

PRIVACY AND SECURITY IMPACTS OF SOCIAL
MEDIA ON MILITARY CADETS IN MALAYSIA

BY

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the degree of Master of Protective Security Management

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ABSTRACT

Even though Military Armed Forces (MAF) has its security classifications which mirror the urgency of handling the official classified information such as restricted, confidential, secret or top-secret, other information which might involve national interest, also need to have a degree of protection or special handling. It portrays the need for having information security management of pertinent information, to protect official classified information from various threats, including information leakage through social media. Due to the increased use of social media, a significant amount of leakage cases have been reported worldwide. Realizing this current phenomenon and protecting MAF classified information, this research focuses on security and privacy concerns of using social media among Universiti Pertahanan Nasional Malaysia (UPNM) or National Defense University of Malaysia (NDUM) military cadets. The aim of this study is to investigate the use of social media among the military cadets and its impacts on the cadet's security and privacy. This research used a survey as the research method and questionnaires as the data collection instrument was distributed to 50 respondents who are active users of social media. This study also examined popular online social network sites among the cadets, their information security behaviour, the information they shared on social media, and their responses to scenarios which indicate their security awareness. The quantitative data were analysed using SPSS version 21. Based on the results, this study proposes an appropriate training programme regarding data disclosure on social media that tailored to the military cadets' behaviour and security awareness levels. The results revealed a relationship between the identified attributes, usage behaviour, security education and knowledge, security awareness, and influencing factors. The study also identified how military cadets' social environment shaped individuals' security and privacy awareness. It contributes to research and importance to society, particularly university students and military cadets because it is seen as an effort in promoting safe and secure use of social media.

خلاصة البحث

على الرغم من أن القوات المسلحة العسكرية تمتلك سرية أمنها الخاصة التي تعكس سرعة التعامل بمعلومات سرية رسمية مثل المقيّد والسرية، والسرية، أو غاية السرية فإن المعلومات الأخرى التي قد تتضمن مصلحة وطنية ، فهي بحاجة أيضا إلى معالجة أو وقاية خاصة. وهي تصور الحاجة إلى وجود إدارة معلومات سرية ذات صلة بالمعلومات، لصون معلومات سرية رسمية من عناصر مختلفة من ضمنها تسرب المعلومات عبر شبكة التواصل الاجتماعي. وانطلاقا من ارتفاع استخدام تلك الشبكة، فثمة عدد كبير لحالات التسرب قد حدثت في جميع أنحاء العالم. ونظرا للظاهرة الراهنة وفي سبيل وقاية سرية المعلومات الرسمية للقوات المسلحة العسكرية، يركز هذا البحث على السرية والاهتمام الخصوصي في استخدام شبكة التواصل الاجتماعي لدى الطلاب العسكريين بجامعة الدفاع الوطني الماليزي. وتهدف هذه الدراسة إلى البحث في مدى استخدام شبكة التواصل الاجتماعي لدى الطلاب العسكريين وأثره على سلامتهم وخصوصيتهم. ومن ناحية أخرى، يستخدم هذا البحث الدراسة الاستقصائية والاستبانة لجمع البيانات تم توزيعها لخمسين شخصا وهم ممن يلتزمون في استخدام الشبكة. وبالإضافة، تهدف الدراسة إلى معرفة مواقع التواصل الاجتماعي المشهورة لدى هؤلاء العسكريين، وسلوك أمن معلوماتهم، والمعلومات التي يشاركونها، وردودهم للحالات التي تشير إلى وعيهم للأمن.

APPROVAL PAGE

I certify that I have supervised and read this study and that in my opinion, it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Master of Protective Security Management

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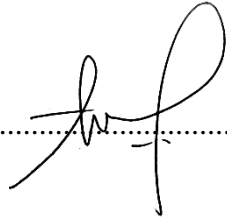
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DECLARATION

I hereby declare that this dissertation is the result of my own investigations, except where otherwise stated. I also declare that it has not been previously or concurrently submitted as a whole for any other degrees at IIUM or other institutions.

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This dissertation is dedicated to

My family.

Thank you so much for all of your strong support, endless love, trust, constant encouragement over the years, and prayer throughout my studies.

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CHAPTER ONE

INTRODUCTION

1.1 INTRODUCTION

The Internet has become a part of daily routine as people are now more connected through social media platforms than face-to-face. As networking software, social media continues to function as a tool for people to communicate between them, and it has changed the lifestyle of the people. Since social media is now a popular communication platform, it has become the target of certain individuals to misuse and attack this platform with cyber threats such as cyberbullying and cyber attacks.

