non-medical) ethics committee and ethics permission was obtained - clearance number is: H14/08/17 (see Appendix D).

3.9 Study Limitations

Using one university in the city of Johannesburg, South Africa may be a limitation. The sample from the one university may not be representative of the broader population of the South African students.

The study is cross-sectional. This may be a limitation. Cross sectional studies have limited generalizability because the respondents' behaviour was not observed over time. Experimental studies may be more adequate to differentiate cause and effect. However, the survey allowed the study a much larger sample of users.

The respondents have self-reported by filling in the questionnaire. There may be potential social desirability bias. In addition, respondents may fill the questionnaire in a hurry thus not answering the questions honestly. Also, a response pattern and consistency bias may be present. Specifically, a respondent's answer to a certain question may be determined by an answer to a previous question.

Since the study is quantitative, it may lack the open-ended exploration and discussion possible in qualitative study.

The study focused on determinants of usage of the respondents' preferred SNS platform, it does not probe the specific features or characteristics of a platform.

3.10 Conclusion

This chapter discussed a positivist paradigm, adopting a hypothetico-deductive approach using a survey strategy with a structured questionnaire. Operationalization of items was presented. The sampling of University students was discussed as well as associated ethical considerations for the survey. The use of PLS as a data analysis method was described and the limitations of the research outlined. The next chapter will discuss empirical results.

CHAPTER 4 – EMPIRICAL RESULTS

4.0 Introduction

This chapter organizes and reports the study's main findings, including the presentation of relevant quantitative data. First data is cleaned, missing data handled and outliers considered. Then the chapter presents the respondent profile using demographic data. This is followed by an initial principal component analysis (PCA) to refine measure prior to results of the test of the measurement model using confirmatory factor analysis within PLS. This included tests for convergent and discriminant validity, and scale reliability. The chapter then includes the results of the test of the structural model using partial least squares analysis, which was used to accept or reject the study's hypotheses.

4.1. Data Preparation

A total of 550 questionnaires were physically administered to the students participating in the study drawn from the randomly selected classes from each of the five faculties. A total of 35 questionnaires were not usable; 22 participants were excluded because they reported no prior exposure to or usage of SNS. The questionnaire was designed in such a way that those with no prior experience fill the demographics section only. Seventeen of the excluded non users' questionnaires were from females and 5 males, all fall within the 18-25 age bracket and 10 reside on campus and 12 elsewhere. The other 13 respondents were excluded because they omitted more than 10% of the questionnaire. In total of 515 questionnaires were used in the study.

Data coding and cleaning was done prior to analysis. Out of the three possible answers only female and male were selected to represent respondent's gender, female was coded as 0 and male as 1. Five Likert scale was used, and coded as follows; 1=strongly disagree, 2=disagree, 3=neutral, 4=agree, and 5=strongly agree. For social1 (If I subscribe to SNS, I will be held in high esteem) and psychology1 (Using SNS makes me comfortable) risk items which needed reverse coding, 5=strongly disagree, 4=disagree, 3=neutral, 2=agree, and 1=strongly agree. Coding makes analysis and interpretation easy.

In addition, data was checked for wrong entries and outliers using the minimum and maximum (dispersion); for Likert scale, only figures between 1 and 5 are expected.

Missing data was imputed using a series mean replacement strategy. Data was considered missing at random, there was a maximum of 3 missing values per question and none of the individual respondent's questionnaires was missed missing more than 2 values, as shown in Table 9.

Table 9 Missing Values

Item	N	Missing
UseDay	512	3
Displayed1	514	1
Displayed6	514	1
Usage1	513	2
Usage3	513	2
Intention3	514	1
Usefulness4	514	1
Time2	514	1
Time3	513	2
Social3	514	1
Performance1	514	1
Privacy3	514	1
Financial1	514	1
Financial3	514	1
Belong4	514	1
Esteem1	514	1
Esteem2	514	1
Enjoyment3	513	2
Safety1	514	1
Total		25

4.2 Respondent's demographic data

Table 10 and graphs showing demographics (Figure 11, 12, 13) indicates that 73.8% of the respondents are female and according to University of the University of Witwatersrand, Johannesburg 2013 fact sheet, majority of the students are female, this translates to 16 900 of the 30 000 total student enrolment. Proportion of females in the sample is slightly higher than the proportion in the population. Faculty of Commerce, Law and Management is the largest with approximately 30% of the 30 000 students registered and the study's findings were consistent with university handbook, 31.8% of the respondents were from this faculty. Of the 515 respondents, 46 (8.9%) were from the Faculty of Science, which according to university fact sheet has 4000 students and this accounts for 13% of the total university enrolment. The spread of respondents across the faculties is roughly proportional to the spread in the population (similar to the population, Faculty of Commerce, Law and Management had the highest respondents, followed by Engineering, Health Science came third, fourth is Humanities and lastly Science). Overall however, the distribution of the responses across the five Faculties is not statistically significantly different from the proportions in the population (chi-square test was .220).

Majority of the respondents were 20 years (30.7%) and the youngest being below 18 years (0.4 %) and the older respondents were more than 23 years (9.3%).

Table 10 is showing respondent's types of residence. Respondents stay in various places such as University residence (26%), private students' residence (20%), home (43%) and other rented houses (10%) which are not student's residence. According to the University fact sheet, 18% of the students reside on campus. Results indicate that majority of the respondents get their money from home (66%) and a small percent (11%) have no source of income.

Table 10 : Demographics of Respondents

	Frequency	Percent	Cumulative Percent
Gender			
Female	380	73.8	73.8
Male	135	26.2	100.0
Major			
Commerce&Law	162	31.5	31.5
Engineering	110	21.4	52.8
Health Science	105	20.4	73.2
Humanities	92	17.9	91.1
Science	46	8.9	100.0
Level Of Study			
First Year	99	19.2	19.2
Second Year	215	41.7	61.0
Third Year	156	30.3	91.3
Fourth or Honours	45	8.7	100.0
Age			
18	23	4.5	4.9
19	83	16.1	20.6
20	158	30.7	51.3
21	109	21.2	72.4
22	57	11.1	83.5
23	37	7.2	90.7
More than 23	48	9.3	100.0
Place of Residence			
University Res	137	26.6	26.6
Private Res	107	20.8	47.4
Home	222	43.1	90.5
Renting, but not in a res	49	9.5	100.0

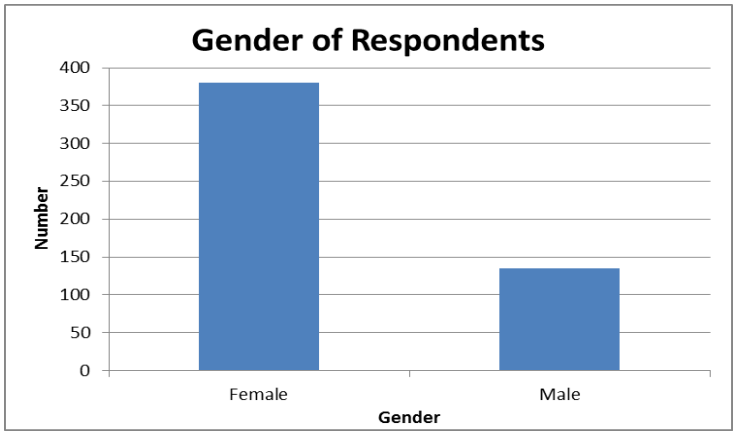

Figure 11 Gender of respondents

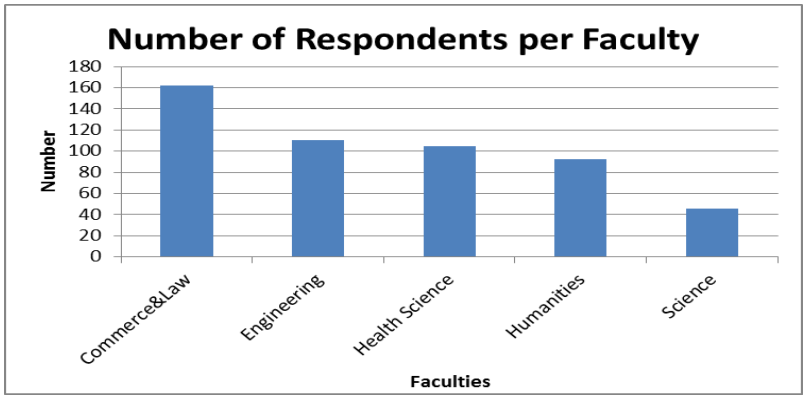

Figure 12 Number of respondents per faculty

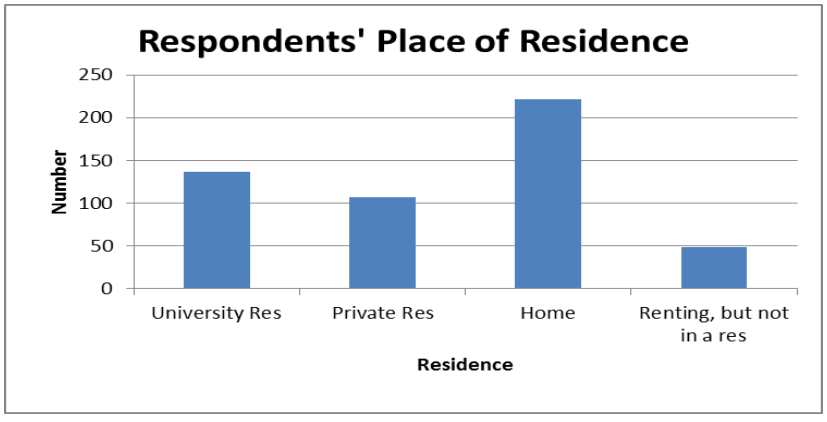

Figure 13 Respondents' place of residence

Description of the Social Network Sites Use

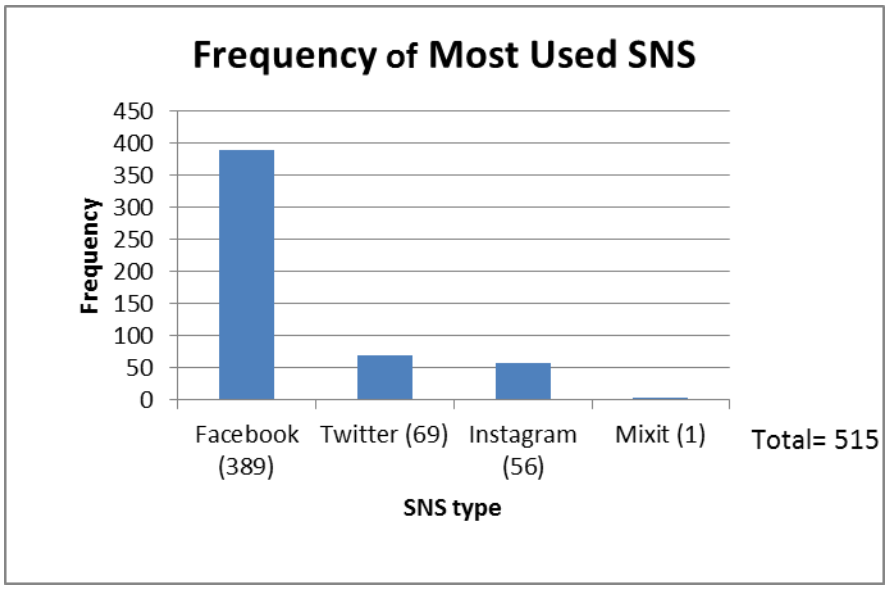

Figure 14 : Graph of Most Used SNS

Figure 14 shows number of users of the most used SNS. The study found Facebook to be the most used SNS followed by twitter and researchers such as Zhenfang et al. (2014), Social Media Landscape (2014) and Wang et al. (2014) reported the same findings. South African social site Mxit was only specified by one person as his or her most used SNS. Based on the South Africa Social Media Landscape (2014), which put Facebook first followed by Mxit and Twitter last, expectation was for Mxit to be second largest SNS.

As discussed in South Africa Social Media Landscape (2014), Facebook, Twitter, YouTube, Google+, Pinterest are classified as content sharing sites and Whatsapp, Mxit and BBM are mobile instant messaging applications. This may be the reason why users did not choose Mxit amongst content sharing SNS.

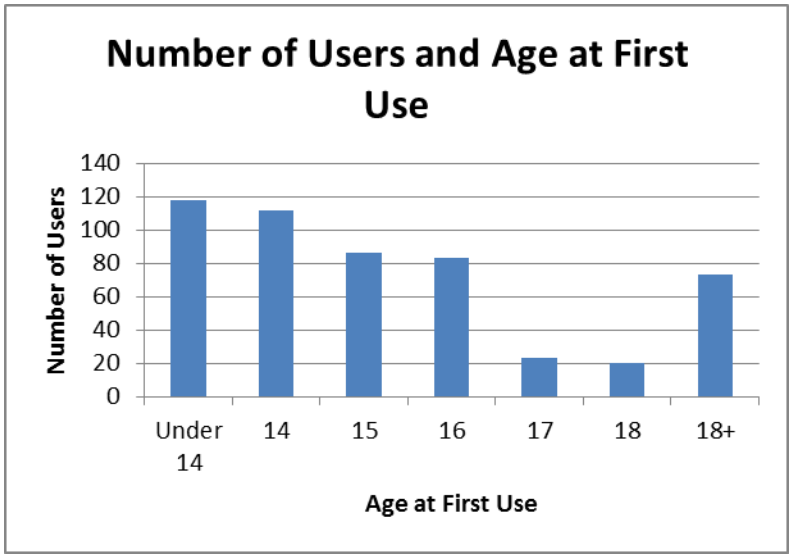

Figure 15: Graph of Age at First Use

Figure 15 shows the age of respondent when he/she first used SNS. Respondents start to use SNS at an early age, more than half of the respondents used SNS for the first time during the ages of 14-15. Respondents who started the use of SNS at 17 and 18 years account for 23% and 20% respectively. The study shows that SNS are used by teenagers, and this may be a concern taking into account the risks involved. Youth account for majority of SNS users (Lenhart and Madden, 2007; Ofcom, 2008; Lampe et al., 2013).

Table 11 shows the SNS usage activity across the respondents. It was found that almost two-thirds of the respondents reported being "always on". This confirms the fact that university students are the digital generation; they are always on the internet and SNS (Johnston et al., 2013). 54.4% of the respondents stated that their profile of the most used SNS is private, which means that close to half of the respondents' profiles are public. This leaves them vulnerable to risks and compromises their privacy.

SNS are gaining momentum and used by large amounts of people (Ernst et al., 2013), this may be because SNS are easily accessible. 80.6% of respondents access SNS through phones.

Figure 16, show that 35% of the respondents spent less than an hour on SNS and 25% spend between 1 and 2 hours a day on SNS. Other studies found the same amount of time spent on SNS; for example 101.09 min per day (Junco, 2011), 101.91 min per day (Panek, Nardis and Konrath, 2013). This means that over 60% of the respondents spend between less than an hour and 2 hours on SNS a day. Close to 12% respondents spent more than 5hours on SNS. A 2010 Nielsen report found that the world spent over 110 billion minutes on social networks (Chen, 2013).

Majority (42%) of respondents have more than 300 friends on the most used SNS, followed by those who have 100-200 friends on SNS at 21%. This is consistent with studies by Lim (2007) and Johnston et al. (2013) who reported that majority of SNS users have more than 300 friends on their profiles. Based on these online friends, 61% respondents personally know more than 50%. Only 6% of respondents know less than 10% of the friends. Social networking sites offer a platform for online users to interact with one another and to maintain interpersonal relationships (Chen, 2013).

