ANTECEDENTS AND CONSEQUENCES OF CYBERLOAFING AMONG KNOWLEDGE WORKERS IN MALAYSIAN MSC STATUS COMPANIES: THE MODERATING EFFECT OF DURATION ON CYBERLOAFING BREAKS

SITI SALINA BINTI SAIDIN

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by

SITI SALINA BINTI SAIDIN

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LIST OF ABBREVIATIONS

AVE	Average Variance Extracted
CFA	Confirmatory Factor Analysis
CR	Composite Reability
DUIT	Deviant Use of Internet Technology
FDI	Foreign Direct Investment
HCM	Hierarchical Component Model
ICT	Information Communication Technology
IP	Internet Protocol
IT	Information Technology
MDEC	Malaysia Digital Economy Corporation
MGA	Multigroup Analysis
MICOM	Measurement Invariance of Composites
MSC	Multimedia Super Corridor
SEM	Structural Equation Model
TIB	Theory of Interpersonal Behaviour
VIF	Variance Inflation Factor

ANTESEDEN DAN KESAN CYBERLOAFING DI KALANGAN PEKERJA BERPENGETAHUAN DALAM SYARIKAT BERSTATUS MSC DI MALAYSIA : KESAN PENYEDERHANAAN DARIPADA TEMPOH CYBERLOAFING

ABSTRAK

Kajian ini mengkaji dan mengesahkan satu model penyelidikan bagi memahami tingkah laku *cyberloafing* di kalangan para pekerja berkemahiran tinggi dalam syarikat-syarikat berstatus Koridor Raya Multimedia Malaysia, iaitu dengan mengadaptasi *Theory Interpersonal Behaviour(TIB)* untuk menerangkan hubungan antara faktor-faktor yang dikaitkan dan tingkah laku *cyberloafing* (niat pekerja, tabiat pekerja, keadaan memudahkan, dan kemampuan untuk menyembunyikan cyberloafing) dan *Deviant Use Internet Technology (DUIT)* untuk menerangkan konsep kesan-kesan daripada tingkah laku *cyberloafing* dari segi produktiviti kerja, tekanan kerja dan ancaman keselamatan dalam talian kepada organisasi. Khususnya, kajian ini juga mengkaji sama ada tempoh istirahat cyberloafing akan menyederhanakan hubungan antara tingkah laku *cyberloafing* dan produktiviti kerja serta hubungan antara tingkah laku *cyberloafing* dan tekanan kerja di kalangan para pekerja berkemahiran tinggi. 264 data telah diperoleh melalui penyebaran kajian soal selidik dalam bentuk di atas talian dan konvensional daripada kalangan para pekerja berkemahiran tinggi dalam syarikat-syarikat berstatus Koridor Raya Multimedia Malaysia, dan dua belas hipotesis telah diuji. Analisis Pemodelan Persamaan Struktur Kuasa Dua Terkecil Separa *(PLS-SEM)* digunakan untuk menganalisa model penyelidikan dalam kajian ini. Hasil kajian mendapati faktor kesan, faktor sosial dan faktor akibat yang dirasakan didapati berpengaruh signifikan terhadap niat perkerja untuk cyberloafing. Selain daripada itu, faktor niat untuk melibatkan diri dalam cyberloafing. tabiat pekerja dan keupayaan pekerja untuk menyembunyikan *cyberloafing* didapati sebagai penyebab utama tingkah laku *cyberloafing*. Walau

bagaimanapun, keadaan memudahkan tidak berpengaruh signifikan sebagai terhadap tingkah laku *cyberloafing*. Di samping itu, produktiviti kerja dan tekanan kerja didapati berpengaruh signifikan sebagai kesan-kesan daripada tingkah laku *cyberloafing*. Walau bagaimanapun, faktor ancaman keselamatan dalam talian kepada organisasi tidak berpengaruh signifikan sebagai kesan-kesan daripada tingkah laku *cyberloafing.* Kajian ini juga mendapati bahawa tempoh istirahat *cyberloafing* telah menyederhanakan hubungan antara tingkah laku *cyberloafing* dan produktiviti kerja, serta hubungan antara tingkah laku *cyberloafing* dan tekanan kerja di kalangan para pekerja berkemahiran tinggi dalam syarikat-syarikat berstatus Koridor Raya Multimedia Malaysia.

ANTECEDENTS AND CONSEQUENCES OF CYBERLOAFING AMONG KNOWLEDGE WORKERS IN MALAYSIAN MSC STATUS COMPANIES: THE MODERATING EFFECT OF DURATION ON CYBERLOAFING BREAKS

ABSTRACT

This study examines and validate a reseach model in order to understand the actual cyberloafing behavior among knowledge workers in Malaysian MSC-status companies by adopting the Theory of Interpersonal Behavior (TIB) for the antecedents of cyberloafing (intention to cyberloaf, habit, facilitating condition and ability to hide cyberloafing) and the Consequences of Deviant Usage of Internet Technology (DUIT) in order to investigate the consequences of cyberloafing in terms of work productivity, work stress and online security threats to the organizations. Precisely, this study also investigates whether duration of cyberloafing break moderates the relationship between actual cyberloafing behavior and knowledge workers'work productivity as well as the relationship between actual cyberloafing behavior and knowledge workers' work stress. 264 usable data was obtained through online survey and paper-based survey from knowledge workers in Malaysian MSC-status companies, and twelve hypotheses were tested. Partial Least Squares Structural Equation Modeling (PLS-SEM) was utilised to verify the research model in this study. The results show that affect, social factor and perceived consequences were significant belief dimensions of intention to cyberloaf. The intention to cyberloaf, habit and ability to hide cyberloafing were found to be significant antecedent of cyberloafing. However, facilitating conditions was found insignificant as the predictor of cyberloafing. Additionally, work productivity and work stress were found to be significant consequences of cyberloafing. However, online security threat to the organizations was not significant as the consequence of cyberloafing. The findings also provided evidence that the duration of cyberloafing breaks moderate both relationships between actual

cyberloafing behavior and work productivity as well as the relationship between actual cyberloafing behavior and work stress among knowledge workers in Malaysian MSC-status companies.