Based on research conducted by Fogel and Nehmad (2009) and Wilson, Gosling, and Graham (2012), social media usage can change the way of people live and communicate around the world, and it gives significant impacts on an individual's life. A survey conducted by Statista (2019) shows that among the social media platforms, which includes Twitter, Facebook, Instagram, and LinkedIn, Facebook has positioned itself as the most famous social media site with 2.41 billion active users for the second quarter of 2019. According to Debatin, Lovejoy, Horn and Hughes (2009), which was then supported by Dey, Jelveh, and Ross (2012), when any social media platform starts to get the recognition from the public, it always leads to online data protection issues. Social media users have the tendency to disclose enormous amounts of private information, and they might unintentionally divulge information which might put themselves, colleagues and organizations exposed to security risks due to disclosure of sensitive information (Abdul Molok, Ahmad & Chang, 2018).

It is vital for society to understand how humans interact through social networking platforms that substantially impact human lives. Companies or

corporations such as the defence company, security company, and financial institutions that deal with sensitive data/information are imposing strict policies on how their employees share personal information online due to cyber-attacks. Some companies restrict some information from being shared and used (Arico & Srinivasan, 2014). Besides that, social media relies on mobile technology and web-based platforms to create a highly interactive environment where one can connect with the community to make friends, discuss things, and modify user-generated content (Fisher & Baird, 2006). It introduced significant changes in the communication system between businesses, organizations, communities, and individuals (Kietzmann, Hermkens, McCarthy & Silvestre, 2011). Social media has become one of the most popular internet applications or services in the world, such as Facebook and YouTube. As of February 2020, Alexa, a company that tracks web traffic, has ranked YouTube as the second most visited site and Facebook as Top 4 most visited site in the world, with Google, reigns first place (Alexa, 2020).

This study focuses on the Universiti Pertahanan Nasional Malaysia (UPNM) military cadets as they are the future leaders of the Malaysian Armed Forces (MAF). Since its official establishment in November 2006, UPNM has produced about 5000 military officers comprising of Army, Navy and Air Force division (CSM, 2019). According to their expertise, all officers from UPNM will be appointed to their respective positions based on their degree. Most UPNM-trained military cadets hold an important position and are involved in handling security and defence assets and confidential information. Therefore, this study reveals the behaviour or practice and level of awareness of the UPNM military cadets on information security and privacy through social media.

1.2 PROBLEM STATEMENT

Disclosure of information through social media among end-users has been rampant in this interconnected world. Online users share personal information, current location, current activities, and contact details without realizing that their information is available to people on the internet. Oversharing of information on social media sites among teenagers and young adults would result to cyber social problems such as cyberbullying, stalking, threatening, harassing, and humiliating a user or groups digitally (Abdul Molok & Kartiwi, 2015; O’Keefe & Pearson, 2011; Boyd & Hargittai, 2013; Chapin, 2016; Peebles, 2014). The threats can be generated by spreading private materials which may include pictures or videos, creating groups against a person and worse, gathering online information or stalking on a particular individual. There are also cases where people create fake profiles of other people using the information they shared in a social media account.

Due to the aforementioned problems, oversharing on social media has raised privacy and security concerns and therefore, immediate actions are needed to rectify these problems. The increasing use of social media in the MAF cadets, especially in their key role as a national security front has made military personnel risky to the exposure of social media misuse. The freedom of access to cyberspace via various platforms and devices such as mobile devices especially smartphones and laptops has contributed to confidentiality, integrity and availability of information. From the observations and interviews made, it can be concluded that the MAF is facing significant challenges in achieving an adequate level of information protection as the technology advances rapidly. While leakage through social media among military personnel has been reported in the Western countries, the current studies on MAF are still limited. A few studies were done on MAF and social media (Masdan, 2016; Issa

et al., 2018), which cover factors contributing to the leakage of information or data through the use of social media among MAF members, including computer usage, education and knowledge on security, awareness and acceptance and understanding of security policies and Knowledge Management System (KMS). However, this study covered information disclosure through social media among MAF personnel focusing on security and privacy concerns and recommended actions that can be taken to address the problem.