Table 11 : Usage Description

	Frequency	Percent	Cumulative Percent
Use Days on Average a Week			
0 days	16	3.1	3.1
1 day	20	3.9	7.0
2 days	20	3.9	10.9
3 days	29	5.6	16.5
4 days	89	17.3	33.8
Always On	341	66.2	100.0
Profile of Most Used SNS			
Private	280	54.4	54.4
Public	182	35.3	89.7
Don't Know	53	10.3	100.0
Device Most Used to Access SNS			
Phone	415	80.6	80.6
Laptop	60	11.7	92.2
Desktop	15	2.9	95.1
Tablet	25	4.9	100.0
Use Hours on Average a Day			
Less than 1hour	180	35.0	35.0
1 to 2 hours	130	25.2	60.2
2 to 3 hours	71	13.8	74.2
3 to 4 hours	47	9.1	83.3
4 to 5 hours	26	5.0	88.3
More than 5 hours	60	11.7	100.0
No. of Friends on Most Used SNS			
Less than 50	53	10.3	10.3
51 to 100	58	11.3	21.6
101 to 200	107	20.8	42.3
201 to 300	81	15.7	58.3
More than 300	215	41.7	100.0
Percent of Known Friends on Most Used SNS			
Less Than 10 %	32	6.2	6.2
10%	22	4.3	10.5
20%	35	6.8	17.3
30%	53	10.3	27.6
40%	59	11.5	39.0
50% or more	314	61.0	100.0

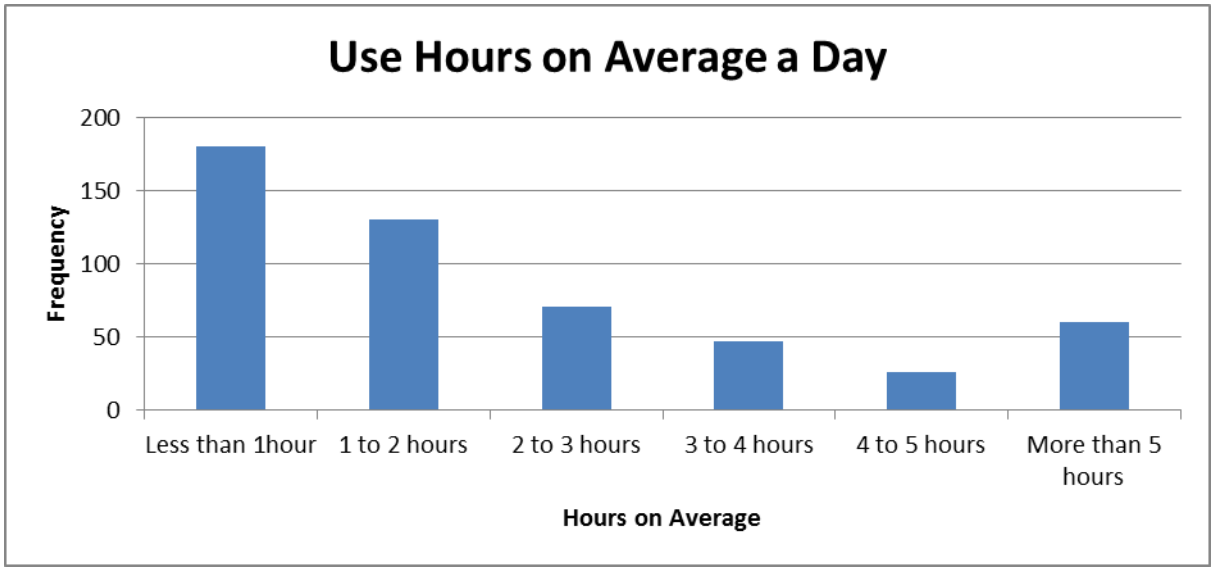

Figure 16 : Graph of use on average a day

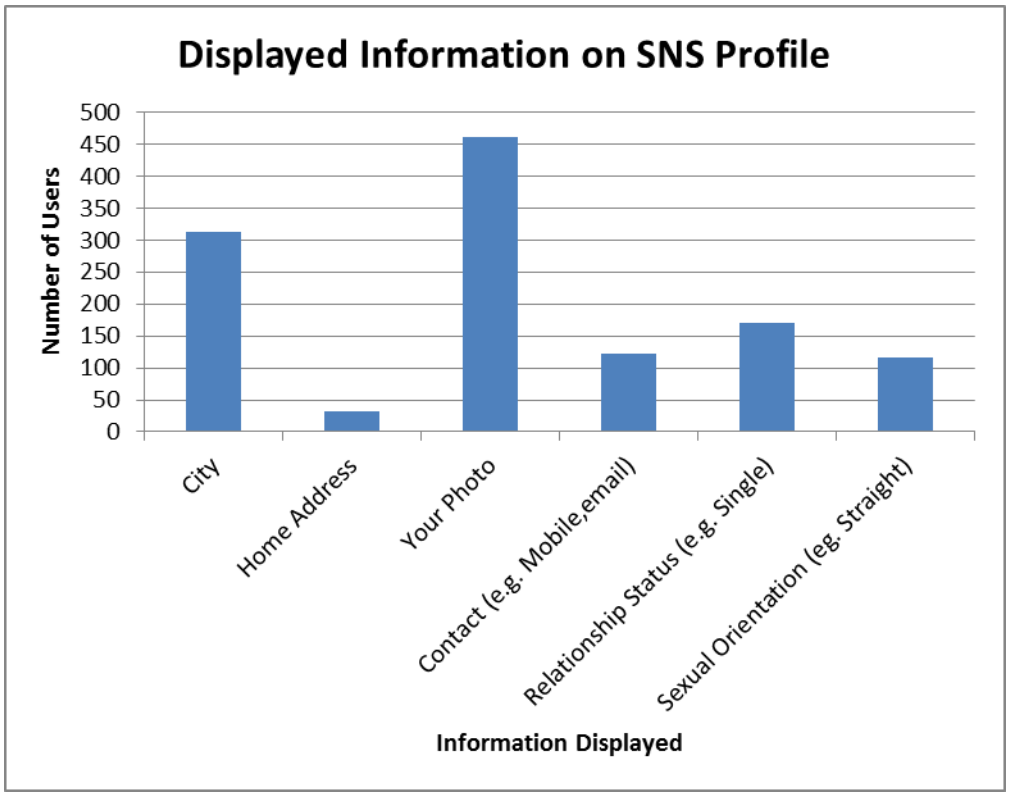

Figure 17: Graph of displayed information on SNS

The chart (Figure 17) above shows that while almost all respondents include personal photos, very few were prepared to include home address. Only about one quarter included their sexual orientation and contacts. Relationship status is the third frequently displayed personal information and home address is the list displayed information.

70% agreed that SNS usage was part of their daily activity. 64% of the respondents stated that SNS is part of their daily routine. 48% of the respondents feel out of touch when not logged on. 51% of the respondents stated that they would be sorry if SNS shutdown. This shows that majority of users use SNS daily and it will be difficult for them to share information without it.

It is interesting to find that respondents are not keen to share information (34%) or post information (30%) in the next 24 hours but 55% are willing to respond to posts of others in the next 24hours.

More than 77% of respondents reported that SNS is useful to them because it enables them to connect with people, while 72 % reported that SNS enhance their ability to get information. SNS usefulness was also reported by Boyd and Ellison (2007) and Chen (2013). They discussed that SNS is important for communication and information sharing. This suggests that connecting with friends and getting information are the main reason why people use SNS.

Table 12 : Pearson Chi-square results

Variables	Pearson Chi-Square number	Significance
Gender * Usage	21.59	0.936
Gender * Profile (private/public) of most used SNS	26.34	0.000
Gender * Age at first use	7.52	0.185
Gender * Use days on average a week	10.10	0.072
Gender * Use hours on average a day	14.90	0.021
Gender * Number of friends on most used SNS	7.89	0.162
Gender * Displaying contacts (e.g. email, number etc)	22.49	0.000
Gender * Sexual orientation	13.45	0.001

Table 12 shows results of chi-square test for various associations. It was found that there was no statistical significant association between gender and usage, gender and age at first use, gender and use days on average a week and gender and number of friends. Out of 380 females, majority of females prefer to have their profile of most used SNS as private (61%) while 31% females prefer public and 8% do not know if their profiles are private or public. On the other hand, out of 135 males, most males' profiles are public (48%) as opposed to 36% private and 16% do not know if the profiles are private or public. This association was found to be statistically significant with $\chi^2=26.34$ ($p<0.001$).

It was found that females spend more hours on average a day on SNS as opposed to males. There is a statistical significant association between gender and use hours on average a day, $\chi 2= 14.90$ ($p<0.05$). Females display their contacts less than males on their profile of the most used SNS. It was found that 60% of the respondents were females who did not display their contacts as opposed to 16% of the respondents being males who did not display their contacts. Females' not preferring to display contacts was statistically significant, shown by $\chi^2= 22.49$ ($p<0.001$).

Most males do display their sexual orientation on SNS. It was found that 81 % of females do not display their sexual orientation on their profile of the most used SNS as opposed to 65% of males who do not display it. There is a statistical significance in association between gender and display sexual orientation $\chi^2= 13.45$ ($p<0.001$).

Table 13 : Statistics for measurement items

	Mean	Median	Std. Deviation
A. Usage			
SNS is Part of My Everyday Activity	3.84	4.00	1.259
I am proud to tell people I am on SNS	3.75	4.00	1.104
SNS part of my daily routine	3.73	4.00	1.274
Feel out of touch when not logged on	3.23	3.00	1.405
Feel I am part of the community	3.41	4.00	1.191
I would be sorry if SNS shut down	3.35	4.00	1.391
B. Behavioral Intention			
Will post content within next 24hours	2.85	3.00	1.455
Plan to share info within next 24hours	2.74	3.00	1.340
Expect to respond to posts of others within 24hours	3.36	4.00	1.358
C. Perceived Usefulness			
SNS enable me to connect with other people	3.95	4.00	1.103
SNS enhance my ability to get info	3.91	4.00	1.055
SNS enable me to make new friends	2.93	3.00	1.247
SNS enable me to share my thoughts	3.61	4.00	1.160
D. Perceived Ease of Use			
Learning to use SNS is easy	4.24	4.00	.979
SNS interaction is clear and understandable	4.15	4.00	.943
Easy to become skillful at SNS participation	3.95	4.00	1.010
Overall participation is easy	4.06	4.00	1.011
E. Psychological Risk			
Using SNS makes me comfortable(reversed)	2.81	3.00	1.177
Using SNS makes me feel anxious	2.26	2.00	1.119
Using SNS cause me to experience tension	2.15	2.00	1.138

F. Time Risk			
Concerned about wasting time on SNS participation	3.51	4.00	1.350
Concerned about wasting time on SNS tasks	3.23	3.00	1.308
SNS could create more time pressure on me	3.24	3.00	1.295
G. Social Risk			
If I subscribe to SNS,I will be held in high esteem(reversed)	3.61	4.00	1.121
SNS cause me concern, regarding what friends think	2.28	2.00	1.139
Some people, Would think I was foolish if signed up	1.93	2.00	1.034
H. Performance Risk			
SNS would not provide expected benefits	2.51	3.00	1.077
SNS fail to perform as they supposed to	2.58	3.00	1.097
Not confident that the SNS provider's SNS will perform	2.63	3.00	1.143
I. Physical Risk			
SNS can cause eyestrain	3.07	3.00	1.286
SNS can cause health related risks	2.81	3.00	1.245
SNS may lead to uncomfortable side effects	2.85	3.00	1.295
J. Privacy Risk			
SNS use could cause loss of privacy control	2.86	3.00	1.245
SNS could lead to use of privacy info. without knowledge	3.15	3.00	1.218
Criminals might take control of info. on SNS	3.49	4.00	1.165
K. Financial Risk			
SNS would be a poor way to spend money	2.75	3.00	1.345
Would be concerned about what to pay for SNS	3.00	3.00	1.377
SNS subscription won’t give me money's worth	2.82	3.00	1.306
L. Need to belong			
SNS enable me to let out my feelings	2.62	2.00	1.216
SNS enable me to express my problems	2.44	2.00	1.153
SNS enable me to talk to others	2.84	3.00	1.276
SNS let others know I care about their feelings	2.96	3.00	1.262
M. Self-Actualization			
SNS give opportunity for personal growth and development	2.82	3.00	1.183
SNS give me the feeling of worthwhile accomplishment	2.62	3.00	1.141
SNS give me the original/creative work opportunity	2.93	3.00	1.171
SNS give the feeling of self-fulfillment	2.60	3.00	1.151
N. Self Esteem			
Using SNS gives me feeling of self esteem	2.56	3.00	1.166
Using SNS gives me prestige in the community	2.46	2.00	1.105

Using SNS gives me recognition	2.82	3.00	1.230
O. Enjoyment			
Using SNS is exciting	3.62	4.00	1.109
Using SNS is pleasant	3.72	4.00	.998
Using SNS is compelling	3.42	3.00	1.104
P. Safety			
Using SNS gives me a feeling of safety	2.21	2.00	.972
I feel secure in my life when using SNS	2.31	2.00	1.028
I feel settled in my life when using SNS	2.41	2.00	1.095

Table 13 provides mean, median and standard deviations of measurement scales of usage, perceived usefulness, and perceived ease of use, behavioural intention, risk and motivation. All items for usage, perceived ease of use, time and enjoyment scored a mean above 3, perceived usefulness and privacy risk have one item with a mean below 3 and other variables' (e.g. behavioural intention, safety, and others) have two or more of the items scoring a mean below 3.

Figure 18 shows perceived usefulness items' means. Respondents scored 'using SNS for connecting' and 'sharing information' higher, followed by 'sharing thoughts' and lastly they use SNS to make friends.

Enjoyment, safety and perceived ease of use have items with standard deviations below 1 and the rest of the variables (usage, perceived usefulness and others) have standard deviation between 1.1 and 1.5. Safety, need to belong and self-actualization items scored medians below 3 and all other constructs' items have medians 3 or 4. The first items for psychological risky and social risk were reversed, so the mean, median and standard deviation shown for these items are after reverse coding.

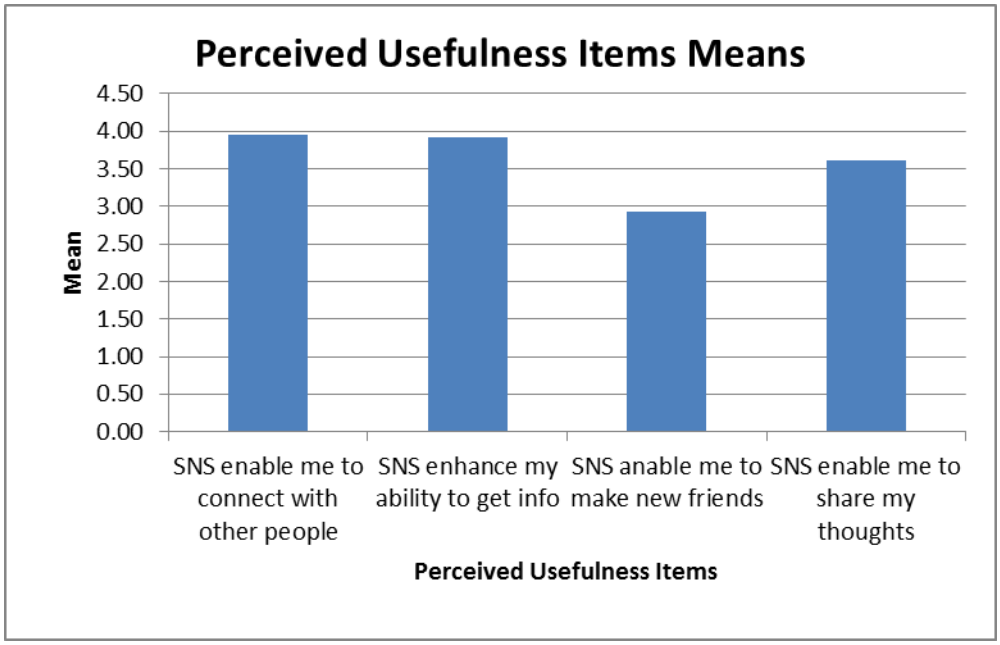

Figure 18: Graph of usefulness items means

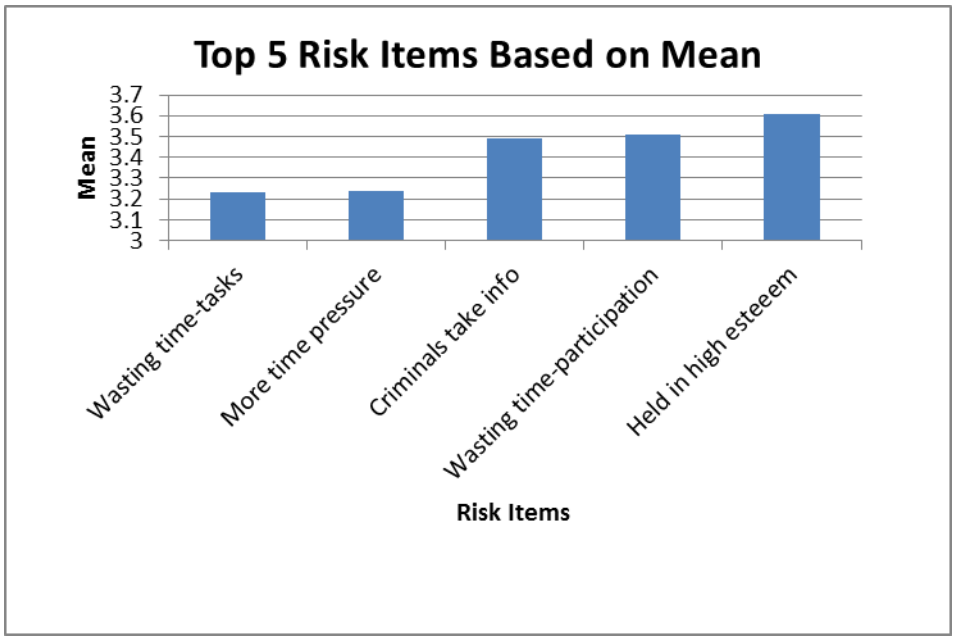

Figure 19: Graph of top 5 risk items based on mean

In addition to calculating means for risk items, items were ranked based on their means. Figure 19 shows top five risk items. Users ranked social1 (held in high esteem)-risk highest (mean 3.61 out of 5) i.e. the risk that colleagues may not hold them in high esteem if they subscribe for SNS. The probability of users incurring loss by wasting time on SNS tasks (all three time items in top 5) suggests time risk is strong in user perceptions.