CHAPTER 1

INTRODUCTION

1.1 Introduction

This chapter describes the background of the research, the use of the internet for cyberloafing and research problem related to the study. It also presents the research questions, research objectives, and the significance of the study. Subsequently, it is followed by the scope of this study and the definition of the key variables in the study and chapter summary.

1.2 Background of the Study

The potential of the Web, internet and its infrastructure has made us change the way we work and live. Additionally, utilizing the internet in the working environment has progressed towards becoming a part of current workplace situation. Besides increasing work profitability and effectiveness of knowledge workers, internet and computing have additionally conveyed new challenges in controlling computer-related work practices.

These days, the internet has completely penetrated the cutting edge of work environment. Most business work demands internet connection to fulfil its tasks. The internet has moved from being a competitive advantage towards a minimum obligatory in the advanced business condition. In addition, the internet has significantly changed the way organizations work which may possibly increase profitability by expanding the capacity of correspondence and research. This radical reshaping of the business scene has not been absolutely positive. In spite of its development on employee efficiency, internet access can provide a gloomy side whereby the innovation could be effectively abused when the workers access the internet for other non-work reasons.

Therefore, the internet is widely recognised as a twofold edged sword, giving not only a great accommodation for workers and organizations but also presents numerous unexpected implications, particularly toward workers during working hours. The utilization of the internet for non-work intentions is theorised as a procedure of organisational misbehaviour which is called as cyberloafing (Aghaz & Sheikh, 2016). Precisely, the term of cyberloafing has been used in this study to illustrate as an act by workers who use the internet at work for personal activities. Cyberloafing does not entail an individual to be present physically at the workplace for quite some time. The workers can be those are involved in the act of cyberloafing even without leaving their work area. So, it is a challenge to distinguish the cyberloafing behaviour by observation.

The focus of this study is the knowledge workers. It is because, for knowledge workers, the dependence on the internet for daily work cannot be overstated (Waizenegger, Remus, & Maier, 2016). However, there is a list of detrimental effects that computer use can bring to knowledge workers, such as cyberloafing (Aghaz & Sheikh, 2016), Internet abuse (Campbell, Stylianou, & Shropshire, 2016; Yulihasri, 2012), personal web usage at work (Anandarajan, Paravastu, & Simmers, 2006; Anandarajan, Simmers, & D'Ovidio, 2011; Mahatanankoon, Igbaria, & Anandarajan, n.d.; Ramayah, 2010), cyberslacking (Hernández-Castro, 2016; Vitak, Crouse, & Larose, 2011), non-work related computing (NWRC) (Pee, Woon, & Kankanhalli, 2008; Son & Park, 2016) or workplace internet leisure (WIL) (Coker, 2011, 2013) among employees. What has been limited in literature is the clarification of the factors on how cyberloafing occurs during working hours and the consequence of cyberloafing towards knowledge workers (Koay, Soh, & Chew, 2017a; Ramayah, 2010; Yulihasri, 2012). Therefore, this study focuses on cyberloafing during working hours as knowledge workers devote much time for the cyberloafing by surfing the internet and moving from one Web site to another.

The discussion on cyberloafing would be incomplete without the preview of internet usage. Table 1-1 shows worldwide internet users and population statistics in the year 2017 according to the continents of the world. According to www.internetworldstats.com (2018), the number of internet users for the year 2017 reached 4.050 billion, equivalent to 51.8 % of the world's population. The internet users have increased around 0.483 billion compared to last year, and the growth of world internet users from the year 2000 till 2018 is 996%. In addition, the internet usage in future looks very promising as there is an ever-increasing number of individuals and organisations that have access to the internet.

Referring to Table 1-1, North America is currently the territory that has the highest rate of internet penetration with around 95.0% of the population in that region. However, in terms of world usage, Asia has the highest percentage of internet usage in the world (45.1%), although internet penetration stands at a mere 47.4% of the population compared to North America. Furthermore, Asia remains as the region that contains more than half of world's internet users, even though North America records a wider spread of Internet penetration among their populations. According to the statistics, the number of internet users has increased over the years, with the number of global internet users' growth of 996% for eighteen years.

Table 1-1 Internet Usage and Population Statistics (Update- 31 Dec 2017)

Worlds Region	Population (2018 Est.)	Population % of World	Internet Users (31 Dec 2017)	Penetration (% Population)	% Growth (2000-2018)	Usage % of World
Africa	1,287,914,329	16.90%	412,150,114	32.00%	9029%	10.20%
Asia	4,207,588,157	55.10%	1,992,360,400	47.40%	1643%	49.20%
Europe	827,650,849	10.80%	700,150,752	84.60%	566%	17.30%
Latin America	652,047,996	8.50%	424,628,388	65.10%	2250%	10.50%
Middle East	254,438,981	3.30%	147,117,259	57.80%	4378%	3.60%
North America	363,844,662	4.80%	345,660,314	95.00%	219%	8.50%
Oceania/Australia	41,272,958	0.60%	28,180,356	68.30%	269%	0.70%

World Total	**7,634,757,932**	**100.00%**	**4,050,247,583**	**51.80%**	**996%**	**100.00%**