1.3 RESEARCH OBJECTIVES

This study aims to fulfil a few objectives, which are as follows:

1. To examine military cadet's information security behaviour towards social media.
2. To assess the security and privacy awareness of military cadets regarding the information shared on social media.
3. To recommend strategies to address sensitive information disclosure through social media.

1.4 RESEARCH QUESTIONS

Research questions are identified as follows:

1. What are the factors that influence sensitive information disclosure on social media among military cadets? (RQ1)

RQ1 focuses on investigating the factors that influence how military cadets share information on social media, particularly sensitive information that may raise the security and privacy concerns of themselves and MAF.

2. How to address security and privacy issues due to information disclosure through social media among military cadets? (RQ2)

RQ2 is intended to examine how sensitive information disclosure through social media affects the military cadets' security and privacy and the strategies to address this phenomenon.

1.5 HYPOTHESIS

The hypotheses for this research are:

Hypothesis 1

There is a significant relationship between military cadets' social media behaviour and sensitive information disclosure on social media.

Hypothesis 2

There is a significant relationship between military cadets' security awareness and sensitive information disclosure on social media.

Hypothesis 3

There is a significant relationship between security best practice and sensitive information disclosure on social media

1.6 RESEARCH SCOPE

Social media was chosen as the research scope because social media is one of the most challenging information disclosure platforms. One of the social media features is that the uploaded content can be copied, shared, or found through an online search. In

addition to that, social media information is highly exposed because the information is consistently and widely shared among users.

The military cadets are considered as a military officer based on the Military Act 1972 which states that "officer" means any person who is or is a higher rank than a naval officer or cadet officer who has been appointed to or commissioned in the army and (subject to such adjustments and modifications as may be prescribed by any written law or the terms of service relating to the appointment or assignment) of any naval, naval or air force officer of a foreign state who has been appointed or delegated to the armed forces. The research scope was restricted only to the military cadets by exploring what influences their behaviour in securing the needed information. Military cadets were chosen as part of the scope because the Malaysian Armed Forces (MAF) personnel are active users of social media, and they are actively using social media as a medium of sharing information. There is a need for the MAF to understand social media usage to come up with a proper control mechanism on what type of information the military cadets can share. This control mechanism is vital to avoid unnecessary complications related to social media usage by the military cadets. The survey technique was used as a quantitative approach, and the detailed process of data collection will be mentioned in details in Chapter 3.

1.7 SIGNIFICANCE OF THE RESEARCH

This research contributes to the research community as an added and fresh literature in investigating university students among military cadets who use social media and highlight their social media usage's security impacts. This research aims to identify privacy and security impacts of social media among military cadets to understand their social media and security behaviour. This research can help military personnel handle

confidential information by adhering to several factors that influence the data leak identified in this study. Although confidential information requires special care in handling valuable assets owned by the organization, this research can serve as a key point for future researchers in designing standards related to data disclosure factors in the future.

This study aims to promote the safe and secure use of social media among military cadets. The research was directed to learn how social media influences their behaviour and how well they can secure their information. It also emphasises issues related to the privacy and security impacts of social media among the military cadet. Meanwhile, The outcome of this research may be useful for other organizations to conduct information security assessments through the use of social media among their employees.

1.8 ORGANIZATION OF THE DISSERTATION REPORT

The research work is written in five chapters. Chapter One of this research gives the overview of the research being conducted such as the background of the problem, the research questions, objectives for the research, and then followed by the research significance and research scope. The second chapter of this research focuses on the literature review that is related to the research area. The research methodology of this research is discussed in Chapter Three, which includes the research technique and operational framework of the research. The following chapter, which is chapter four, focuses on the findings and survey questionnaire output collected through a survey process. The final chapter of this research which is the fifth chapter explains the findings for each research objective.

1.9 SUMMARY

In this chapter, the introduction component has been discussed, and it was followed by a background of the research problem, research problem statement, research objectives, aims of the research, research scope, and significance of the research. The following chapter, which is the Literature Review, will give information on existing studies done in social media privacy and security.

CHAPTER TWO

LITERATURE REVIEW

2.1 INTRODUCTION

This chapter provides information on the review of literature on information disclosure, the platform of information disclosure, issues with information disclosure among military cadets, security issues, security awareness and security behaviour. This chapter will use all information to identify the problem, methodology, framework, and model for this research.