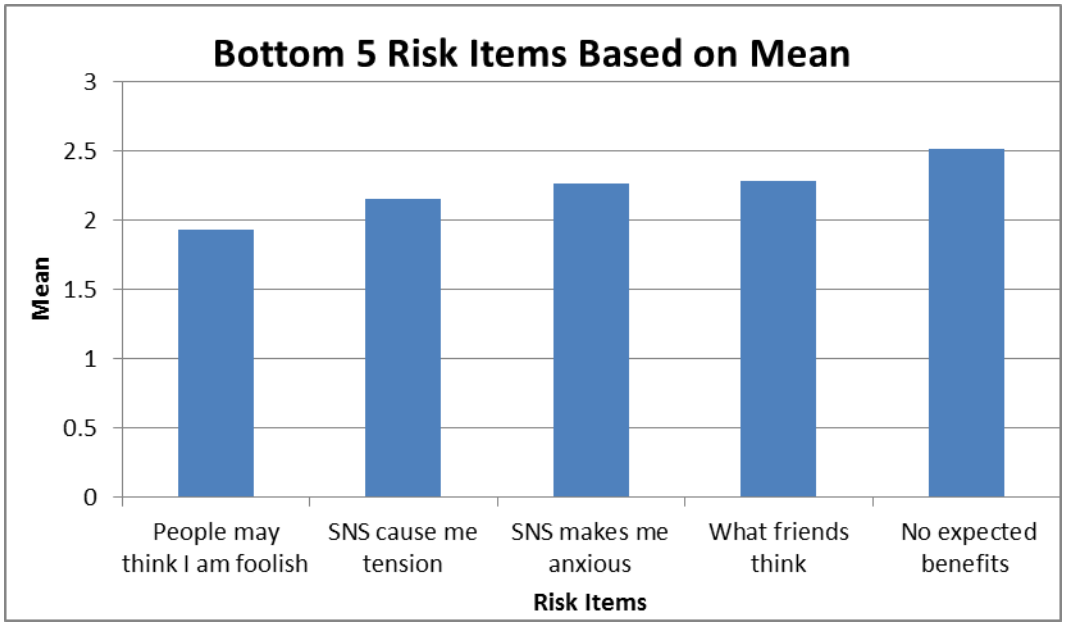

Figure 20: Graph of bottom 5 risk items base on mean

Figure 20 shows bottom five risk items. Performance1 (no expected benefits)-risk, users ranked the probability that using SNS would not provide the level of benefits that they would expect, higher (mean 2.51) than the other four bottom risks. Social3 (think I am foolish)-risk i.e. some of the people whose opinion I value would think I was foolish if I signed up for SNS, was had the lowest mean (1.93). Users may not be concerned that SNS will not perform as expected and disagree that people would think they were foolish if they signed up for SNS. Psychological and social risks which are often suggested as highly relevant in SNS usage are not strongly perceived by the sampled users.

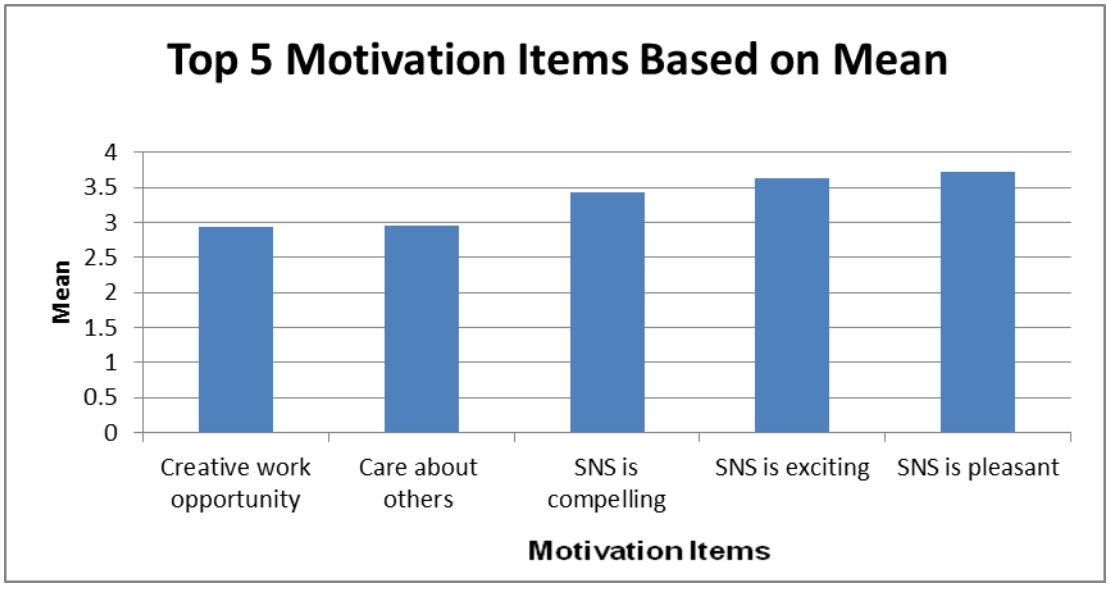

Figure 21: Graph of top 5 motivation items based on mean

Motivation items were ranked starting from lowest to highest mean. Figure 21 shows top five motivation items. Enjoyement3 (SNS is compelling) had the highest mean (3.72 out of 5). Users agree that using SNS is compelling. Actualization3 (creative work opportunity) had lowest mean (2.93) compared to the other four motivations. Users neither disagree nor agree that SNS gives them the opportunity for doing creative work or original work. The three enjoyment items in the top 5 motivations speak highly to the hedonic nature of SNS.

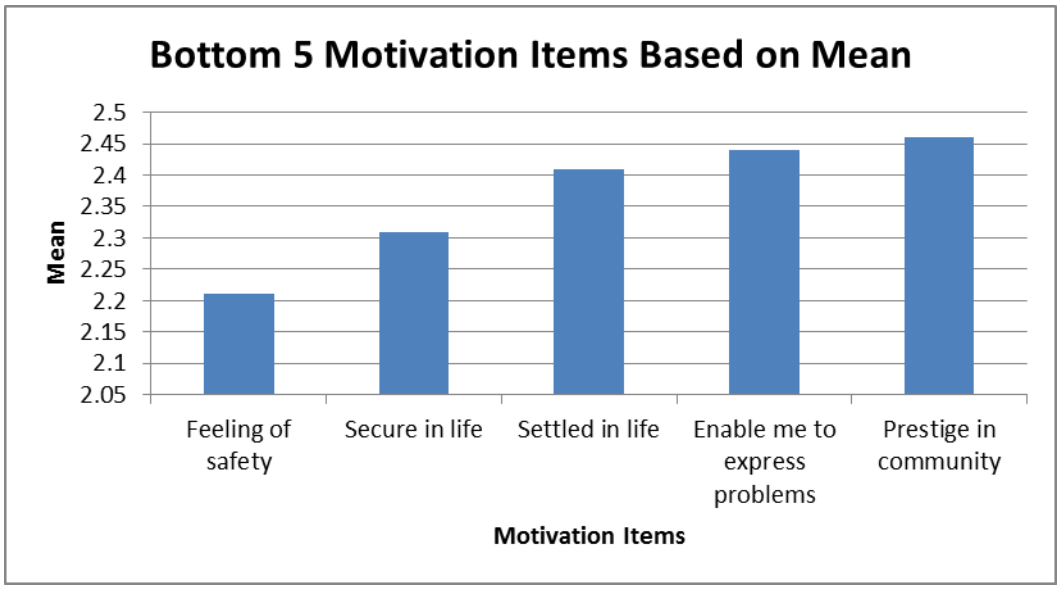

Figure 22: Graph of bottom 5 motivation items based on mean

Figure 22 shows bottom five motivation items, esteem3, is the highest mean (2.46) item in the bottom five list. Users disagree that SNS gives them recognition. Safety1 (feeling of safety), had the lowest mean (2.21) when compared to the other four. Users do not appear to recognise SNS as meeting their needs for safety in life.

4.3 Principal Component Analysis

Principal Component Analysis (PCA) was conducted in order to do a preliminary check on the validity of the construct measures i.e. to ensure that the items loaded adequately on the constructs they were intended to measure (Gefen et al., 2000; Soliman, 2012).

Multiple iterations of PCA were carried out and finally a stable solution emerged. The results are shown in Table 14. Usefulness3 and usefulness4 had to be dropped because of cross loading on perceived ease of use, psychological1 had to be dropped because it loaded below the minimum accepted loading of 0.40 (Gefen and Straub, 2005).

In addition to the removal of the above mentioned items, PCA iterations resulted in merging certain dimensions because their items were loading on the same factor. Self-Actualization and Self Esteem items loaded on the same factor and these were therefore merged into one factor for subsequent analysis.

Motivation and risk dimensions were then reduced to composite scores. For motivation, composite score of self-actualization+self-esteem was created by averaging seven scale items (actualization1, actualization2, actualization3, actualization4, esteem1, esteem2 and esteem3). Composite score for enjoyment was created by averaging three scale items (enjoyment1, enjoyment2, enjoyment 3). Composite score for safety was created by averaging three scale items (safety1, safety2 and safety3) and composite score for need to belong was created by averaging four scale items (belong1, belong2, belong3 and belong4).

For risk dimensions, two scale items (psychological 2 and psychological 3) were averaged to create composite score for psychological risk. Three scale items (time1, time2 and time3) were averaged to create composite score for time risk. Composite score for social risk was created by averaging three scale items (social1, social2 and social3). Composite score for performance risk was created by averaging three scale items (performance1, performance2 and peformance3). Physical1, physical2 and physical3 scale items were averaged to create composite score for physical risk. Privacy1, privacy2 and privacy3 scale items were averaged to create composite score for privacy risk. Composite score for financial risk was created by averaging three scale items (finance1, finance2 and finance3).

Table 15 shows reliabilities for each of the scales. The reliabilities were calculated using only the items that survived the PCAs. For all constructs, the reliability (Cronbach) alphas were above the 0.70 threshold.

The analysis then proceeded to use PLS to perform further confirmatory tests of the measurement model and to test the hypothesized structural model. Reliabilities for each of the scales are reported below:

Table 14 : Principal Component Analysis results

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Usage1		0.786													
Usage2		0.646													
Usage3		0.838													
Usage4		0.772													
Usage5		0.779													
Usage6		0.712													
Intention1													0.839		
Intention2													0.848		
Intention3													0.589		
Usefulness1															0.653
Usefulness2															0.641
EaseOfUse1			0.846												
EaseOfUse2			0.866												
EaseOfUse3			0.816												
EaseOfUse4			0.842												
Psychological2														0.859	
Psychologica3														0.832	
Time1								0.863							
Time2								0.826							
Time3								0.812							
_Social1												0.818			
Social2												0.736			
Social3												0.68			
Performance1										0.791					
Performance2										0.788					
Performance3										0.805					
Physical1					0.873										
Physical2					0.897										
Physical3					0.823										
Privacy1									0.83						
Privacy2									0.889						
Privacy3									0.777						
Financial1						0.814									
Financial2						0.889									
Financial3						0.86									
Belong1				0.788											
Belong2				0.795											
Belong3				0.789											
Belong4				0.719											
Actualization1	0.69														
Actualization2	0.773														
Actualization3	0.712														
Actualization4	0.762														
Esteem1	0.707														
Esteem2	0.731														
Esteem3	0.662														
Enjoyment1											0.749				
Enjoyment2											0.807				
Enjoyment3											0.744				
Safety1							0.795								
Safety2							0.871								
Safety3							0.849								

Table 15: Table of reliabilities

Construct	No. of items after PCA	Cronbach's alpha
Usage	6	0.892
Behavioural Intention	4	0.855
Perceived Usefulness	2	0.797
Perceived Ease of use	4	0.913
Psychological risk	2	0.842
Time Risk	3	0.843
Social Risk	3	0.785
Performance Risk	3	0.825
Physical Risk	3	0.832
Financial Risk	3	0.879
Need to Belong	4	0.890
Esteem+ Actualization	7	0.913
Enjoyment	3	0.874
Safety	3	0.874

4.4 Confirmatory Analysis of the Measurement Model

Before assessing the measurement model, collinearity of the composite scores representing the risk factors, and collinearity of the composite scores for the motivation factors were assessed. This was necessary in order to confirm that the higher-order risk and motivation constructs could be modelled in the formative mode. Variance Inflation Factors (VIF) were calculated; results are shown in Table 16. All the values are well below the recommended value of 5, and multicollinearity is therefore not a concern. Consequently, the overall Risk construct was modelled in the formative mode. Also, potential for collinearity was assessed among the 4 factors of motivation, VIF we calculated and results are shown in Table 17. The values were below the recommended value of 5 and collinearity is therefore not a concern. Consequently, the overall Motivation construct was modelled in the formative mode.

Table 16: VIF for Risk

	Tolerance	VIF
Composite_Psychological	.770	1.299
Composite_Social	.802	1.246
CompositeTIME	.858	1.166
Composite_Performance	.727	1.376
Composite_Physical	.758	1.319
Composite_Privacy	.822	1.217
Composite_Finance	.786	1.272

Table 17 : VIF for Motivation

	Tolerance	VIF
Composite_Belong	.599	1.670
Composite_Enjoyment	.724	1.381
Composite_Safety	.666	1.502
Composite_Actualizatio+Esteem	.448	2.231

For the measurement model, the study has formative and reflective constructs. Convergent validity, discriminate validity and reliability will be used for measurement quality of reflective constructs. Factor loadings for convergent validity has to be 0.60 or above (Bagozzi and Yi, 1998). All indicators (reflective) in the study loaded above 0.60, the lowest loading was 0.75. The original scale items surviving the earlier PCA analysis were used when modelling perceived usefulness, perceived ease of use, intention and usage. Table 18 shows outer loadings for reflective constructs (perceived usefulness, perceived ease of use, intention, and usage) and Table 19 shows weights for formative constructs (higher-order risk and motivation) generated in SmartPLS.

For reliability, composite reliability (CR) was considered and average variance extracted (AVE) were considered for convergent validity. CR was preferred since Cronbach's alpha often severely underestimate the internal consistency reliability of latent variables in PLS path models (Werts et al., 1974; Soliman, 2012). The CR and AVE are shown in Table 20. All the scales were reliable because they are above the 0.50 threshold for AVE and 0.70 for CR (Bagozzi and Yi, 1998).

Both loadings and cross loadings were used to assess discriminanat validity. Specifically, the loading of an indicator should be higher than all of that indicator's cross-loadings (Chin, 1998). In the loading and cross loading matrix (Table 21), all measurement items in our model met this criterion providing further evidence of the discriminant validity of our constructs. And also, the correlation matrix as shown in Table 22 can be used to assess

discriminant validity. In Table 22, the square root of the AVE of each construct should be higher than the inter-construct correlations i.e. the correlations between that construct and any other constructs (Luo et al., 2010; Gefen and Straub, 2005). The measurement model shows good levels of discriminant validity. Taken together, the measurement model has met reliability and validity requirements and testing of the structural model could proceed.