Source: www.internetworldstats.com

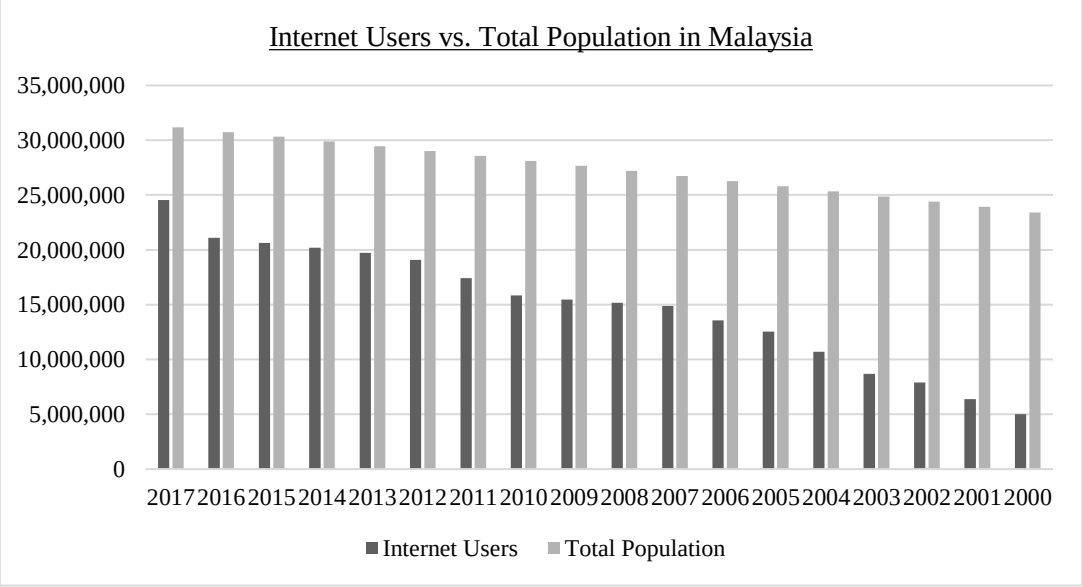
In the latest update of 30 June 2017, with the internet users of 24.55 million and internet penetration rate of 78.8%, Malaysia was ranked 11 out of 33 countries in the Asia with the highest internet users (www.internetworldstats.com, 2018a). According to Table 1-2, the internet penetration has increased 57.4% from the year 2000 to 2017.

Table 1-2 Malaysia Internet Usage and Population Statistics (Update -1 July 2017*)*

Year	Internet Users	Penetration (% of Pop)	Total Population	Population Change %	1 Year User Change (%)	1 Year User Change	Non-Users (Internetless)
2017	24,554,255	78.8	31,164,177	1.32	14.11	3,463,478	6,609,922
2016	21,090,777	68.6	30,751,602	1.39	2.2	453,560	9,660,825
2015	20,637,217	68	30,331,007	1.43	2.2	453,369	9,693,790
2014	20,183,848	67.5	29,901,997	1.48	2.3	450,888	9,718,149
2013	19,732,960	67	29,465,372	1.53	3.3	636,523	9,732,412
2012	19,096,437	65.8	29,021,940	1.57	9.6	1,666,925	9,925,503
2011	17,429,512	61	28,572,970	1.61	10.1	1,598,233	11,143,458
2010	15,831,279	56.3	28,119,500	1.66	2.4	368,770	12,288,222
2009	15,462,509	55.9	27,661,017	1.7	1.9	286,349	12,198,508
2008	15,176,160	55.8	27,197,419	1.75	1.9	287,212	12,021,259
2007	14,888,948	55.7	26,730,607	1.78	9.8	1,327,238	11,841,659
2006	13,561,710	51.6	26,263,048	1.81	8.1	1,017,269	12,701,338
2005	12,544,441	48.6	25,796,124	1.83	17.2	1,841,086	13,251,683
2004	10,703,355	42.3	25,332,026	1.86	23.1	2,006,231	14,628,671
2003	8,697,124	35	24,869,423	1.92	10.2	805,963	16,172,299
2002	7,891,161	32.3	24,401,977	2.01	23.6	1,505,227	16,510,816
2001	6,385,934	26.7	23,920,963	2.14	27.5	1,377,469	17,535,029
2000	5,008,465	21.4	23,420,751	2.28	77.7	2,190,679	18,412,286

Source: Self-compilation from www.internetlivestats.com and www.internetworldstats.com

Following this trend, it is rational to expect more internet users and higher internet penetration in the coming years. In addition, the trend of internet users versus total population in Malaysia is presented in Figure 1-1.

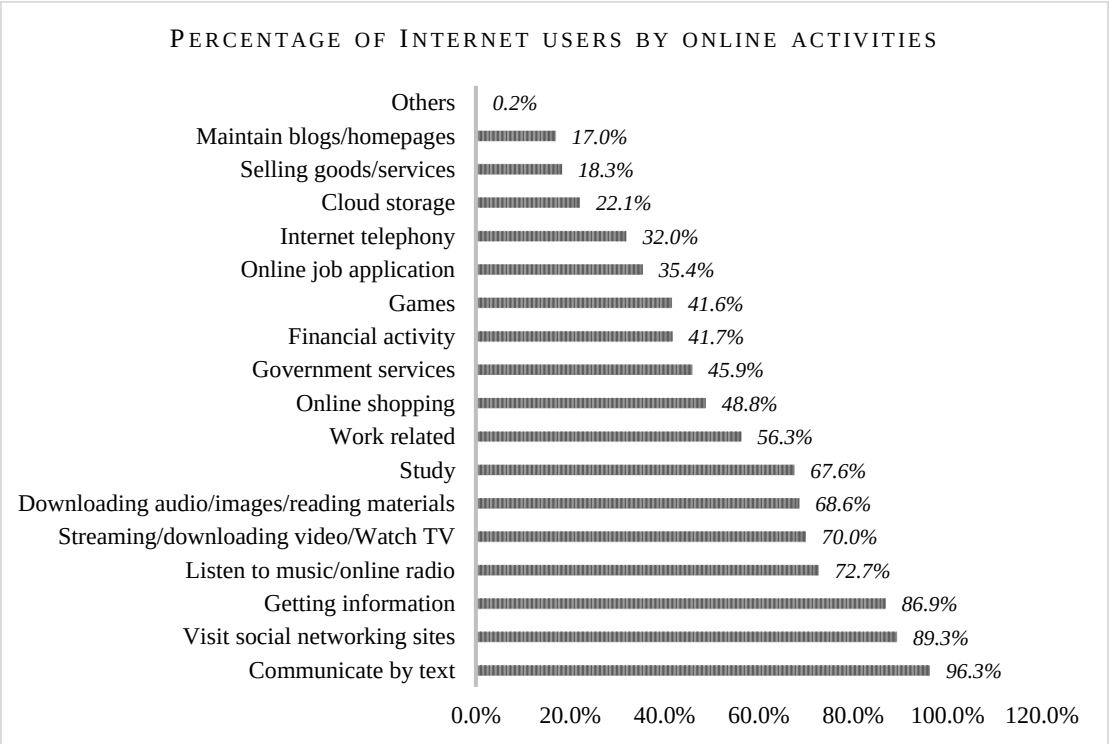


Source: Self-compilation from www.internetlivestats.com and www.internetworldstats.com