2.2 INFORMATION DISCLOSURE

According to Wheelless and Grotz (1977, p. 47), the definition of self-disclosure is “any message about oneself which is shared or disclosed with another person”. In addition to that, self-disclosure is also defined as sharing personal information, and the users have interest on revealing other personal information like their hobbies, type of music they like to listen, and books they like to read (Gross & Acquisti, 2005).

According to the analysis that was conducted by Homans (1958), self-disclosure can be linked back to the Social Exchange Theory that was introduced by Homans in 1958. Joinson and Paine (2009) mentioned that the impact of a relationship, like trust-building and mutual feeling and reciprocation, typically can increase in line with the prices and it will increase once the vulnerability is increasing. Apart from that, Hui et al. (2006) distinguished that firms that are obvious or open in their personal preferences and money figures often get in touch with details.

Most of the digital platform user’s disposition is to participate throughout web dealings, which are negatively associated with their perception of privacy risks (e.g.

McKnight, Choudhury & Kacmar, 2002; Malhotra et al., 2004; Pavlou, 2003). However, no study has examined the precise relationship between privacy risks and actual self-disclosure. On the other hand, Krasnova et al. (2009) found a significant link between privacy issues and self-disclosure, suggesting that users are aware of for privacy risks once they attempt to self-disclose, while Acquisti and Gross (2006) found a discrepancy between claimed privacy issues and revealing behaviour on sites. The authors suggested that the discrepancy is a component explained by the actual indisputable fact that users trust online social network suppliers and network members, thereby giving them access to regulate their private information. Studies conducted among the context of e-commerce (Pavlou, 2003) and online communities (Ridings et al., 2002) stressed the role of trust in assuaging privacy risks. Based on the social media context, Dwyer, Hiltz, and Passerini (2007) developed an abstract model of data sharing that integrates each trust among the social networking site suppliers and trust in online social networking members, viewing them as factors that countervail net privacy issues.

However, the empirical analysis of their model provides a little insight into the association between trusting beliefs and succeeding behaviour, thus underscoring the role of management. Culnan and Armstrong (1999) argued that shoppers need to be answerable of their shared information as it is additionally a pre-condition to mitigate privacy risks and improve trust. Xu et al. (2008) provided proof for the clarification on social media context by showing that dominant perceptions influence the formation of individual privacy issues.

According to a study entitled "Searching and Issues for Social Networking," (2011), "as social media users, various information is shared through social media networks and at the same time raises concerns about the disclosure of organisational

information made by individuals within an organisation” (Qi & Edgar- Nevill, 2011, p. 75).

2.2.1 Conceptual Model for Data Disclosure Model

Based on previous research, several models can be considered a guide for developing Data Disclosure Models in Social Media Use. Most researchers agree that awareness plays an important role in ensuring that information security in an organization is optimised. Employees need to be trained and exposed to information security awareness when using social media. Information security encompasses three key elements: technology, procedure and human.

Based on the literature review, there is no specific model or theory to develop a model regarding factors that may prevent Data leaks in Social Media Use in MAF. However, there are three factors identified that can prevent the disclosure of data or information through social media use by cadet officers. Therefore, this study proposed three components, as shown in Figure 2.1, which illustrates the proposed conceptual model based on the literature review findings.

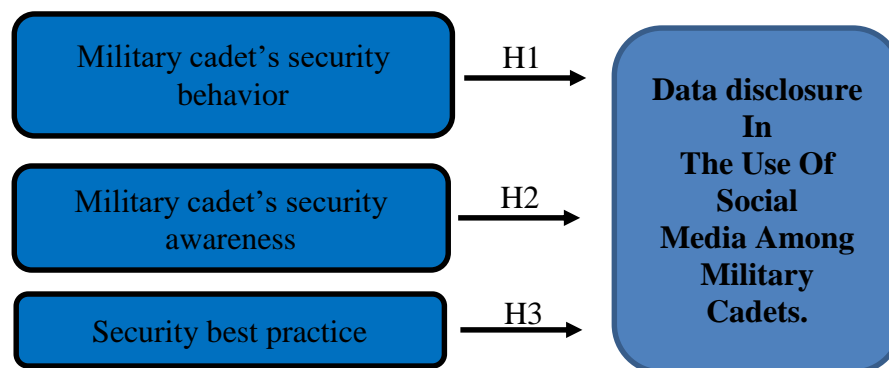


Figure 2.1 Proposed Conceptual Model Data Disclosure Model in the Use of Social Media for UPNM Military Cadets