Table 18 : Outer Loadings

	Intention	PEOU	PU	Use
Intention1	0.8942			
Intention2	0.8983			
Intention3	0.8482			
EaseOfUse1		0.869		
EaseOfUse2		0.9221		
EaseOfUse3		0.856		
EaseOfUse4		0.9172		
Usefulness1			0.9153	
Usefulness2			0.9069	
Usage1				0.8219
Usage2				0.759
Usage3				0.8799
Usage4				0.7967
Usage5				0.8389
Usage6				0.7511

Table 19 : Outer Weights

	Motivation	Risk
Composite_Actualization+Esteem	-0.0059**	
Composite_Belong	0.4162	
Composite_Enjoyment	0.7781	
Composite_Safety	-0.0373**	
Composite_Finance		0.1368
Composite_Performance		-0.0777***
Composite_Physical		-0.1135***
Composite_Privacy		0.1648
Composite_Time		-0.4888***
Composite_Psychological		0.8378
Composite_Social		0.2158

** Not significant to the overall higher-order motivation construct and *** not significant to the overall higher-order risk construct

Table 20 : Composite Reliability and AVE

	AVE	Composite Reliability	Cronbachs Alpha	Communality	Redundancy
Intention	0.7753	0.9118	0.8556	0.7753	0.1309
Motivation	N/A	N/A	N/A	0.4819	N/A
PEOU	0.7949	0.9393	0.9137	0.7949	0.1075
PU	0.8302	0.9072	0.7955	0.8302	0.1247
Risk	N/A	N/A	N/A	0.1689	N/A
Use	0.6547	0.919	0.8937	0.6547	0.2051

**AVE are only relevant for reflective constructs

Table 21 : Item Cross Loadings

	Intention	Motivation	PEOU	PU	Risk	Use
Composite_Actualization+Esteem	0.3604	0.6285	0.1483	0.277	-0.1026	0.3872
Composite_Belong	0.3725	0.7104	0.1846	0.3337	-0.1315	0.3215
Composite_Enjoyment	0.3879	0.9294	0.4073	0.3904	-0.3699	0.4957
Composite_Finance	-0.1298	-0.0392	-0.0616	-0.1311	0.269	-0.1495
Composite_Performance	-0.0184	0.1163	-0.1367	-0.0433	0.1929	-0.0347
Composite_Physical	0.0318	0.0757	-0.0645	-0.0002	0.0449	-0.0198
Composite_Privacy	-0.1088	0.0122	-0.118	-0.0805	0.2696	-0.0632
Composite_Safety	0.2321	0.4051	0.1178	0.159	-0.0952	0.2183
Composite_Time	0.0866	0.2168	0.1207	0.1013	-0.2745	0.1145
Composite_Psychological	-0.2583	-0.2222	-0.3856	-0.297	0.8411	-0.2885
Composite_Social	-0.0415	-0.117	-0.2598	-0.1901	0.4636	-0.1865
Intention1	**0.8939**	0.366	0.3184	0.3864	-0.2925	0.4568
Intention2	**0.898**	0.397	0.2655	0.3674	-0.2158	0.4428
Intention3	**0.8487**	0.4093	0.3207	0.4486	-0.2915	0.5635
EaseOfUse1	0.2347	0.2752	**0.8697**	0.4957	-0.3943	0.3026
EaseOfUse2	0.3067	0.3384	**0.9221**	0.5189	-0.4096	0.3888
EaseOfUse3	0.3023	0.3593	**0.8555**	0.4364	-0.3606	0.3884
EaseOfUse4	0.3746	0.4037	**0.9171**	0.5441	-0.429	0.3955
Usefulness1	0.4114	0.3811	0.5519	**0.9147**	-0.3326	0.3909
Usefulness2	0.4266	0.4123	0.4699	**0.9076**	-0.3365	0.413
Usage1	0.4317	0.3802	0.3998	0.3794	-0.3352	**0.8219**
Usage2	0.4512	0.4076	0.3694	0.3898	-0.3398	**0.759**
Usage3	0.4892	0.4206	0.3893	0.3995	-0.3652	**0.8799**
Usage4	0.4612	0.4165	0.2676	0.2836	-0.2097	**0.7967**
Usage5	0.4769	0.4442	0.3175	0.3639	-0.2971	**0.8389**
Usage6	0.4038	0.4	0.2669	0.3214	-0.2099	**0.7511**

Table 22 : Inter-correlation of the latent variable

	Intention	Motivation	PEOU	USEFULNESS	Risk	Use
Intention	**0.8804544**					
Motivation	0.4462	N/A				
PEOU	0.3478	0.3916	**0.8911229**			
USEFULNESS	0.4601	0.4359	0.5582	**0.9110982**		
Risk	-0.1555	-0.1166	-0.253	-0.2262	N/A	
Use	0.5606	0.5092	0.4175	0.4415	-0.1788	**0.8091353**

*SqRTof AVE on the diagonal for reflective constructs only

4.5 Structural Model and Hypotheses Testing

Having confirmed adequate convergent and discriminant validity, and scale reliability, and having ensured the absence of multicollinearity amongst the formative indicators, the PLS structural model could then be tested.

In the first run of the structural model, it was found that time, physical and performance risk factors were not significant to the higher-order risk construct, (see Table 19 and Appendix I). Moreover, motivation factors, actualization + esteem and safety were not significant to the higher-order motivation construct and had to be dropped. It was therefore decided to drop those dimensions of risk and motivation and to re-run the structural model for the second time (see Figure 20).

The inner (structural) model was assessed using the co-efficient of determination (R^2) of dependent variables (Henseler et al., 2009). The (R^2) values specify the amount of variance explained by the model or predictive power of the model and these (R^2) values are reflected in the circle representing each endogenous variable (Figure 20). As shown in Figure 20, the model explains 29% of variance in intention, 26% in perceived ease of use, 37% in perceived usefulness and 31% in actual use. Drawing from Chin (1998) and Henseler et al. (2009), (R^2) of 69% is substantial, 33% is moderate and 20% is weak. 'Moderate' (R^2) for endogenous variables are acceptable if the variable is explained by only one or two exogenous variables. In Figure 20, (R^2) for use is 31% which suggests a moderate acceptable explanatory power for the model.

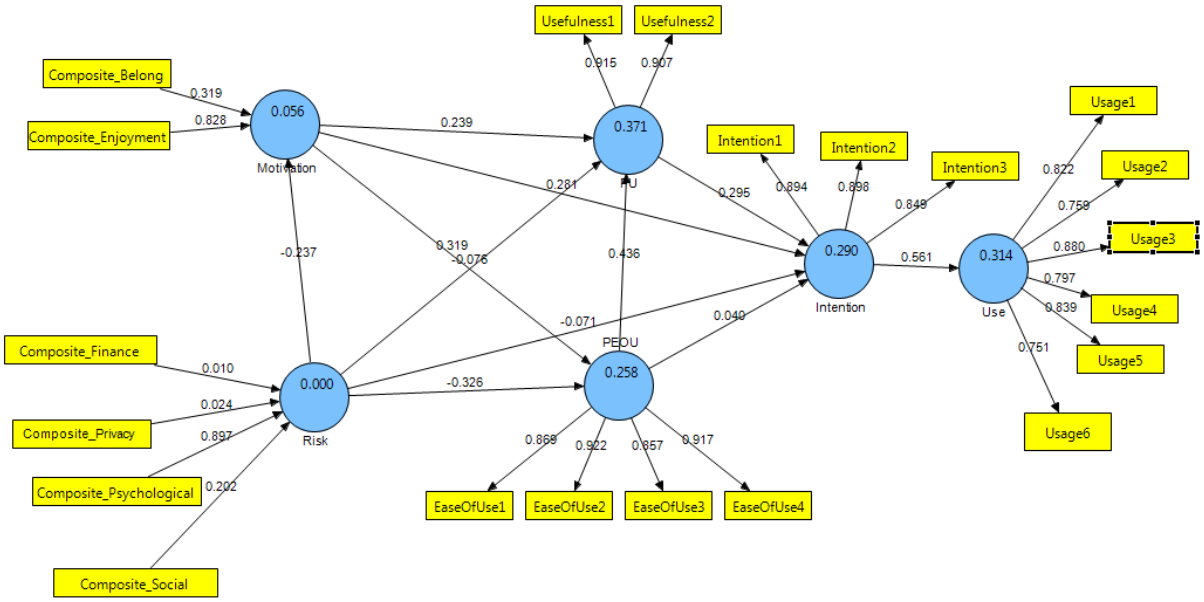

Figure 23: Structural Model

A bootstrap technique with 1000 resamples was performed to estimate significance of the paths by calculating t-statistics. Table 23 shows the results of the bootstrap analysis.

The effect of motivation on intention is significant (β=0.281, p<0.001). Thus hypothesis 8 was supported. The higher the individual's motivations, i.e. their need to belong and to experience enjoyment, the more likely they will want to use the SNS.

Motivation also has a direct effect on perceived usefulness (β=0.239, p<0.001) and perceived ease of use (β=0.319, p<0.01). Thus hypotheses 9 and 10 are also supported. Individuals are more likely to consider SNS useful if it fulfils their needs for belonging and enjoyment, and they are more likely to perceive SNS as easy to use, if it is need fulfilling.

The effect of risk on intention is significant (β=-0.071, p<0.05). Hypothesis 5 was supported. Users will be discouraged by risk in the use of SNS. The higher the risk the less likely users will use SNS.

Risk also has effect on perceived usefulness (β=-0.076, p<0.05) and perceived ease of use (β=-0.326, p<0.001). Thus, Hypotheses 6 and 7 are supported. If users are not to going to use certain parts/features of the SNS because they are afraid of taking risks, then users will not perceive the SNS useful. Also if users mitigate and cope with risks by spend more time paying attention and being vigilant when using SNS, then they may perceive it to be less easy to use.

Perceived usefulness was found to have a significant effect on intention (β=0.295, p<0.001), thus hypothesis 2 is supported. If SNS is useful to the user then their intention to use it will be high.

Perceived ease of use was not found to have a significant effect on intention (β=0.039, P>0.01). Hypothesis 3 is rejected. However, perceived ease of use has a significant effect on PU (β=0.4362, p<0.001). This supports hypothesis 4, confirming that if using an SNS is easy then users will find it useful. Perceived usefulness thus mediates the effects of perceived ease of use on subsequent behavioural intentions. H3 is thus the only hypothesis rejected.

Table 23 : Bootstrap Output

	Hypotheses No.	Original Sample (O)	T Statistics (|O/STERR|)	P-Value	Result	Significance Level
Intention -> Use	1	0.5607	17.2751	0.000000000	Accepted	p<0.001
PU -> Intention	2	0.295	5.9998	0.000000007	Accepted	p<0.001
PEOU -> Intention	3	0.0396	0.7427	0.482499190	Rejected	p>0.01
PEOU ->PU	4	0.4362	8.2842	0.000000000	Accepted	p<0.001
Risk -> Intention	5	-0.0707	1.4864	0.047198692	Accepted	p<0.05
Risk ->PU	6	-0.0764	1.7411	0.039605748	Accepted	p<0.05
Risk -> PEOU	7	-0.3265	7.2396	0.000000000	Accepted	p<0.001
Motivation -> Intention	8	0.2809	6.012	0.000000045	Accepted	p<0.001
Motivation ->PU	9	0.2387	5.4828	0.000000086	Accepted	p<0.001
Motivation -> PEOU	10	0.319	7.0637	0.000000009	Accepted	p<0.001
Risk -> Motivation	11	-0.2367	4.5925	0.000009140	Accepted	p<0.001

In addition, the researcher went further to assess the relationship between risk and motivation (hypothesis 11), risk was found to have a negative effect on motivation as shown in Table 23 and in Figure 20 of the structural model. Risk reduces motivation.

4.6 Impact of Gender on SNS use

Subgroup analysis, as shown in Table 24 was used to test for the impact of gender on use of SNS. The differences between the paths coefficients in the two groups were calculated using the formula by Chin (2004). The differences in the path coefficients were not significant except for two paths. Specifically, the results show statistically significant differences in the effects of motivation on perceived usefulness and perceived ease of use between males and females. Motivation has a stronger effect on perceived ease of use for males than females. In contrast, motivation has a stronger effect on perceived usefulness for females than males. The implications of this finding are explored further in the next chapter.

Table 24 : Impact of gender on SNS use

	Female		Male			Difference between paths
	Original Sample (O)	Standard Error (STERR)	Original Sample (O)	Standard Error (STERR)	T Stats	P value
Intention -> Use	0.5893	0.0359	0.4841	0.0666	1.395	0.164
Motivation -> Intention	0.2097	0.0514	0.2501	0.1161	0.319	0.75
Motivation -> PEOU	0.2406	0.0502	0.5175	0.0735	0.312	0.002
Motivation -> PU	0.4082	0.0442	0.1814	0.0896	2.277	0.024
PEOU -> Intention	0.0359	0.0545	-0.0694	0.1245	0.777	0.438
PEOU -> PU	0.4025	0.053	0.4827	0.116	0.631	0.529
PU -> Intention	0.4071	0.0527	0.3532	0.1003	0.477	0.634
Risk -> Intention	-0.0764	0.0479	-0.0241	0.1577	0.318	0.751
Risk -> Motivation	-0.2715	0.0621	-0.0975	0.1085	1.396	0.164
Risk -> PEOU	-0.3585	0.0532	-0.2805	0.0844	0.784	0.434
Risk -> PU	-0.0371	0.0505	-0.0975	0.0784	0.65	0.517

4.7 Risk and Motivation on Usage

Figure 24 examines the impact of risk and motivation directly on usage, i.e. without considering intention as an intervening variable.

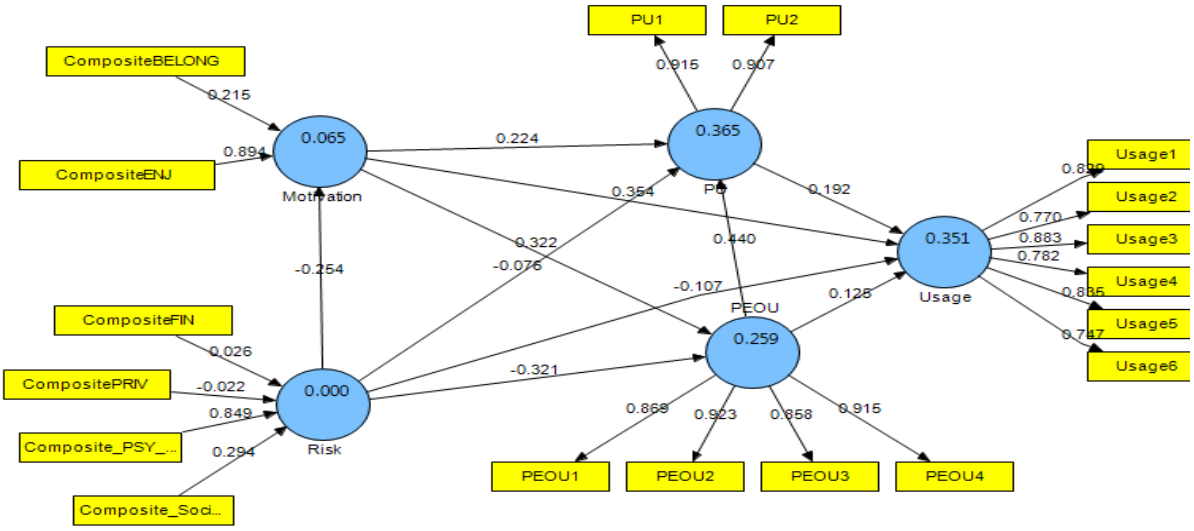

Figure 24: Model with intention excluded

Table 25: Table of effects

	Usage	P Value
Motivation -> Usage	0.354	p<0.0001
Motivation -> PEOU	0.322	p<0.0001
Motivation -> PU	0.224	p<0.0001
PU -> Usage	0.192	p<0.0001
PEOU -> Usage	0.125	p<0.0001
PEOU -> PU	0.44	p<0.0001
Risk -> PEOU	-0.321	p<0.0001
Risk -> PU	-0.076	p<0.0001
Risk -> Usage	-0.107	p<0.0001
Risk -> Motivation	-0.254	p<0.0001

The significance of the path-coefficients is shown in Table 25. It was found that motivation has a strong positive effect (β=0.354) on usage. This is stronger than its effect on intention (β=0.281). This shows that when users are motivated, their SNS usage increases.

Risk has significant effect on usage (β=-0.107). This is stronger than its effect on intention (β=-0.071). Users who perceive potential loss in using SNS will have lower usage levels but have higher levels of intentions to use SNS.

The effect of perceived usefulness on usage is lower (β=0.192) but effect of perceived ease of use is significant (β=0.125). The results show that when users are actually using the SNS, the way users perceive the SNS to be useful may reduce their levels of usage. Also, the way they perceive the ease of use of the SNS may significantly affect the SNS usage. Perceived usefulness effect is stronger on intention, while both perceived usefulness and perceived ease of use are stronger for actual usage.

The effect of risk (β=-0.135) and motivation (β=0.309) on actual usage remain significant and are thus partially mediated by intention (Appendix J).

4.8 Conclusion

This chapter organizes and reports the study's main findings, including the presentation of relevant quantitative data, data preparation, demographics data, principal component analysis, confirmatory analysis of measurement model and structural and hypothesis testing. This included tests for convergent and discriminant validity, and scale reliability. The chapter then includes the results of the test of the structural model using partial least squares analysis, which was used to accept or reject the study's hypotheses.

Table 26 Outcomes of the hypothesis testing

	Hypotheses No.	Result
Intention -> Use	1	Accepted
PU -> Intention	2	Accepted
PEOU -> Intention	3	Rejected
PEOU ->PU	4	Accepted
Risk -> Intention	5	Accepted
Risk ->PU	6	Accepted
Risk -> PEOU	7	Accepted
Motivation -> Intention	8	Accepted
Motivation ->PU	9	Accepted
Motivation -> PEOU	10	Accepted
Risk -> Motivation	11	Accepted

Table 26 is a summary of the outcomes of the test of the hypotheses.

The next chapter presents the conclusions.

CHAPTER 5 – DISCUSSION

5.0 Introduction

The purpose of the study was to understand how risk and motivation perceptions influence the use of social network sites. The study examined the influence of risk and motivation on behavioural intentions and use of SNS. TAM, risk and motivation were integrated into a research model that was tested to help us gain better understanding of SNS adoption and use.

This chapter discusses the results of this study. The chapter also provides the base for implications and recommendations, which will be discussed in the next chapter.