Figure 1-1 Internet Users vs. Total Population in Malaysia

Specifically, in Malaysia, a current report shows that there are more than 31 million of the total population in our country, and it also mentions that there are more than 78% of internet penetrations among active internet users. In addition, a current survey reported by Malaysian Communications and Multimedia Commission (MCMC) on internet survey for the year 2017 successfully recognizes the internet activities among Malaysian. As shown in Figure 1-2, almost all Malaysian internet users used internet for communication through texting via over-the-top (OTT) messaging platform (96.3%). This is followed by visiting social networking (89.3%) and getting information (86.9%). Next, Malaysian internet users also like to listen to music or listening to online radio, (72.7%), streaming and downloading (70%), downloading audio or image or reading material (68.6%). Other than that, Malaysian internet users also access internet to study (67.7%) and for work-related

purposes (56.3%). Moreover, Malaysian internet users also access online shopping website (48.8%) and government services website (45.9%). Malaysian internet users also do financial activity through internet access (41.7%) and play online games (42.6%). Finally, it is followed by other activities such as applying online job application, internet telephony usage, cloud storage, selling goods or services, maintaining blogs or homepages and other activities (see Figure 1-2).



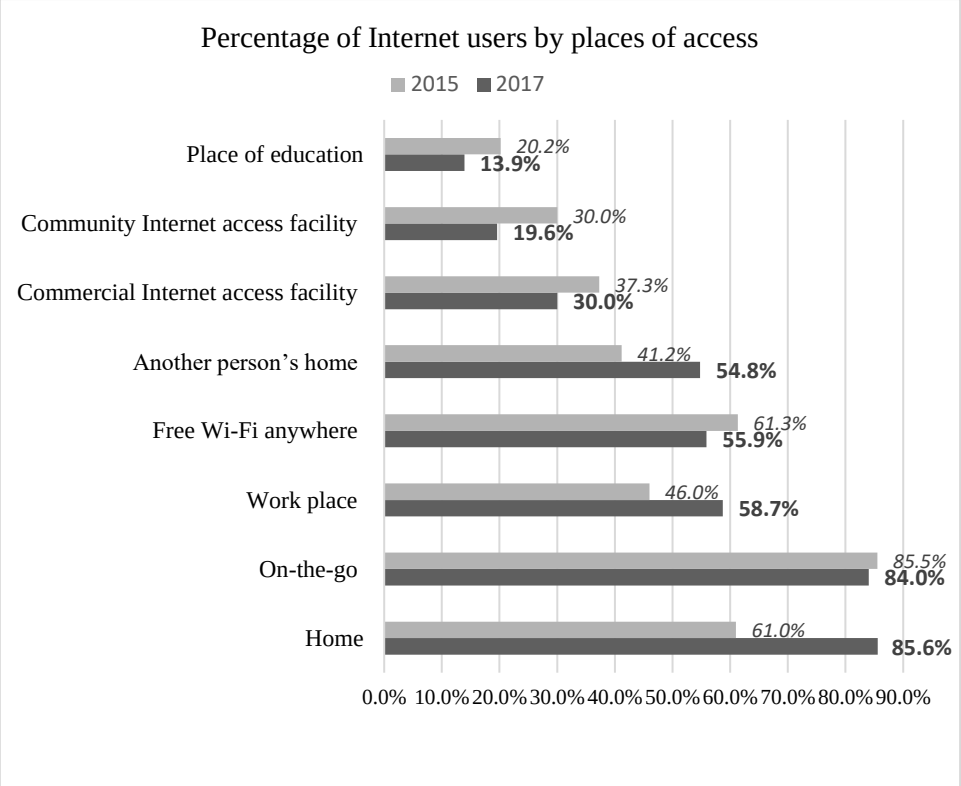
Source: Malaysian Communications and Multimedia Commission Malaysia (2017)

Figure 1-2 Percentage of Malaysian Internet users by online activities

In addition, with the internet users of 24.55 million out of 31 million of Malaysian total population and internet penetration rate of 78.8%, majority of Malaysian internet users assess the internet by using smartphone (89.4%) which has increased as compared to the year 2015 (89.3%). There is also an increasing percentage in assessing the internet through smart TV (6.7 % compared to 5.1% in the year 2015). Moreover, there is also an increasing usage of TV streaming box (5.6% compared to 4.2% in the year 2015). However, there is

declining trend for almost 10 percent decrease in assessing the internet through laptop or netbook (36.3 %) compared to the last two years (46.0%). It is followed by a decrease of one percent in assessing the internet through personal computer or desktop (29.3 %) as compared to the last two years (30.3%). Other than that, there is also a decreasing usage of devices such as tablet (18 % in the year 2017 compared to 24.8% in the year 2015) and feature phone (9.4% in the year 2017 compared to 15.8% in the year 2015). Finally, there is also a decreasing usage of game console (2.5% in the year 2017 compared to 2.7% in the year 2015) among Malaysian internet users (Malaysian Communications and Multimedia Commission Malaysia, 2017).

The discussion on cyberloafing would be interesting with the preview of place to access internet by the Malaysian internet users. Consistent with the cyberloafing issue nowadays, there is an increasing trend of accessing internet at workplace among Malaysians in the year 2017 with 58.7%; a significant growth from 46.0%. The 12.7% difference is shown in Figure 1-3. However, most Malaysia internet users access the internet at home with 85.6% compared to the last two years with 61.0%. Next, it is followed closely by internet on-the-go with 84.0%, which slightly decreased from the last two years. Other than that, Malaysian internet users also access the internet from free wifi everywhere (55.9%), from another person's home (54.8%), from the commercial internet access facility (30.0%) and from the community internet access facility (19.6%). Finally, the least frequent place for Malaysia internet users to access the internet is the place of education (13.9%) and it remains the same since the last two years (Malaysian Communications and Multimedia Commission Malaysia, 2017).