5.1 Interpretation of Demographics Data

Social Network Sites are an established form of media and used for different purposes such as communication and sharing of information. However, little is known about the decision making process pertaining to the adoption of SNS particularly by university students and more specifically how motivation and risk influence the use of SNS. Based on theory of technology acceptance, motivation and risk perceptions, the researcher developed a research model and tested it using data collected from a survey of 515 university students.

A majority of the respondents were female (73.8%) and this is a reflection of the gender ratios at University of the Witwatersrand, Johannesburg where 57% of the total student community are females. Studies have shown that females are more likely to join and use SNS than males, and therefore the subject of this study may have been more relevant and interesting to females (Wilson et al., 2010).

Students registered in Faculty of Commerce, Law and Management constituted a larger proportion of the sample and Science had the lowest. This a reflection of the enrolment figures across faculties at university. The participants included students both in residence as well as those in off-campus accommodation.

Respondents (62%) firstly engaged in SNS at the ages of 14-15 and only a small number (14%) engage late at the age of 18. These findings support Wilson et al.'s (2010) assertion that individuals engage in SNS at an early age.

Majority of SNS users are university students who are between the ages of 18 and 23 (Wilson et al., 2010; Soliman, 2012) and respondents in this study are within the age bracket described by other researchers. These findings suggest that university students participate in SNS at a much higher rate than the overall population, which may be explained by a number of factors, such as being better educated, having greater internet access, an ability to use the internet more frequently, and to participate in social activities that have acquired mainstream popularity (Prensky, 2001).

The new generation or youth is considered the digital generation (Vahlberg et al., 2008), and this is consistent with this study's finding that 66% of the respondents are 'always on' and that they access digital applications like SNS mostly using a phone (80% of the time). The findings confirmed what other researchers have found (e.g. Pelling et al., 2009). The numbers of college students using SNS has grown up tremendously (Sheldon et al., 2011) and majority of SNS use involve chatting, messaging and sharing posts (Ernst et al., 2013; Charnigo and Barnett-Ellis, 2007; Ellison et al., 2007). Participants reported connecting with others, getting information, sharing thoughts as features making SNS useful for them.

One of the main concerns about SNS is the risk involved in using SNS (Lo, 2010), and 91% of respondents have their photos on their profiles and have more than 300 friends on SNS and this is somehow different from Johnston et al. (2013) who found majority of the respondents reveal their number or email on their profiles and have 101 to 200 friends on SNS. Several important contextual considerations may account for these discrepancies. These may include the fact that the study is at least 3 years later and thus growth in popularity may explain increased number of friends. The other reason may be that users may be somewhat more vigilant now and removing phone numbers, and that the posting of photos has become more common use of SNS as mobile phone functionality has improved and provided the capabilities required to do this.

Facebook has been found to be the most used SNS in the world followed by Twitter (Arrington 2009a; 2009b; Lenhart, Purcell, Smith, and Zickuhr, 2010) and the same was found in the study. The assertions made by (Dahlstrom et al., 2013) regarding SNS use are aligned with the findings of this study. The study went further and found how risk and motivation influence use of SNS.

5.2 Perceived usefulness and perceived ease of use in the use of SNS

Perceived usefulness and perceived ease of use play a great role in the intention to use SNS (Alarcón-del-Amo et al., 2012). Perceived usefulness was found to have a strong effect on behavioral intention to use SNS (Hypothesis 2). Users have intentions to use SNS that are useful (Gefen, 2000). Users will have intentions to use SNS provided the SNS is useful and makes it easy for them to communicate and share information.

Perceived ease of use of the SNS was not found to influence behavioural intention to use SNS (Hypothesis 3). The findings of Alarcón-del-Amo et al. (2012) and several other TAM studies (e.g., Karahanna et al.,1999) are consistent with this study findings. Users are the digital generation-they use internet, and they are exposed and use digital appliance such as computers, cellphones and this make it easy for them to use SNS. The issue of difficult to use does not influence their intentions directly. However, perceived ease of use does influence perceived usefulness (Hypothesis 4), and it was found important to actual usage. This was also found in other studies such as Alarcón-del-Amo et al. (2012) and Hu et al. (2011).

5.3 The role of motivation and risk in SNS use

The findings related to the effects of motivation are discussed next.

5.3.1 The role of Motivation in SNS use

Use of SNS is influenced by different motivations such as enjoyment, need to belong, self-esteem and others. This finding is consistent across different studies (Hardin, 2010; Sledgianowski and Kulviwat, 2009; Wakefiled and Whitten, 2006) and confirms hedonic motivations for SNS use (Ernst et al., 2013). Five motivations were adopted from Maslow's hierarchy of needs; need to belong, need to safety, self-actualization, self-esteem and enjoyment was added to cater for the enjoyment/happiness (Sheldon et al., 2011). Inclusion of motivation as multi-dimensional construct helped in understanding better the impact of motivation in SNS use. Need to belong and enjoyment contributed more than safety, self-esteem and self-actualization to the overall motivation construct.

Self-actualization and self-esteem were found to be measuring the same factor, this resulted in these motivations being combined into a single construct, and thus the model was examined with four motivation factors. From the four, need to belong and enjoyment were found to contribute to overall motivation more than safety and self-esteem+self-actualization. University students do not see safety and self-esteem+ self-actualization as key factors in motivation to use SNS. As for the need to belong and enjoyment, the study was consistent with other studies which found the two motivations to be highly contributing to overall motivation (Curras-Perez et al., 2013; Gangadharbatla, 2008; Sheldon et al., 2011; Ventekash at al., 2002).

Motivation was found to be important to use of SNS (MacInnis et al., 1991). The study found that motivation influenced perceived usefulness and perceived ease of use. Hypothesis 4, which posits that motivation influences perceived usefulness, was supported and this supports findings from elsewhere (Ernst et al., 2013; Venkatesh and Bala, 2008; Venkatesh and Davis, 2000). This may be due to the reason that respondents are motivated to use SNS thus they find it useful when they need to get in touch with friends and family. Also as the respondents enjoy using SNS, they find it useful.

Motivation also influence perceived ease of use of SNS (Venkatesh, 2000) and the study came to the same conclusion (Hypothesis 3). Respondents find SNS to be easy to use because they are enjoying using it (Venkatesh, Speier and Morris, 2000). Venkatesh et al. (2002) posited that individuals who are motivated may use technology for the enjoyment of the activity and, since they enjoy the process, they may downplay or not perceive much difficulty and thus find it easy to use.

Hypothesis 2, which posits that motivation influence behavioral intention to use SNS was supported, the findings are in line with findings by Davis et al. (1992) and others such as Van de Heijden (2004) who suggested that motivation has a positive influence on intentions to use pleasure-oriented information systems like SNS. Motivational needs can influence the decision making process (Kanfer, 1991). Respondents' motivations such as need to belong

i.e. to let out feelings, to express their problems, to talk to others and enjoyment i.e. finding SNS to be exciting, compelling and pleasant have influenced their intention to use SNS.

Motivation was also found to have a direct effect on actual usage. The salience of motivations in SNS usage has thus been confirmed. Motivation was found to positively influence perceived usefulness, perceived ease of use, and behavioural intention and actual use of SNS. Based on the findings, future research should consider motivation when examining use of hedonic technologies such as SNS. Users' perceptions of usefulness and ease to use of SNS are influenced by motivation. When users find SNS to be fulfilling their individual needs for enjoyment and belonging, they will perceive the SNS to be useful and easy to use. This will result in users having intentions to use the SNS.

In addition to the above discussed findings and discussions, the research examined the impact of gender on SNS use. It was found that the effects of motivation on usefulness are strongest amongst females, and the effects on ease of use amongst males. Females have been found to spend time using different features of SNS. They share photos, videos and chat on SNS. They have found SNS to meet their related goal-driven needs (Shen and Khalifa, 2010). SNS utility meets females' needs such as to connect with other people, to get information and make new friends. Thus, when they are motivated i.e. need to express their problems to others who will help or let out emotions, they find SNS to be a useful tool because it makes it possible for them to connect with other people, to get information and make new friends. In contrast, males are using SNS because they are ease to use. If SNS required extra effort, it may be possible that males could not be using them at the same rate they are using them now. Therefore, when males are motivated i.e. talk to others when lonely, they will talk to them through SNS because it requires less effort to do so.

Practically, SNS providers should provide SNS which are enjoyable to use and make it possible for users to communication with family and friends. For example, SNS providers may include the instant messaging feature in SNS. In future SNS may be designed to provide better for safety, self-esteem and self-actualization needs. For example, for users who are looking for employment (safety needs), LinkedIn is the only SNS that is trying to provide for safety needs such as employment.

5.3.2 The role of Risk in SNS use

Some researchers have studied the impact of risk by conceptualizing risk as single dimension. This study has however shown that the impact of risk on the use of SNS can be better understood by conceptualizing it as a multi-dimensional construct in the use of SNS. Seven dimensions of risks were adopted from Luo et al. (2010) and Fatherman and Pavlou (2003). Overall risk was formed by seven dimensions of risk.

Psychological risk and social risk contributed more than finance and privacy risk to the overall risk construct. Risk was found to negatively influence perceived usefulness, perceived ease of use and intention to use SNS. The influence of risk on perceived usefulness, perceived ease of use and intention should be considered when examining adoption and use of SNS.

Risk has been found to influence, perceived usefulness, perceived ease of use and intention to use (Featherman and Wells, 2004; Pavlou, 2003; Lee, 2009). The study found that risk perceptions lower perceived usefulness (Hypothesis 6). Respondents find SNS not that useful if the risk is high (Lu et al., 2005; Lee, 2009). Respondents may end up not using certain features of the SNS because they are wary of the risks thus not find the SNS useful in helping them in completing certain tasks. It was also found that risk perceptions are also reducing motivation and thereby further impacting perceived usefulness.

Risk was also found to negatively influence perceived ease of use (Hypothesis 7). This finding supports results by Li (2011), Lu et al. (2005), Lee (2009) and Featherman and Wells (2004). Respondents find that risk makes it difficult for them to perceive the SNS as effortless. Risk will push users to check details, give special intention to all aspects and monitor actions thus increasing the effort required to use SNS (Curra-Perez et al., 2013; Chen, 2013; Lu et al., 2010; Trepte and Reinecke, 2013). The relationship between risk and perceived ease of use may be a due to users compensating for perceived risks by taking their time, acting cautiously and paying attention to each click (or button in the SNS). Inclusion of mechanisms such as user permissions as efforts to mitigate risks may be making SNS less easy to use.

The study found that risk influences behavioral intention to use SNS (Hypothesis 5) and the findings corroborates studies by van der Heijden (2003) and Pavlou (2003). Users will be skeptical to use or have intentions to use SNS if the use of the SNS will result in some sort of loss. If the risks are high, intention to use will be low. Using SNS may result in embarrassment before a social group (social risk), low self-image (psychological risk), loss of finance (finance risk) and loss of privacy (privacy risk). Based on the mentioned risks, SNS user may have lower intentions to use SNS and lower actual usage behaviours.

Practically, SNS providers should consider mitigating the risks involved in SNS use. SNS providers have tried mitigating privacy risks by having username and password as requirements for logging into a profile. Further mitigations such as different permission levels for different friends on profiles can help. Friends can be segmented into categories, for example, those who can view different personal data, those who can view the name and picture and those who can view the name only. SNS could have confirmation options that ensure that users have thought about the potential for a post to cause embarrassment within a social group.

Using SNS increase the probability of psychological risk such as depression. Users consume information about other users, and they end up comparing themselves to those users. Seeing other users' photos and posts may lead to depression (Tandoc et al., 2015). For example, a post by a peer may create feeling of discomfort or anxiety. Users may spend less time on SNS or be less active as a way to avoid seeing these psychological risks. Similarly, users may reduce psychological risks, by spending less time on SNS.

5.4 Risk versus Motivations

Another reason for undertaking the study was to understand the tension between risk and motivation in the use of SNS. Both risk and motivation have significant effects on intention and use. However, it was found that motivation (β=0.281, $p<0.001$) has a stronger effect than risk (β=-0.071, $p<0.05$) on behavioural intention to use SNS, and a stronger effect on actual use than risk. However, the risk appears to reduce motivations (β=-0.237, $p<0.001$) as per figure 14. Thus risk perceptions can reduce motivations.

Users in their decision making process have to grapple with balancing risks and motivations. Users have shown reluctance to sign up or use SNS primarily due to risk concerns and thus risk is posited as prominent barrier to users' acceptance of online sites (Chen, 2013). Contrary, these online sites fulfil users' needs such as the need to belong, enjoyment, self-actualization and self-esteem (Hardin, 2010).

Based on the results, motivation is influencing intention to use SNS more than risk. Users who are motivated to use SNS may be willing to overcome the risks associated with using SNS in order to derive motivational benefits. They may compensate for risks through added vigilance. Yet risk perceptions can have a negative influence on motivation, when users are exposed to risk they may be less motivated. For example, if a user perceives high privacy or social risks when using SNS, they may not enjoy using it as much as individuals less concerned by such risks.

5.5 Conclusion

This chapter presented a discussion of the significant results of this study. It discussed demographic characteristics of the respondents, perceived usefulness and perceived ease of use, effects of risk and motivation and how risk and motivation play-out in SNS use. The chapter also provides the base for implications and recommendations, which will be discussed in the next chapter.

The chapter presented the discussions of the study and the next chapter presents the conclusions.

CHAPTER 6 – CONCLUSION

6.0 Introduction

This chapter presents conclusions, limitations, implications and recommendations. The objectives of this study were to propose and then test a model of how motivation and risk perceptions influence the use of social network sites among university students. This was to understand how risk and motivation combine to effect intention, examine their relative effects and better understand how the tension between risk and motivation plays out in SNS use.

6.1 Summary of the Study

A review of the literature revealed that the impetus for use of SNS can be need fulfilment such as enjoyment, need to belong, safety, self-actualization and self-esteem (Ross et al, 2009). SNS provide users with the opportunity to let out emotions easily to others, to express problems, gives users the opportunity for personal growth and development, gives them recognition, it is exciting, pleasing and also gives users a feeling of safety (Lenhart and Madden, 2007).

On the other hand, there are risks associated with SNS usage. These result from disclosure of private information, risks of cyber-stalking, posting offensive or inappropriate comments, risks of viruses or spyware resulting from clicking a link on SNS, risks to self-image that result from certain comments on SNS and financial risks resulting from data bundles usage (Chen, 2013; Grieve et al., 2013; Kuss et al., 2013; Litt, 2013; Trepte and Reinecke, 2013).

Thus the growth in SNS adoption and its high degree of usage amongst the youth is an interesting phenomenon to understand, especially when one considers the risks involved in using SNS.

This study therefore aimed to address the research problem of *how motivation and risk perceptions influence the use of social network sites amongst university students*.

To address this objective, this study drew on theories of motivation and risk to develop an extended technology acceptance model (TAM). Motivation was conceptualized as multi-dimensional construct with need to belong, enjoyment, self-actualization, self-esteem and safety as dimensions. Risk was conceptualized as multi-dimensional construct with time, privacy, physical, social, performance, psychological and financial risk as dimensions. Eleven hypotheses were formulated linking motivation, risk, perceived usefulness, perceived ease of use, behavioural intention and actual usage.

To test this model, a questionnaire was administered to a sample of 515 students from University of the Witwatersrand, Johannesburg. The measurement scales were adopted from existing literature in the areas of technology adoption, motivation and risk. Pre-test by faculty members and a pilot test were carried out to improve the instrument. Principal component

analysis and confirmatory analysis were used for validity and reliability. PLS approach was used to test the hypothesized structural model.

The sampled SNS users describe themselves as mostly "always on" and have started using SNS early in their lives. Facebook is the most used SNS, and photos of the users are displayed on their profile. Mobile devices such as cellphones make it easy for users to access SNS. The study found that social and psychological risk contributed more than finance and privacy risk towards overall risk. On the other hand, enjoyment and need to belong contributed more towards overall motivation and combined self-esteem and self-actualization and safety contributed less. Results showed that risk and motivation were significant in influencing intention to use, perceived ease of use and usefulness of SNS. Furthermore, motivation had the highest effect on intentions compared to risk.

Results show that SNS use is high despite the risk involved, and this is because motivations are so strong. Findings confirm that the use of SNS, as a hedonic form of technology, is largely influenced by individual motivations (Ventekash and Ramesh, 2002; Ernst et al., 2013). Risks lower ease of use, while usefulness increases as motivational needs are met.

6.2 Implications of the study

This study contributes in different ways to research and practice.

6.2.1 Implication for Theory

Despite the limitations, this study provides a number of contributions to research. First, the study extended technology acceptance model by include risk and motivation construct. Risk and motivation are conceptualized as multi-dimensional constructs. The conceptualization of risk and motivation as multi-dimensional constructs presented various risks and motivations which may be important to SNS use. While previous studies have explained SNS use, addition of risk and motivation constructs is a step towards a better understanding of what actually makes a user to use SNS. This is important in the context of new online technologies such as SNS. It has been suggested that intention to use online new technologies such as SNS is influenced by the co-existence of dimensions of motivation and dimensions of risk (Soliman, 2012).

Secondly, the study developed a research model which is an extension of TAM. The model provides for a better understanding of SNS use. The model examines the relationship between risk, motivation, perceived usefulness, perceived ease of use and intention. In addition, the model examines combined effects of risk and motivation on intention and their relative effects on intention. Further, the model examines how risk and motivation interact or play out in the use of SNS.

The study included seven dimensions of risk and five dimensions of motivation. Maslow's (1950) hierarchy of need was adopted to specify the motivations. The findings showed that social and psychological risk contributed more to the overall risk construct. On the other side, enjoyment and need to belong contributed more to the overall motivation construct. Previous

studies only conceptualized intrinsic and extrinsic motivation (Venkatesh, 2000) or did not conceptualize risk and motivation as multi-dimension in the same model, or examine how the two interact when conceptualized as multi-dimensions in the same model. By including multi-dimensions, the study has therefore added to explanations for why students use SNS despite the risks associated with SNS.

Fourth, this study has contributed measures useful for future SNS research by adapting measures from different studies to the SNS context.

6.2.2 Implication for practice

The study has implication for SNS providers and users.

6.2.2.1 Implication for SNS providers

Majority of SNS users use Facebook. Other SNS providers may have to examine why most students prefer Facebook over other SNS. This may help SNS providers to understand the motivations influencing users or the risks users are avoiding by using a certain SNS over the other. The results of this study will provide SNS providers with information on risks and motivations influencing use of SNS.

The results of the study have shown managers and practitioners that there are multiple risks and motivations associated with SNS. Different risks and different motivations contribute differently to overall risk and overall motivations respectively. Risk was found to negatively influence intention to use the SNS and also reduce the motivation to use the SNS.

SNS providers can use the findings to identify which dimensions of motivation and risk are the most important to users, and how these dimensions influence users' intentions. After gaining an understanding, the SNS providers can try to improve the perception of risks of users. Low perception of risk can improve users' intentions to use SNS.

Motivation has a larger effect on SNS use. The results also show that risk reduces motivation. From the results, providers gain a more in-depth look at the needs of SNS users, and the values they believe are important, thus providing insights to both the design of their SNS and functionalities and the development of policies regarding, for example, privacy and about acceptable usage behavior. This knowledge can be used by providers to:

- provide SNS which fulfills different needs of the users i.e. enjoyment and need to belong
- mitigate the risks associated with SNS
- help users with coping mechanisms to mitigate the risk involved

In addition, the findings are that perceived usefulness influence intention more than perceived ease of use. Therefore, providers may have to design SNS which are more useful and less complex. Users should have a convincing reason to be using SNS despite the risks. SNS should be able to provide users with the opportunity to connect with other people, to get information, make new friends and share their thoughts and ideas with other people. Thus

users will have intention to use the SNS because of the stated reasons as opposed to ease of use.

Four dimensions i.e. psychological, financial, social and privacy risk were found to be contributing to the overall risk. Psychological risk had the highest contribution. Users may have to be warned that addictive use of SNS may expose them to psychological risk i.e. feeling anxious and tension. Therefore users have to be vigilant or avoid being addicted to SNS. SNS providers can develop SNS which do not lead to addictive tendencies as to avoid the psychological risk i.e. feeling anxious and tension which result from addiction.

Other communities such as teachers and counselor may find the results of the study important. They may use the results as a base for future studies which deal with SNS and psychological risk such as anxious feelings and tension.

Another risk was social risk. Users are concerned about what friends would think of them, if people will think they were foolish by signing up for SNS and if colleagues will hold them in high esteem when they subscribe for SNS. Users have to avoid posts or sharing information which may be received negatively by the SNS community. Posts received negatively by the community will result in the user being embarrassed and not being held in high esteem by colleagues. In future providers may make it possible for users to delete or control what other users post about them. Providers may sample content on SNS and delete whichever content they may deem inappropriate. Providers may sensitize users about the consequences of engaging in potential social risk activities when using SNS.

Privacy was an additional risk. It was found that privacy risk was important, and that losing control over personal information is upfront risk. Providers should develop ways to make SNS less prone to privacy risk. This might include a need for different authentication levels when users are logging to different features of the SNS. Also providers may discourage users to submit detailed personal information on SNS or providers may reduce the fields requiring personal information when users sign up. SNS can be improved to give users easier control over which information should be public and private.

Users were also concerned with financial risks. Users are spending money on data bundles so that they can access SNS. SNS providers may have to make SNS to load quickly especially on devices like cellphones and tabs. Reducing certain features, for example by developing a mobile device (e.g. cellphone) compatible version of the SNS will assist in reducing the SNS load time. This will result in SNS not taking long to load thus using less data. Using less data will result in users not spending more money buying data.

With the most important risk dimensions identified, SNS providers can now pay attention to identification of maximum acceptable risk thresholds for each risk dimension. The thresholds can help by providing a target to indicate to what level risk perceptions must be lowered to improve SNS use.

Providers may have to always update users regarding risks and mitigating mechanisms available. In future, providers may include users in the design and development of the SNS to

cater for their needs and build secure or low risk SNS. Also, SNS providers when developing SNS that is perceived to be risky, they may have to emphasize its usefulness and enjoyment. When users perceive the SNS to be low risk, SNS providers can emphasize its functionality.

Usually, users once they adopt the SNS, they perceive the risk to be less. SNS providers have to be wary of the possibility of users finding out later about the types and magnitude of risk involved. So, SNS providers have to continuously work on lessening the possibility of risk in using SNS.

6.2.2.2 Implication for Users

Users will gain better understanding of the risks associated with SNS use. Current members and future members of SNS will gain understanding of the different risks they are exposing or will be exposing themselves to when engaging in SNS.

Users will have to learn to read or to pay attention to user policies of SNS so as to understand the risks. Users will have to learn how to set up protection or privacy measures such as passwords for their profiles. This will mitigate the risks.

Users are posting their personal information on profiles and some of the profiles are public. So their personal information is easily accessible. Users display information such as contact numbers, home address and photos on their profiles. This makes them vulnerable to risks such as identity theft.

Sharing photos and videos is a good thing but users sometimes post photos and video which may be received negatively by the community. Users may suffer embarrassment due to the photos they post. For example, photos showing users drunk or offensive photos may result in people forming a bad opinion about the user. Users need to be more aware of potential for addiction, time wastage and that those SNS activities can influence how others perceive them.

SNS usage has been found to be high. SNS is an important everyday activity for users and it is part of their daily routine. Users may be losing considerable amount of time on SNS. It has been found users spend maximum of seven hours a day on SNS. Also users have been found to be “always on SNS”. This may translate to users not undertaking certain activities because of the SNS. It is recommended that where possible users should avoid spending high amounts of time on SNS. This will reduce the potential loss of time resulting from participating or doing SNS tasks.

But, it was found that SNS is a powerful platform that is helping youth to meet their need to belong. This is a very important motivation for use and many users are approaching the use of SNS with that motivation in mind. In addition, users are motivated to use an SNS because of the enjoyment experience they get. SNS can provide a powerful platform for realizing the need to belong and enjoyment. Users can use SNS to let out their emotions, express their problems, talk to others when lonely and express feelings. So SNS caters for their needs i.e. need to belong and the need to experience enjoyment.

SNS user numbers are growing despite the risk. Users can use SNS to meet their motivational needs, though it is associated with risk. However, this will require users to be vigilant when using SNS to avoid potential for a loss.

6.3 Limitations and Future Research

The study has limitations that must be acknowledged despite its contributions.

First, participation in the survey was limited to one university in the city of Johannesburg, South Africa. Therefore, the selected sample may not have been representative of the broader population of the South African students. Future studies should consider a much broader sampling to further validate results. The current results should be interpreted with caution for the larger population of the South African students. However, it is noted that researchers often use university students to explore various phenomena (Ernst et al., 2013; Luo et. al., 2010; Cocosila, 2009). Studies show little differences in findings between studies carried out in one versus many different universities (Ernst et al., 2013; Luo et. al., 2010; Cocosila, 2009; Soliman, 2012; Spell, 2014).

Second, the study concentrated on the 18-25 age groups. The exclusion of older students mainly masters and PhD necessitates further investigation. Inclusion of the older age group may give a different perspective to the conclusions of this study.

Thirdly, measurement still deserves attention as some scales were measured with only two items, and other scales such as actualization and self-esteem were merged.

Fourth, cross sectional studies have been found to have limitations (Vogt, 2006; Ajisafe, 2012). Data was collected only once using questionnaires. Quantitative, cross-sectional studies have limited generalizability because the respondents' behavior was not observed over time. Cross-sectional, survey studies may not be adequate to differentiate cause and effect as opposed to experiments because the preexisting conditions cannot be subjected to control (Daruvala, 2007; Ajisafe, 2012).

Fifth, respondents were self-reporting their perceptions of risk, motivation and behavioral intention. Therefore there is need to interpret findings with caution. Since respondents are self-reporting, there is a possibility of social desirability bias (Kloep, Güney, Cok and Simsek., 2009). In addition, questionnaires may have been filled in a hurry and there is a potential for respondents not to have answered questions honestly or may have been constrained to answer questions based on perceived expectations (Ajisafe, 2012). Quantitative studies lack the open-ended exploration and discussions possible in qualitative studies (Borrego, Douglas and Amelink, 2009). In future, other methods such as combining quantitative and qualitative methods may extract potential variables, which may help explain improved variance of the dependent variable.

There may be a social desirability bias and results may not be a true reflection of the respondents' perceptions of risk, motivation and intention. Also, certain questions may have an influence on other questions. For example, a respondents who answered that they are

‘always on’ SNS may select that they spend long hours on SNS, because answering in that pattern makes sense to them.

Sixth, the generalizability of the study may be limited by the demographics of the respondents. Respondents were SNS users only and those who were not users did not continue answering the questionnaire. In future, an investigation into perception of non-users regarding risk and motivation may yield additional insights.

Also the majority of users selected Facebook as their SNS. Results may be different for other SNS platforms.

6.4 Conclusion

To enhance our understanding of SNS adoption and use, this study examined the impact of risk and motivation on student use of SNS. The results of the study confirm that risk and motivation are salient factors in SNS use.

Risk was found to reduce motivation and perceptions of ease of use, while motivation was found to positively influence perceived usefulness, ease of use and intention. Motivation was found to have a larger effect on use compared to risk.

As a result of the study it has been established that although youth recognise risks when using social network sites, they are none-the-less motivated to use them to fulfil their needs for belonging and enjoyment. This has implications for us in understanding how youth can incorporate SNS in their life.

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APPENDICES

Appendix A: Past studies on SNS

Reference	Type of SNS	Type of Study	Motivation	Risk	Inter-relation between multi-dimensional risk and motivation	Contribution
Vandoninck, d'Haenens, De Cock and Donoso (2011)	SNS	Survey of high school students in Belgium	-	Privacy risk	-	SNS activity exposes users to risk
Lo (2010)	SNS	Survey of university students in the U.S.	-	Perceived risk	-	Perceived risk about SNSs in general appears to have a stronger impact on willingness to provide information
Dumlao and Ha (2013)	Twitter	Survey of Twitter users	-	Perceived risk	-	Perceived risk depended mainly on the utilitarian quality of tweets and tweet providers' intentions, Hedonic (enjoyment) quality of tweets influences use.
Dwyer, Hiltz and Passerini (2007)	Facebook and Myspace	Survey of Facebook and Myspace users	-	Privacy risk	-	More users willing to include identifying information
Pelling, Behav.Sc. and White (2009)	SNS	Survey of university youth (17-24years)	Need to belong	-	-	Belongingness significantly predict addictive tendencies toward SNS
Wilson, Fornasier, and White (2010)	SNS	Survey of youth (17-24) in Australian Universities	Self-esteem	-	-	Self-esteem factors significantly predict both level of SNS use and addictive tendency

Gangadharbatla (2008)	Facebook	Survey of South-western University (U.S.) students	Need to belong, self esteem	-	-	Need to belong, and collective self-esteem all have positive effects on attitudes toward SNS
Ernst et al. (2013)	SNS	Survey of students	Belonging, enjoyment	-	-	Perceived Belonging positively influences both Perceived Enjoyment and Perceived Usefulness
Leung (2013)	SNS	SNS users	Recognition, enjoyment	-	-	Facebook and blogs are normally used for social needs and need for affection
Park, Jin, and Jin (2011)	SNS	Survey of students at public university	need for affiliation and self-disclosure	-	-	The motivations for relationship maintenance and initiation affected intimacy
Chen (2015)	SNS	Random women bloggers	Enjoyment and self-actualization	-	-	Psychological needs for affiliation and self-disclosure are related to engagement
Sheldon, Abad and Hinsch (2011)	SNS	Psychology students at a university	relatedness needs	-	-	Facebook help people to meet their relatedness needs
Zhao, Lu, Wang, Chau and Zhang (2012)	SNS	Members of Taboo virtual community	Sense of belonging	-	-	Sense of belonging affects VC member participation in terms of intentions to get and share knowledge

Thammakoranonta, Chayawan, and Boonprakate (2011)	SNS	Residents in Bangkok	Belongingness and love needs, esteem needs and self-actualization needs			All three needs have effect on perceived ease of use, perceived usefulness and perceived encouragement
Li (2011)	SNS	Web users	Sociability , status and enjoyment	-	-	Social influence, , affects intention indirectly via the two interpersonal motives (sociability and status) and perceived enjoyment
Whitman, and Gottdiener (2015)	Facebook	Online population	Self-esteem, self-actualization	-		Higher levels of Facebook use appear to correlate with positive attributes such as low self-deception, mature coping, high self-esteem, and high actualization potential
Cao, Jiang, Oh, Li, Liao and Chen (2013)	SNS	Users of SNS service	Self-actualization	-	-	Fulfilment of self-actualization needs has a significant impact on continuance intention
Teräs, (2011)	SNS	Analysis of SNS services	Safety , self-actualization	-	-	Social media services mainly produce social life, creativity, and emotional values
Kim, Kim, and Nam (2010)	SNS	University students	social motivations	-	-	Self-construal is associated with social-motivations to use SNS

Hattingh, Buitendag, and Thompson (2014	Facebook	Users in South Africa	-	Privacy risk		The presence of a profile picture does not have such a big influence on acceptance rates, unlike gender, which did influence the likelihood of acceptance.
Iivari (2014)	SNS	Community of Facebook users	Enjoyment, perceived sociability	-	-	PSOU in the sense of maintaining social contacts is a significant predictor of Perceived Benefits (PB), Perceived Enjoyment (PE), attitude toward use and intention to use
Currás-Pérez, Ruiz-Mafé, and Sanz-Blas (2013)	SNS	SNS users	Sociability and enjoyment (motivation)	psychological, time and social (risk	Excluded self-actualization, self-esteem and security motivation, excluded privacy, physical, performance, and financial risk	Sociability and entertainment gratifications and perceived risks (psychological, time loss and social) are the main drivers of user attitude towards social networking sites
Forest, and Wood (2012)	SNS	Undergraduate Facebook users	Self -esteem	Privacy	Study discuses single dimension of risk and single dimension of motivation	People with low self-esteem considered Facebook an appealing venue for self-disclosure, the low positivity and high negativity of their disclosures elicited undesirable responses from other people
Cha (2010)	SNS	University students	Interpersonal utility motive	Privacy risk	Study discuses single dimension of	Students tend to use social Networking sites more often as

					risk and single dimension of motivation	they are younger, use the Internet more for interpersonal utility, have fewer privacy concerns, and perceive social networking Web sites as easy to use
Lorenzo-Romero, Constantinides, and Alarcón-del-Amo (2011)	SNS	Dutch SNS users	-	Risk	-	The ease of use has a negative influence on perceived risk, i.e. when perceived ease of use is greater, perceived risk will be lower. However, perceived risk of SNS is not a significant determinant of how useful is perceived the SNS
Lin and Liu (2012)	SNS	Facebook users	Social motivation and non-social motivation	Privacy risk	Study discuses single dimension of risk and single dimension of motivation -	Motivation accounts for a significant additional amount of variance in SNS use, privacy affect SNS use
Mohamed and Ahmad (2012)	SNS	University students	-	Privacy risk	-	Privacy concerns explain privacy measure use in SNS

Appendix B: Studies on Motivation

Reference	Type of IS	How motivation was studied	Empirical finding
Chemingui and Lallouna, (2013)	Mobile financial services	Enjoyment	Perceived enjoyment have a positive and a significant impact on intention to use such services
Oppenauer (2009)	Health Technology	Intrinsic and extrinsic motivation	Intrinsic and extrinsic motivation influence intention and use,
Ross et al. (2009)	Facebook	Motivation	Motivation to be an important factor that influences SNS use
Van der Heijden (2004)	Pleasure-oriented productivity oriented information systems	Enjoyment	Perceived enjoyment and perceived ease of use are stronger determinants of intentions to use than perceived usefulness.
Childers, Carr, Peck and Carson (2001)	New media	Enjoyment	Enjoyment influence use
Brandtzæg and Heim (2009)	SNS	Motivation	People often report many motivational reasons for using SNSs
Suki and Ramayah (2012)	Facebook	Enjoyment	Enjoyment influence use of SNS
Igbaria, Iivari and Maragahh (1995)	Computer technology	Enjoyment and extrinsic motivation	Extrinsic motivation plays a greater role in individuals' behaviour, enjoyment affect intention
Lee, Cheung and Chen (2005)	Internet based learning medium	Intrinsic and Extrinsic motivation	Both motivations significantly and directly impacted their intention to us
Thielke, Harniss, Thompson, Patel, Demiris, and Johnson (2012)	Health related technologies	Maslow's needs (all)	All the five Maslow's needs influence adoption of technology
Cook, Ley, Crawford and Warner (2009)	E-learning	Intrinsic and extrinsic	Most faculty motivation studies of DE and e-learning courses point out that intrinsic motivators, such as the desire to