Source: Malaysian Communications and Multimedia Commission Malaysia (2017)

Figure 1-3 Percentage of Malaysian Internet users by places of access

In addition, the high adoption of smartphone usage among Malaysian internet users has shown that Malaysian internet users prefer the convenience and ease in interactivity for current digital era nowadays (Malaysian Communications and Multimedia Commission Malaysia, 2017). Moreover, with the huge increase of Malaysian internet users nowadays, the internet statistics are showing that usage of internet in the world is no longer a necessity, but Internet appears as the way of life. It happens because of the growing ICT development in Malaysia and also the support from the Malaysian government in further enhancing the technology usage among Malaysians.

Government initiatives assisted the rise in the internet users and Information Communication Technology (ICT) development in Malaysia. From the 1990's, the Malaysian Government has utilized ICT so that it becomes a highly competitive country in the globalised world. Furthermore, Tun Mahathir as the former Prime Minister proclaimed

Vision 2020 (Wawasan 2020) which sets an aim for Malaysia to accomplish the status of a completely developed nation by the year 2020. The vision emphasized on economic aspects, social prosperity and the ICT usage.

Realising the importance of ICT, the Malaysian Government introduced the development of MSC Malaysia which was previously known as Multimedia Super Corridor. Established in 1996, the purpose of MSC is to develop a world-leading technology environment that accelerates the progression of Malaysia into a knowledge-based society, by appealing and encouraging the companies to become leading-edge and world-class organisations. A multi-billion-dollar mega venture was constructed to advance the nations' ICT usage and to attract foreign direct investment (FDI) to become a world-leading cluster for information technology.

The aspirations for the MSC go even further than these economic goals. In order to support the technology, the government declared the Bill of Guarantee, whose Article No. 7 (MSC Malaysia, 2016) explicitly ensures that Internet content will not be censored. These offers attracted major foreign companies; Intel, AMD and DHL, to set up their regional headquarters there and assist local organizations to reinforce financial positions so that they could contend with worldwide organizations. Malaysia has already started to reap the benefits of its huge investment in the ICT sector through the establishment of the MSC. This formation has led to job creations for people in Malaysia in which MSC project was able to propose 10,000 technology-related jobs (Ali Salman, 2010).

According to MDEC (2016), the overall performance of MSC Malaysia has advanced from year to year. Currently, there are 3,881 companies awarded as MSC-status companies. MSC Malaysia received 19.8 billion ringgits for new ventures in which 45% came from international direct investment that revealed continued trust and confidence of foreign

investors' in Malaysia. Furthermore, MSC Malaysia Annual Report 2015 stated that employments grew 7.4% with annual salary growth of 13.7%. The workers of MSC Malaysia earn about 2.5 times higher as compared to the country's average salary. This increment is a reflection on the substantial number of occupations that are knowledge based and considered as high value.

According to MSC Malaysia Annual Report 2015, there are 158,549 jobs in which 10,981 as new jobs; 86.4 % local workers and 13.6% foreign workers. The steady growth (7.4%) indicates that MSC Malaysia offers healthy job market specifically in high-value jobs. Furthermore, there seems to be a positive association between the FDI and human capital level of MSC-status companies which is specifically known as knowledge workers. It is aligned with Malaysia's objective to be a country with high-income economy led by expert knowledge workers in 2020.

The knowledge workers are becoming an important part of the transformation of Malaysia with Vision 2020 and MSC Malaysia of becoming a knowledge-based economy (MDEC, 2016). However, in information society nowadays, the internet has become the constant companion of knowledge workers and can have some effects on their work productivity and produce online security threats to the organizations. Nevertheless, significant with this study, knowledge workers have been chosen as the target respondents because the findings from earlier studies showed that more educated employees are spending more time on personal internet use at work (Hartijasti & Nur Fathonah, 2014, 2015b). Therefore, it is important to assess the influencing factors of cyberloafing behavior and the consequences of cyberloafing behavior among knowledge workers in MSC Malaysia.

1.2.1 Cyberloafing in Workplace

In recent years, there has been an increasing internet usage and it has altered the way we live and the way we work. More recently, in countries where there is a use of the internet on a large scale, some changes have been observed in the content and context of work as beyond the boundaries between personal and professional life approach (König & Caner De La Guardia, 2014). In particular, a person is firmly influenced by the development and expanding utilization of the internet; thus, the person constantly tends to combine personal life with professional matters due to the complication in balancing between work and individual life since work routine never seems to end. As a result, workers tend to cyberloaf in the workplace which has become a growing phenomenon to recent days.

Instead of being a further boost for the employees' productivity, technology at work also has its challenges. Table 1-3 shows the top 10 of time-wasting activities at work for the year 2016 versus the year 2005. Specifically, it is a comparison for the time wasting activities at work for the year 2005 (Malachowski, 2005) with the latest trend of the time wasting at work for the year 2016 (CareerBuilder, 2016). For more than a decade ago, cyberloafing contributes approximately 45% of all time-wasting activities at work. However, the result of the wasting time at work in the year 2005 did not have much different with the result in the year 2016 on the context of time wasting on accessing the internet (see Table 1-3).

Table 1-3 Time Wasting Activities at Work

Time Wasting Activities at Work				
The year 2016 & 2005				
No	2016	%	2005	%
1	Cell phone or texting	55	Surfing Internet	44.7
2	The Internet	41	Socialising with co-worker	23.4
3	Gossip	39	Conducting personal business	6.8
4	Social media	37	Spacing out	3.9
5	Co-workers dropping by	27	Running errand-off premises	3.1
6	Smoke breaks or snack breaks	27	Making personal phone calls	2.3
7	Email	26	Apply jobs	1.3
8	Meetings	24	Planning personal events	1.0
9	Noisy co-workers	20	Arriving Late/Leaving Early	1.0
10	Sitting in a cubicle	9	Others	12.5

Source: Self-compilation from CareerBuilder (2016) and Malachowski (2005)

A past study by CareerBuilder in 2016 included 5,217 of the United States employees in private sector associations across the entire industry and company sizes. The findings demonstrated that the highest reason for lack of productivity among their representatives is being occupied in phone interactions and internet connections with the percentage of 55% and 41% respectively. They found that more than 8 workers out of 10 workers (83%) possess smartphone and 82% of the workers with smartphones keep them within eye contact at work. Therefore, this result has reflected the current cyberloafing phenomenon at work. In contrast, the study discovered that only 10% of workers with smartphones confessed that it diminishes their efficiency at work. In particular, Table 1-4 shows the employee's activities when using their smartphones.

Table 1-4 Employees Activities on the Smartphone

Employees Activities on the Smartphone		
No	Year 2016	%
1	Personal messaging	65
2	Weather	51
3	News	44
4	Games	24
5	Shopping	24
6	Traffic	12
7	Gossip	7
8	Sales	6
9	Adult	4
10	Dating	3

Source: Self-compilation from CareerBuilder (2016)

Additionally, previous studies have also shown that cyberloafing can also occur among employees by using personal mobile internet devices such as smart phones for the cyberloafing activities (Jamaluddin, Ahmad, Alias, & Simun, 2015). Furthermore, there is a surprising finding from the CareerBuilder research which concluded that majority of the employees who own smartphones (65%) do not install work emails on their smartphones. For the workers who access their smartphones during work for non-work use, they spent their time on non-work-related sites during work as presented in Table 1-4. The highest activity among employees on their smartphone was personal messaging (65%). Thus, the impact of these activities has led to having a lost of two hours or more in employees' productivity. This is consistent with the latest report by Malaysian Communications and Multimedia Commission Malaysia (2017) which reported that majority of Malaysian internet users are using internet to communicate by text. However, to date there has been

few studies in Malaysian context that provides empirical evidence on the specific internet usage activities among Malaysian employees.

With the progress of technology and simple access to the web, the employees surplus 89% of their working time at the office each day in the year 2014 while 20% of the employees intensify their work time as compared to the previous (Gouveia, 2014; Mercado, Giordano, & Dilchert, 2017). The increasing time was derived from employees spending more time for cyberloafing activities at work. According to a survey by Salary.com, they found that 31% of the employees' waste around 30 minutes daily; 31% of employees waste around 1 hour daily; 16% of employees waste around 2 hours daily; 6% of employees waste around 3 hours daily; 2% of employees waste around 4 hours daily; and 2% of employees waste around 5 or more hour daily. As a conclusion, it produces 4% of employees' waste with at least half a day for non-work-related task including cyberloafing activities.

Furthermore, Gouveia (2014) investigated where the waste has gone to. Consequently, a vast amount of employees' time was spent on cyberloafing activities. It was discovered that Google is the greatest online time-waster (24%), trailed by Facebook (23%), LinkedIn (14%), Yahoo (7%), Amazon (2%), Youtube (2%), ESPN (2%), Pinterest (1%), Twitter (1%) and Craiglist (1%). Moreover, based on demographic profile, men (9%) squander additional time than women (87%), single workers (91%) squander additional time than married workers (88%), while the workers aging between 26 to 39 years old are the highest offenders of time-waster. Based on the findings of the survey, it demonstrated that cyberloafing among workers takes the form of work productivity loss. As such, advanced investigations in cyberloafing ought to be conducted as to keep pace with the rapid progress of the Internet and its innovation.

In Malaysia context, Ramayah (2010) found that one of the organisations in Malaysia displayed that the workers spent an average of 25% in their daily work time to retrieve internet for personal purposes and the study confirmed that cyberloafing leads to inefficiency. Furthermore, a more recent study by Kapahi, Choo, Ramadass, and Abdullah (2013) found that the impact of cyberloafing has decreased the work productivity with 59% of the respondents suffering from loss of performance. In addition, cyberloafing has also interrupted the work concentration and negatively impacted on daily activities at work with 48% having difficulty to stay focus.

Recently, the internet user's survey 2017 by Malaysian Communications and Multimedia Commission found that majority of Malaysian internet users are likely to use the internet to communicate by text with 96.3%, and it grew significantly from 81.1% in 2015. As compared to the report by Malaysian Communications and Multimedia Commission Malaysia in the year 2015, it showed that majority of Malaysian internet users assess the internet for getting information with 88.2%, which slightly decreased in 2017 with 86.9%. It is followed by visiting the social networking sites with 89.9% compared to the last two years on the same activity with 87.1%. Next, Malaysian internet users also like to listen to music or listening to online radio, (72.7%), streaming and downloading (70%), downloading audio or image or reading material (68.6%). Other than that, Malaysian internet users also access internet to study (67.7%) and work-related purposes (56.3%). Moreover, Malaysian internet users also access online shopping website (48.8%) and government services website (45.9%). Malaysian internet users also do financial activity through internet access (41.7%) and play online games (42.6%). Finally, it is followed by other activities such as applying online job application, internet telephony usage, cloud storage, selling goods or services, maintaining blogs or homepages and other activities. Up to now, little attention on cyberloafing activities among Malaysian employees has been

addressed. Until recently, it was more than a decade ago that Malaysian employees experienced cyberloafing behavior. Therefore, the evidence here signals that Malaysian internet users' cyberloafing has become extensive from time to time and this requires immediate investigation as to know the real situation on the consequences of cyberloafing behaviour.

1.3 Research Problem

Overall, the level of cyberloafing behavior for the international contexts and local contexts is remain inconclusive. However, only a few researchers have reported the level of cyberloafing in their study. For example, cyberloafing level among employees in Singapore was at moderate level (Lim & Chen, 2009). Additionally, cyberloafing level for Netherland employees context was at moderate level, and the internet use for cyberloafing show that the cyberloafing behavior is incidentally used by employees and indicating that employees occasionally used these cyberloafing behavior (Doorn, 2011). However, a fews researcher has report the level of cyberloafing behavior in the Malaysian context. Particularly, the internet use for cyberloafing among employees in Malaysia was at moderate higher level (Yulihasri, 2012). Additionally, according to Ahmad and Omar (2017) the extent of cyberloafing was moderate among 260 Malaysian employees from public organization. Precisely, employee involvement in cyberloafing behavior has significant implications for organizations as these behaviors are increasingly becoming a pervasive problem. This statistic shows that cyberloafing behavior definitely does exist among Malaysian employees. Therefore, the cyberloafing behavior among employees will be a huge challenge to the company, and potentially endanger the productivity of an organization.