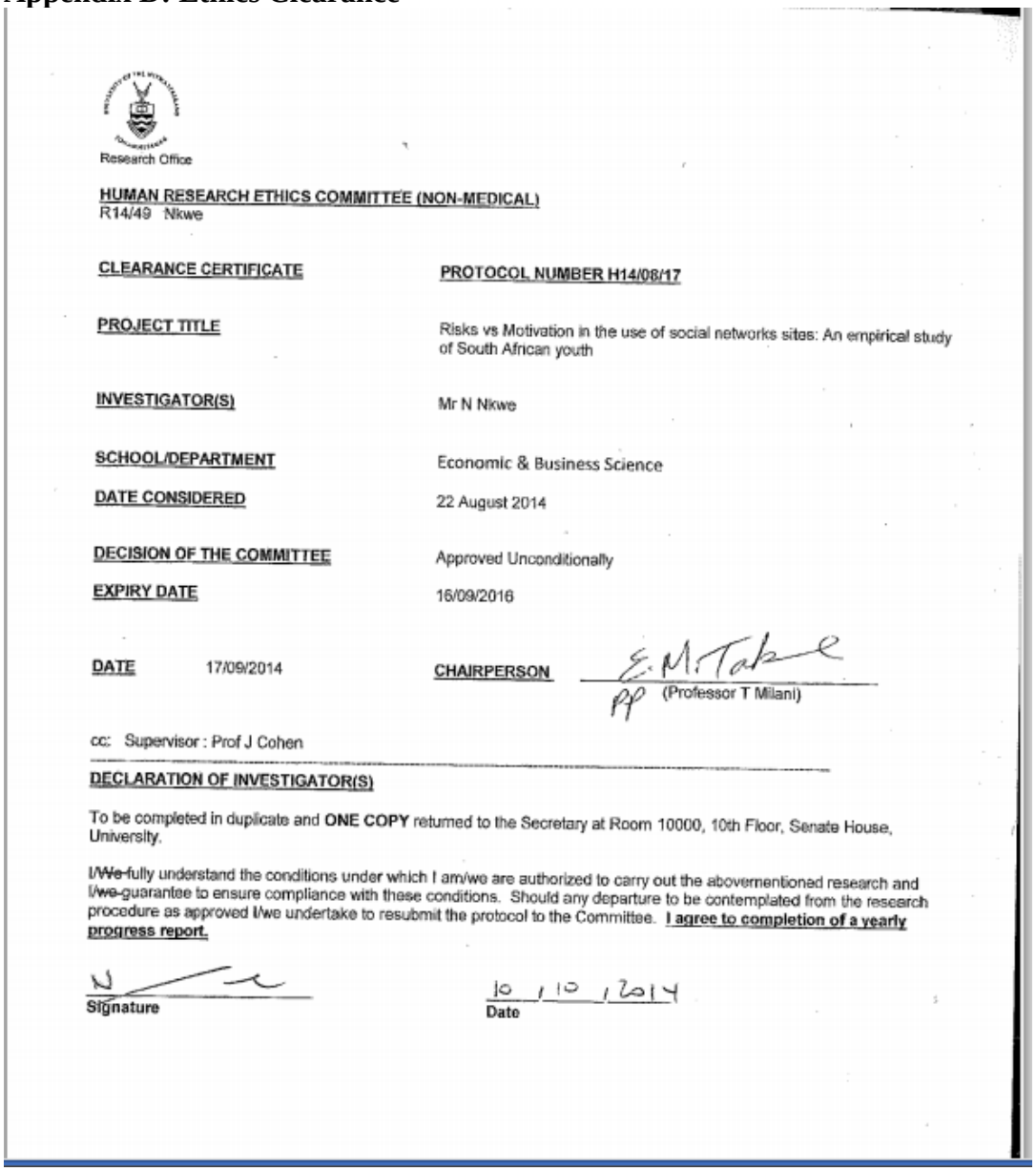
			help and teach, are key drivers of faculty participation
Barnes and Pressey (2011)	Second Life-virtual worlds	Maslow's needs (all)	Arousal, pleasure and individualism are particularly important in helping individuals to meet their goals in virtual world settings and should be borne in mind when designing virtual world experiences
Luo, Chea and Chen (2011)	Web based information service	Enjoyment	Perceived enjoyment significantly influences attitude toward WIS
Lee, Cheung, and Chen (2007)	Multimedia messaging service	Intrinsic and Extrinsic motivation	Extrinsic (e.g., perceived usefulness and perceived ease of use) and intrinsic (e.g., perceived enjoyment) motivators are important to the formation of intention to use MMS
Conci, Pianesi, and Zancanaro (2009)	Mobile phone	Self-actualization and enjoyment	Although the basic motivational structure of MP usage turned out to be utilitarian, the extrinsic motivations are strongly modulated by intrinsic one

Appendix C: Risk as factor

Study	Context	Study Design	Risk Variable	Findings
Featherman and Wells (2004)	E-Services	Exploratory	Risk	Results suggest that the inherent intangibility of e-services creates concerns measured in raised perceived artificiality and perceived risk
Kunzie and Mai (2007)	Online music services	Relational	Multidimensional (physical, functional, social, time, financial, information, opportunity)	The results suggest that performance and time-loss aspects of perceived risks are playing an important role, while social and psychological aspects of risks are of the least concern to consumers
Im, Kim and Han (2008)	Acceptance of technologies	Relational	Risk	Results showed that perceived risk, technology type, and gender were significant moderating variables
Harden , Beayeyz and Sidorova (2012)	SNS use	Relational	Risk	Risk and perceived benefits influence intention
Chen (2013)	Use of social networking sites	Relational	Risk	The presence of risk may attenuate the relationship between enjoyment and site use
Lu, Hsu and Hsu (2005)	Online applications	Relational	Multidimensional (physical, functional, social, time, financial, information, opportunity)	Perceived risk indirectly impacts intentions to use
Aïmeur, Gambs, Ho (2010)	Social Networking Site	Literature review	Privacy risks	Three main privacy risks are Security, Credibility and Reputation
Lorenzo-Romero, Constantinides, Alarco´n-del-Amo (2011)	Social networking sites	Relational	Risk	Perceived risk can influence the process of acceptance of SNS
Lowe, D'alessandro, Winzar, Laffey and Collier (2013)	Web 2.0	Relational	Risk	Risk tolerance was also found to be important driver
Wu and Wang (2005)	Mobile commerce	Relational	Risk	Perceived risk has a significant direct impact on behavioural intention to use.
Lee (2009)	Internet banking	Relational	Multidimensional (financial, security/privacy, performance,	Intention to use online banking is adversely affected mainly by the risk

			social and time risk)	
Molm, Nobuyuki and Peterson (2000)	Social Exchange	Lab experiment, relational	Risk	Risk is necessary for one to trust
Featherman and Pavlou (2003)	E-services	Relational	Multidimensional (performance, financial, opportunity/time, safety, social and psychological loss, overall risk)	E-services adoption is adversely affected primarily by performance-based risk
Currás-Pérez, Ruiz-Mafé and Sanz-Blas (2013	Social networking site loyalty	Relational	Multidimensional (social and psychological)	Perceived risk has a weaker influence on attitude

Appendix D: Ethics Clearance



Research Office

HUMAN RESEARCH ETHICS COMMITTEE (NON-MEDICAL)
R14/49 Nkwe

CLEARANCE CERTIFICATE	**PROTOCOL NUMBER H14/08/17**
PROJECT TITLE	Risks vs Motivation in the use of social networks sites: An empirical study of South African youth
INVESTIGATOR(S)	Mr N Nkwe
SCHOOL/DEPARTMENT	Economic & Business Science
DATE CONSIDERED	22 August 2014
DECISION OF THE COMMITTEE	Approved Unconditionally
EXPIRY DATE	16/09/2016

DATE 17/09/2014 **CHAIRPERSON** E.M. Tabe
pp (Professor T Milani)

cc: Supervisor : Prof J Cohen

DECLARATION OF INVESTIGATOR(S)

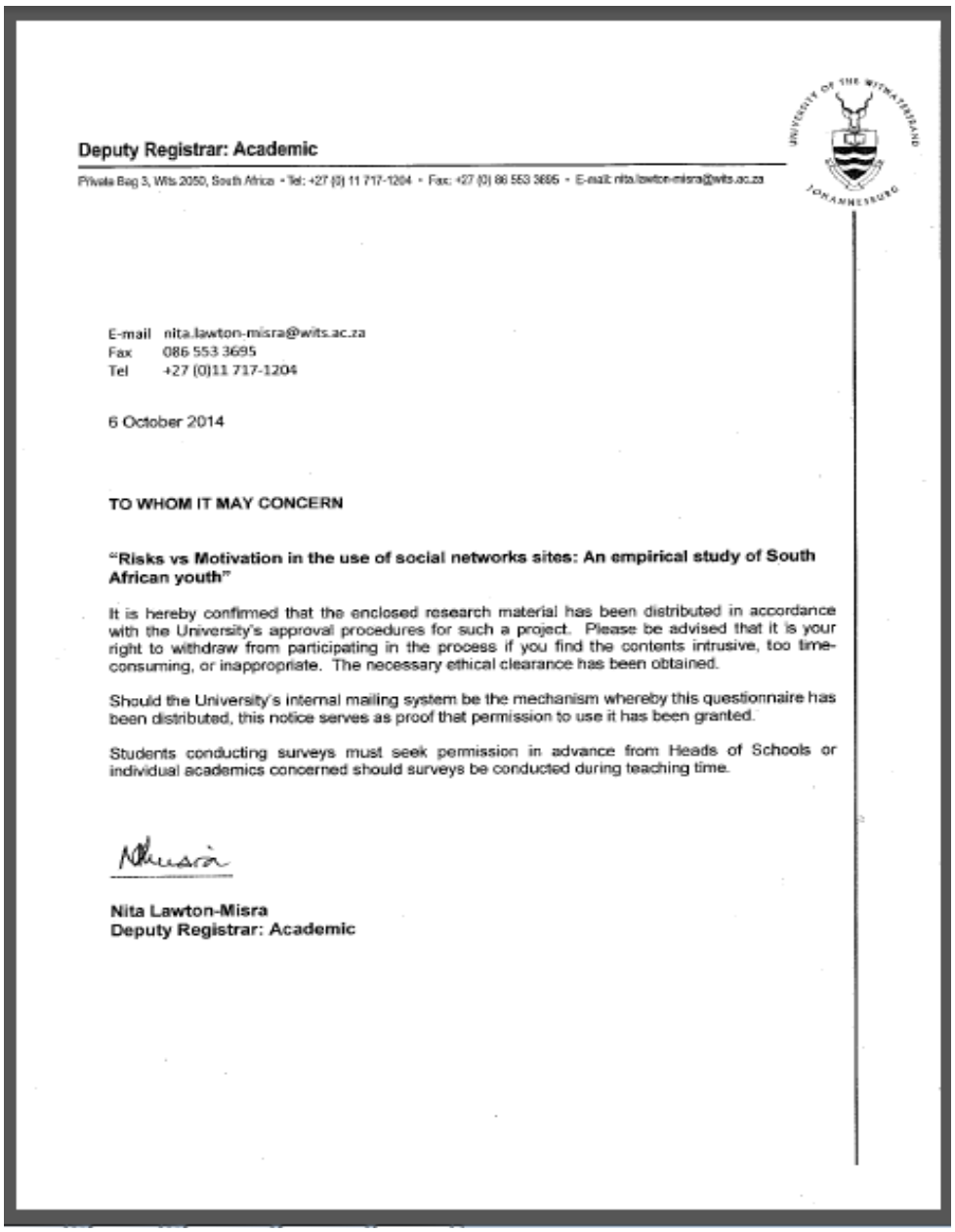
To be completed in duplicate and **ONE COPY** returned to the Secretary at Room 10000, 10th Floor, Senate House, University.

I/~~We~~ fully understand the conditions under which I am/we are authorized to carry out the abovementioned research and I/~~we~~ guarantee to ensure compliance with these conditions. Should any departure to be contemplated from the research procedure as approved I/we undertake to resubmit the protocol to the Committee. **I agree to completion of a yearly progress report.**

N
Signature

10 / 10 / 2014
Date

Appendix E: Registrar's Permission Letter



Deputy Registrar: Academic

Private Bag 3, Wits 2050, South Africa • Tel: +27 (0) 11 717-1204 • Fax: +27 (0) 86 553 3695 • E-mail: nita.lawton-misra@wits.ac.za

E-mail nita.lawton-misra@wits.ac.za
Fax 086 553 3695
Tel +27 (0)11 717-1204

6 October 2014

TO WHOM IT MAY CONCERN

"Risks vs Motivation in the use of social networks sites: An empirical study of South African youth"

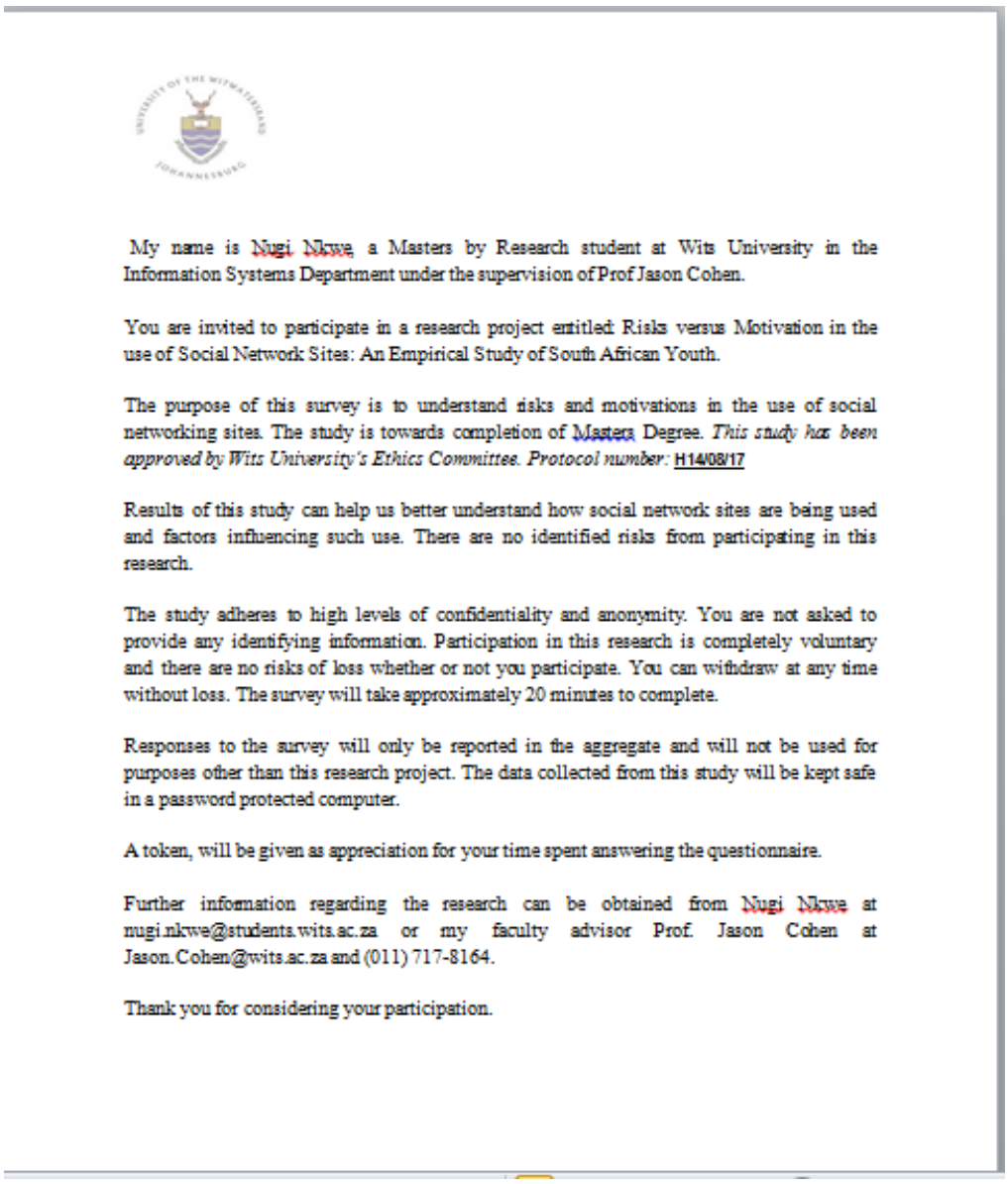
It is hereby confirmed that the enclosed research material has been distributed in accordance with the University's approval procedures for such a project. Please be advised that it is your right to withdraw from participating in the process if you find the contents intrusive, too time-consuming, or inappropriate. The necessary ethical clearance has been obtained.