Several research has disclosed that cyberloafing has existed extensively in the workplace; thus, it has caused a huge economic loss in most of the organisations. Specifically, the consequences of cyberloafing can be considered severe because of productivity losses among employees (Abdullah, Bajuri, & Lumpur, 2014; Henle & Blanchard, 2008; Huma, Hussain, Ramayah, & Malik, 2017; Humphrey & Pollack, 2015; Lim & Teo, 2005; Moody & Siponen, 2013; O'Neill, Hambley, & Bercovich, 2014; F Quoquab, Mahadi, & Abd Hamid, 2015; Farzana Quoquab, Salam, & Siti Halimah, 2015; Wang, Tian, & Shen, 2013). Furthermore, the impact of cyberloafing has been estimated to having a loss of billions of dollars annually (Anandarajan, 2002; Hartijasti & Nur Fathonah, 2015b; Jia, Jia, & Karau, 2013; Moody & Siponen, 2013; Ozler & Polat, 2012; Ramayah, 2010; Restubog et al., 2011; Wang et al., 2013). Lim and Chen (2012) mentioned that approximately 34 million of America's employee's cyberloaf at work and this situation has led to the loss of productivity time for 200.6 million hours per week. In addition, the United Kingdom employees use 40% of their time to cyberloaf and it has cost about £154 miilion a year. As a result, the consequence of cyberloafing is tremendous. Specifically, it can cause a more serious harm on employees' productivity. In a critical condition, cyberloafing could even decrease the benefits of the organisations. Therefore, the evidence of work productivity losses has shown that this is a vital issue and deserves an immediate and effective study in order to understand the whole phenomenon of cyberloafing behaviour among workers in Malaysia and suggests a resolution to solve or control the problem.

A study by Wagner, Barnes, Lim, and Ferris (2012) measured the loss of productivity by observing a number of time employees spent for cyberloafing activities at work. Accordingly, the employees suffer from a decrease in productivity of 20 %. In addition, this study believed that the impact of cyberloafing towards work productivity can also be

moderated by the duration of cyberloafing break. Specifically, the existing literature on the duration of cyberloafing break or the time spent on cyberloafing has a contradict finding. Specifically, excessive cyberloafing leads to decreasing in work productivity, and low cyberloafing leads to increasing work productivity among employees. Consequently, this study is conducted to extend the examination of findings for further understanding on the moderating effect of the duration of cyberloafing break on work productivity and work stress.

Furthermore, previous studies have shown that cyberloafing could lead to vulnerabilities and other online security threats to the organizations. This is important because the internet infrastructure within an organization is an important driver in order to have an optimum performance of the latest modern organization's productivity. Also, cyberloafing activities such as sending personal emails, files or video dowloading, social networking and other activities could affect the internet infrastructure in the organization which could allow the malware and virus attack towards the organization ("Internet Security Threat Report," 2017). Specifically, the cyberloafing activities could lead to threaten the information security in the organization and could threaten the business information such as hacker attack by sending malware and virus in order to distract business processes. Therefore, the consequences of cyberloafing behaviour are tremendous and it is able to distrupt the survival of the organization.

Despite the above-mentioned consequences of cyberloafing behavior in work productivity and online security threats to organizations, cyberloafing is also speculated to have a devastating impact on personal consequences such as work stress. Previous studies have stated that it is prominent to control and manage the work stress because employees may lose their work motivation and experience in extreme fatigue and also lower the job

performance (Henle & Blanchard, 2008; Ozler & Polat, 2012). However, some controversies have arisen due to cyberloafing behaviour which can lead to increase and decrease of work stress among employees. This is because some researchers suggest that cyberloafing can have negative and positive consequences for work stress. Furthermore, since the consequences of cyberloafing on employees' work stress remain questionable, therefore this study is set to take a step ahead in understanding the consequences of cyberloafing behaviour on personal consequences perspectives and examines this situation for further understanding on the moderating effect of the duration of cyberloafing break.

In order to truly understand cyberloafing, the antecedents of cyberloafing must be investigated continuously. Understanding the antecedents to cyberloafing enables action that can be taken to minimise or solve the problem from the root cause. Most people believe that internet usage for cyberloafing is acceptable, and this is not wrong to be done. A previous study by Lim and Teo (2005) found that the respondent believed that cyberloafing does not hurt anyone, and they also believe that cyberloafing does not hurt the company too. Furthermore, the same area of study in Malaysian context by Ahmad and Jamaluddin (2010) indicated that the most of the respondents viewed cyberloafing as could be wrong, while less than 10% of the respondents viewed cyberloafing as not wrong at all, and only 12% of respondents are of the opinion that such acts are not wrong. In addition, the respondents were not sufficiently certain to confer that cyberloafing is wrong (Ahmad & Jamaluddin, 2010). Therefore, due to all these perceptions by Malaysian employees, it seems that they are not sure about cyberloafing. Thus, it is important to access its intention from the aspects of affect, social factor, and perceived consequences that will affect cyberloafing among Malaysian employees in order to further understand this matter.

Jamaluddin, Ahmad, Alias, and Simun (2015) reported that 42% of the Malaysian respondents claimed they are using the internet on their own mobile internet gadgets at the workplace for personal reason, and 29% of the respondents have used the internet for cyberloafing and official reason. It should be noted that only a small percentage used internet for an official reason only (4%). Moreover, Restubog et al. (2011) indicated that about 30% to 65% of Internet usage at work is for cyberloafing. Based on the characteristics of internet which include being worldwide, widely accessible, and interconnected computer network, people who utilise it for personal activities will naturally find it convenient to use it during working hours or at workplace for similar personal purposes. Thus, the recurrence of such behaviour may lead to cyberloafing habit. The habit was found to be substantially related to Internet usage (LaRose, Lin, Eastin, & To, 2003). Therefore, it is acceptable to assume that habit will influence cyberloafing. Also, a study by Lee, Lim, and Wong (2005) indicated that habit is one of the unconscious behavioural factors. It is because they consider the situations in which behaviour is repeatedly and satisfactorily executed and becomes a regular one. Therefore, the habit to cyber loaf is no longer under a rational decision-making process. Taking these issues into account, it is important to examine the habit to cyber loaf for a personal reason as an antecedent of cyberloafing.