Should the University's internal mailing system be the mechanism whereby this questionnaire has been distributed, this notice serves as proof that permission to use it has been granted.

Students conducting surveys must seek permission in advance from Heads of Schools or individual academics concerned should surveys be conducted during teaching time.

Nita Lawton-Misra
Deputy Registrar: Academic

Appendix F: Survey Invitation Letter



My name is Nugi Nkwe a Masters by Research student at Wits University in the Information Systems Department under the supervision of Prof Jason Cohen.

You are invited to participate in a research project entitled: Risks versus Motivation in the use of Social Network Sites: An Empirical Study of South African Youth.

The purpose of this survey is to understand risks and motivations in the use of social networking sites. The study is towards completion of Masters Degree. *This study has been approved by Wits University's Ethics Committee. Protocol number:* H14/08/17

Results of this study can help us better understand how social network sites are being used and factors influencing such use. There are no identified risks from participating in this research.

The study adheres to high levels of confidentiality and anonymity. You are not asked to provide any identifying information. Participation in this research is completely voluntary and there are no risks of loss whether or not you participate. You can withdraw at any time without loss. The survey will take approximately 20 minutes to complete.

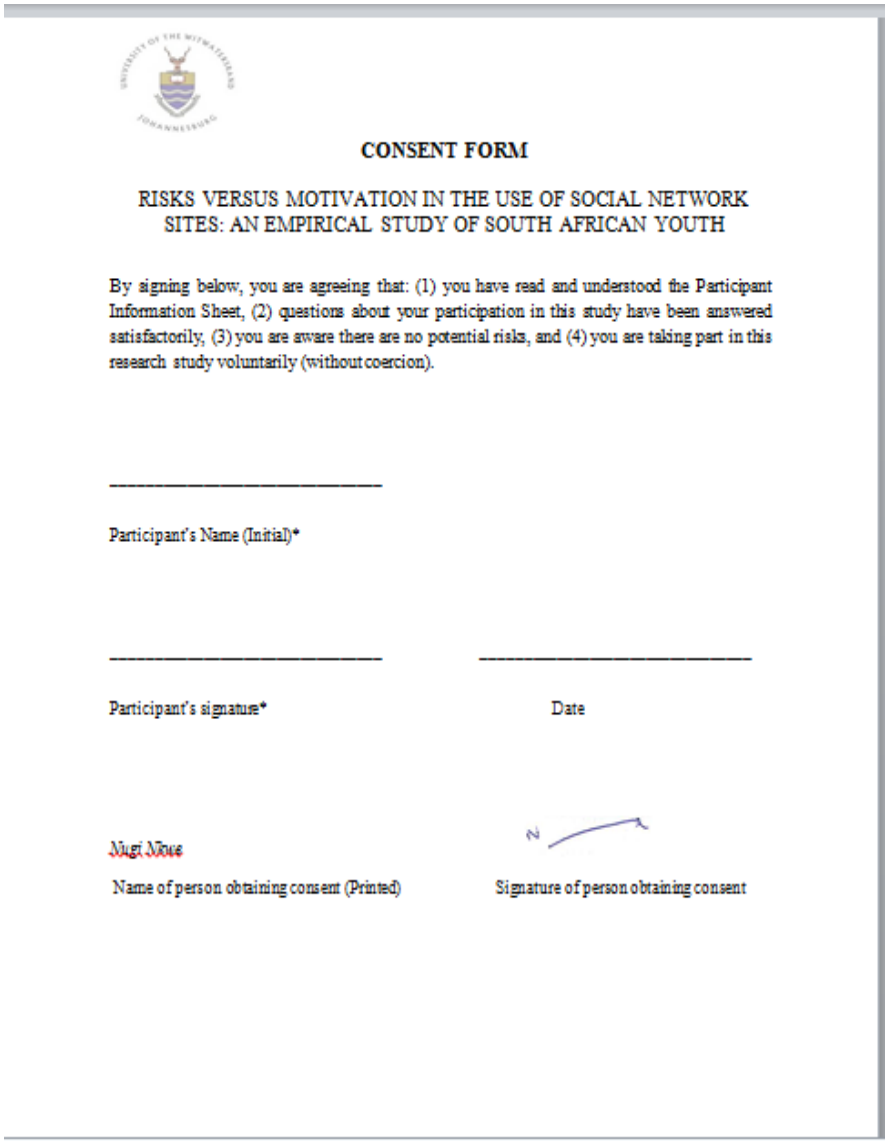
Responses to the survey will only be reported in the aggregate and will not be used for purposes other than this research project. The data collected from this study will be kept safe in a password protected computer.

A token, will be given as appreciation for your time spent answering the questionnaire.

Further information regarding the research can be obtained from Nugi Nkwe at nugi.nkwe@students.wits.ac.za or my faculty advisor Prof. Jason Cohen at Jason.Cohen@wits.ac.za and (011) 717-8164.

Thank you for considering your participation.

Appendix G: Consent Form



CONSENT FORM

RISKS VERSUS MOTIVATION IN THE USE OF SOCIAL NETWORK SITES: AN EMPIRICAL STUDY OF SOUTH AFRICAN YOUTH

By signing below, you are agreeing that: (1) you have read and understood the Participant Information Sheet, (2) questions about your participation in this study have been answered satisfactorily, (3) you are aware there are no potential risks, and (4) you are taking part in this research study voluntarily (without coercion).

_____

Participant's Name (Initial)*

_____ _____

Participant's signature* Date

Nugi Nkosi

Name of person obtaining consent (Printed) Signature of person obtaining consent

Appendix H: Questionnaire

Instruction: Please fill the questionnaire by ticking '✓ ' the appropriate box

A. Demographics

Gender

☐ *Female* ☐ *Male* ☐ *Prefer not to say*

Major

Specify (e.g. Accounting, Marketing, Medicine, Architecture etc) _____

Level (year) of Study

☐ *1* ☐ *2* ☐ *3* ☐ *4/Honours* ☐ *Masters* ☐ *PhD*

Age

☐ *Less than 18* ☐ *18* ☐ *19* ☐ *20* ☐ *21* ☐ *22* ☐ *23* ☐ *More than 23*

Which of the following sources of income do you have (more than one answer is possible)

☐ *Employer* ☐ *Stipend* ☐ *Allowance from home* ☐ *None* ☐ *Other(specify)_____*

Where do you reside?

☐ *University res* ☐ *Private Student res* ☐ *Home* ☐ *Renting but, not student res* ☐ *Other(specify)_____ _____*

B. General Social Network Sites (SNS) Use/Usage

******Social Network Sites (SNS) include sites such as Facebook, Instangram and Twitter*

Which Social Network Site account do you currently use most?

☐ *Facebook* ☐ *Twitter* ☐ *Instagram* ☐ *Other(s) specify_____* ☐ *I am not using any Social Network Site*

If you do use social network sites, please continue answering the questionnaire

How old were you when you first started using Social Network Sites?

☐ *Under 14* ☐ *14* ☐ *15* ☐ *16* ☐ *17* ☐ *18+*

How many days on average a week do you access your most used Social Network Site account?

☐ *Zero* ☐ *1 day* ☐ *2 days* ☐ *3 days* ☐ *4 days* ☐ *Always on*

My profile of the most used social network site (SNS) is

☐ *Private* ☐ *Public* ☐ *Don't know*

Which device do you most use to access your SNS (e.g. Facebook, Twitter)?

☐ *Phone* ☐ *Laptop* ☐ *Desktop* ☐ *Tablet* ☐ *Other specify*_____

How many hours on average per day do you spend on SNS (e.g. Facebook, Twitter)?

☐ Less than 1hr ☐ 1 to 2 hours ☐ 2 to 3 hours ☐ 3 to 4 hours ☐ 4 to 5 hours ☐ More than 5 hours

How many friends/followers do you have on your most used SNS (e.g. Facebook, Twitter)?

☐ less than 50 ☐ 51-100 ☐ 101-200 ☐ 201-300 ☐ More than 300

For the SNS that you use most, what percentage of friends do you know personally?

☐ Less than 10% ☐ 10% ☐ 20% ☐ 30% ☐ 40% ☐ 50% or more

For the SNS that you use most, which of the following are displayed (more than one is possible, tick all that apply)

☐ Your city ☐ Your home address ☐ Photo of yourself ☐ Contact (Mobile, email) ☐ Relationship Status(e.g. single) ☐ Sexual Orientation(e.g. Straight)

Please place a "✓ " in the appropriate box to rate the following items using a scale of 1-5:

1= Strongly Disagree 2= Disagree 3=neither (agree nor disagree) 4=Agree 5=Strongly Agree

Usage	1	2	3	4	5
SNS is part of my everyday activity					
I am proud to tell people I am on SNS					
SNS has become part of my daily routine					
I feel out of touch when I have not logged onto SNS for a while					
I feel I am part of the SNS community					
I would be sorry if SNS shut down					

C. Factors influencing Use of Social Network Sites (SNS) (e.g. Facebook, Twitter,Instagram)

Please place a "✓ " in the appropriate box to rate the following items using a scale of 1-5:

1= Strongly Disagree 2= Disagree 3=neither (agree nor disagree) 4=Agree 5=Strongly Agree

Behavioural Intention	1	2	3	4	5
It is likely that I will post content on SNS within the next 24 hours					
I plan to share information with contacts on SNS within the next 24 hours					
I expect to respond to the posts of others on SNS site (e.g. by liking, commenting, following a link or video) within the next 24 hours					
Perceived Usefulness					
SNS (e.g. facebook) enable me to connect with other people					
SNS enhance my ability to get information from others					
SNS enable me to make new friends					
SNS enable me to share my thoughts and ideas with other people					
Perceived Ease of Use					
Learning to use SNS (e.g. facebook) is easy for me.					
My interaction with SNS is clear and understandable.					
It is easy for me be to become skilful at participation in SNS					
Overall, participation in SNS is easy for me					
Risk					
Psychological Risk					
The thought of using SNS (e.g. facebook) makes me feel comfortable.					
The thought of using SNS makes me feel anxious					
The thought of using SNS causes me to experience tension					

Time Loss Risk					
I am concerned about wasting too much time participating in SNS (e.g. facebook)					
I am concerned about having to waste time on tasks (reading and writing, etc) related to participation in SNS					
The demands on my schedule are such that using SNS could create even more time pressures on me that I don't need					
Social Risk					
If I subscribed to SNS (e.g. facebook), I think I would be held in higher esteem by my colleagues					
The thought of subscribing to SNS causes me concern, regarding what some my friends would think of me					
Some of the people whose opinion I value would think I was foolish if I signed up for SNS.					
Performance Risk					
If I were to use SNS (e.g. facebook), I would be concerned that they would not provide the level of benefits that I would be expecting					
As I consider using SNS, I worry about whether they will perform as they are supposed to					
I am not confident about the ability of SNS provider(s) to provide SNS that would perform to my satisfaction.					

Please place a "✓ " in the appropriate box to rate the following items using a scale of 1-5:

1= Strongly Disagree 2= Disagree 3=neither (agree nor disagree) 4=Agree 5=Strongly Agree

Physical Risk	1	2	3	4	5
I am concerned that using SNS (e.g. facebook) can cause eyestrain due to looking at the computer/phone or other devices					
I am concerned about the potential health-related risks associated with using SNS on the computer/phone or other devices					
I am concerned that using SNS may lead to uncomfortable physical side effects such as bad sleeping, backaches, and the like					
Privacy Risk					
My use of SNS (e.g. facebook) would cause me to lose control over the privacy of my information					
Signing up for and using SNS would lead to a loss of privacy for me because my personal information could be used without my knowledge.					
Internet hackers (criminals) might take control of my information if I use SNS					
Financial Risk (in case I have to pay)					
Signing up for SNS (e.g. facebook) would be a poor way to spend my money.					
I would be concerned about how much I would pay if I subscribed to SNS					
If I subscribed to SNS, I would be concerned that I would not get my money's worth.					

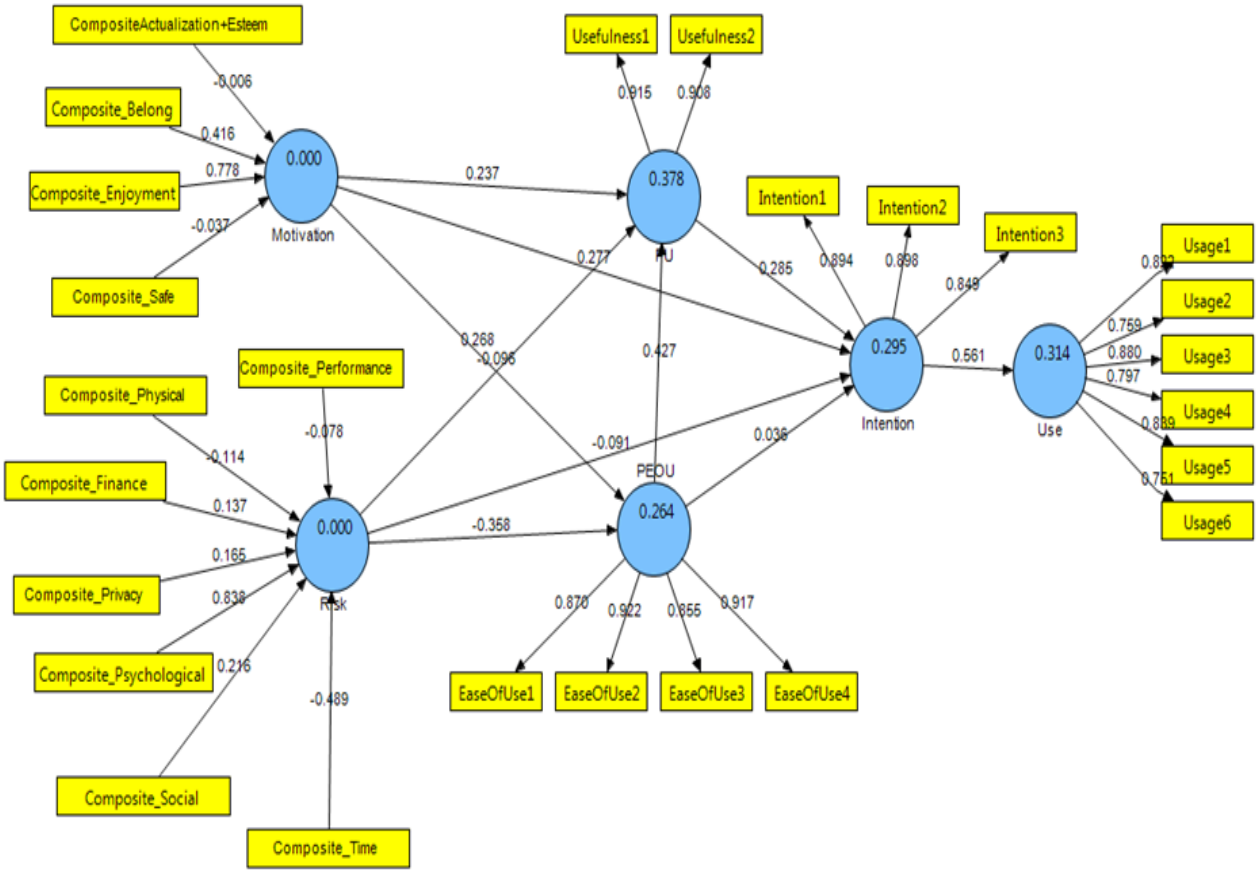
Motivation					
Need to belong					
SNS (e.g. facebook) enable me to let out my emotions easily to others.					
SNS enable me to express my problems to others who will help					
SNS enable me to talk to others when I am lonely					
SNS let others know I care about their feelings					
Self-Actualization					
SNS (e.g. facebook) give me the opportunity for personal growth and development					
SNS give me the feelings of worthwhile accomplishment					
SNS give me the opportunity for doing original or creative work					
SNS give me the feeling of self-fulfilment					
Self Esteem					
Using SNS (e.g. facebook) gives me the feeling of self esteem					
Using SNS gives me prestige in the community					
Using SNS gives me recognition					
Enjoyment					
Using SNS (e.g. facebook) is exciting					
Using SNS is pleasant					
Using SNS is compelling					
Safety					
Using SNS (e.g. facebook) gives me a feeling of safety in my life					
I feel secure in my life when I use SNS					
I feel settled in my life when I use SNS					

Any other comments:

_____
_____
_____

Thank you for your time and participation in this study.

Appendix I: Initial Structural Model



Appendix J: Risk and Motivation on Intention and Usage