In addition, a study by Jamaluddin et al. (2015) on personal Internet use among employees in Malaysia has reported that facilitating conditions did not significantly contribute towards cyberloafing behavior among employees. Furthermore, there is a possibility that the policies implemented by the organisations are inadequate and do not clearly specifies the activities that are considered intolerable (Ahmad & Jamaluddin, 2010). Anandarajan and Simmers (2004) also reported that employees in Malaysia contended that organisation should not block the access to certain websites. Therefore, it is important to examine why facilitating conditions are contradicted in the Malaysia

environment and international context. Hence, one of the areas of interest in this study is to understand the influencing factors of cyberloafing from the perspective of facilitating conditions due to the lack of environmental or situational constraints that may prevent the individual from performing the desired behaviour.

A recent study by Askew et al. (2014) showed that the ability to hide cyberloafing is one of the main reasons that lead to the activity which provides the encouraging environment for cyberloafing. Moreover, Askew also found that the strongest predictor of cyberloafing was the ability to hide cyberloafing (Askew, 2012). Consistent with the ability to hide cyberloafing factors as introduced by Askew, it should be noted that cyberloafing does not require employees to be physically absent from the workplace as they can be involved in cyberloafing even without leaving their work sites. Thus, it is tough to detect employees' cyberloafing through observation. These reasons have led this study to further understand the context of Malaysian employees on the ability to hide cyberloafing. To date, there has been less studies that examined this factor as an antecedent of cyberloafing among Malaysian knowledge workers context.

Finally, this study sets out to investigate the antecedents and consequences of cyberloafing among knowledge workers in Malaysian MSC companies. In order to provide a holistic view on cyberloafing issues, this study addresses both antecedents (intention, habit, facilitating conditions and ability to hide cyberloafing) and consequences of cyberloafing (work productivity, online security threats to the organizations, and work stress). Specifically, duration of cyberloafing breaks is examined as a moderating variable between cyberloafing and consequences of cyberloafing (work productivity and work stress).

1.4 Research Questions

The objective of this study is to study cyberloafing among knowledge workers by adopting the Theory of Interpersonal Behavior (TIB) (Triandis, 1977) with the antecedents of cyberloafing (intention to cyberloaf, habit, facilitating condition and ability to hide cyberloafing) and the Consequences of Deviant Usage of Internet Technology (DUIT) (Mahatanankoon, 2002) in order to investigate the consequences of cyberloafing in terms of work productivity, work stress and online security threats to the organizations. Specifically, this study attempts to fulfil the following research questions:

1. Does affect towards cyberloafing encourage knowledge workers' intention to cyberloaf?
2. Does social factor encourage knowledge workers' intention to cyberloaf?
3. Does perceived consequences encourage knowledge workers' intention to cyberloaf?
4. Does knowledge workers' intention to cyberloaf lead to actual cyberloafing behavior?
5. Does knowledge workers' habit of using the internet lead to actual cyberloafing behavior?
6. Does facilitating conditions lead to actual cyberloafing behavior?
7. Does knowledge workers' ability to hide cyberloafing lead to actual cyberloafing behavior?
8. Does actual cyberloafing behaviour result in work productivity?
9. Does actual cyberloafing behaviour result in work stress?
10. Does actual cyberloafing behaviour result in online security threats to the organizations?

11. Does the negative relationship between actual cyberloafing behaviour and work productivity will be stronger for the excessive duration of cyberloafing breaks?

12. Does the positive relationship between actual cyberloafing behaviour and work stress will be stronger for the excessive duration of cyberloafing breaks?

1.5 Research Objectives

The main objective of this study is to examine the antecedents and consequences of cyberloafing among knowledge workers in MSC-status companies. Based on the above research questions, this study embarks on the following specific research objectives:

1. To examine the relationship between affect towards cyberloafing and knowledge workers' intention to cyberloaf.
2. To examine the relationship between social factors and knowledge workers' intention to cyberloaf.
3. To examine the relationship between perceived consequences and knowledge workers' intention to cyberloaf.
4. To examine the relationship between knowledge workers' intention to cyberloaf and actual cyberloafing behaviour.
5. To examine the relationship between knowledge workers' habit of using the internet and actual cyberloafing behaviour.
6. To examine the relationship between facilitating conditions and actual cyberloafing behaviour.
7. To examine the relationship between knowledge workers' ability to hide cyberloafing and actual cyberloafing behaviour.
8. To examine the relationship between actual cyberloafing behaviour and work productivity.

9. To examine the relationship between actual cyberloafing behaviour and work stress.
10. To examine the relationship between actual cyberloafing behaviour and online security threats to the organizations.
11. To determine whether the negative relationship between actual cyberloafing behaviour and work productivity will be stronger for the excessive duration of cyberloafing breaks.
12. To determine whether the positive relationship between actual cyberloafing behaviour and work stress will be stronger for the excessive duration of cyberloafing breaks.

1.6 Significance of the Study

The significance of the study can be seen from both theoretical and practical perspectives. Firstly, this study contributes to a more comprehensive understanding of cyberloafing by i) providing an understanding on antecedents of cyberloafing; ii) providing an understanding on consequences of cyberloafing; iii) extending the current studies of cyberloafing into knowledge workers in MSC-status companies; iv) synthesising and integrating two theoretical lenses (Theory of Interpersonal Behavior and Deviant Use of Internet Technology) as the basis of the research model in this study.

Secondly, this study provides a mechanism to better understand the moderating effect of the duration of cyberloafing breaks on the relationship of cyberloafing and its consequences which refer to work productivity and work stress. This study is the first to demonstrate the moderating effect of the duration of cyberloafing breaks on knowledge workers cyberloafing behaviour. Also, this study extends the TIB and DUIT by examining the duration of cyberloafing breaks as the moderating variable that affects the consequences of cyberloafing (work productivity and work stress).