Cyberloafing Behavior and Its Effects Towards Academic Achievement Among Students in Higher Education Institution

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ABSTRACT

The objective of this study is to analyze the purposes of students in higher education institutions using a digital device for non-academic purposes. The researcher collected the research data from 370 undergraduate students studying at Universiti Malaysia Perlis using an online questionnaire that assessed with cyberloafing scale of Akbulut et al. (2016), which contain five dimensions of cyberloafing behavior: sharing, shopping, realtime updating, access to online content and gaming/ gambling. The relationship among the factor of gender towards the cyberloafing behavior and relationship between the cyberloafing behavior and academic achievement of undergraduate students have been tested by Pearson's correlation test. Hypothesis Ha1 was rejected because there is no association between the gender factor and cyberloafing behavior. Hypothesis Ha2 was accepted because there is a significant relationship between cyberloafing behavior and academic achievement of undergraduate students. This study aids in adapting and validating the cyberloafing scale in the Malaysian environment under university students of the public sector, as most of the studies that applying cyberloafing behavior in the education setting are in Turkish which are not suitable to apply in the cultural context of Malaysia.

Keywords: Cyberloafing, New Media Issues.

1. RESEARCH BACKGROUND

Technological advances contribute to the efficiency and effectiveness of the workplace in many ways, such as increasing accessibility of vital data, catalyzing task completion, and enhancing collaboration in various ways, including enabling virtual teamwork, especially in the situation of the COVID-19 crisis (Wang *et al.*, 2020). However, jobs with frequent and convenient information technology, such as high-speed data access may allow employees to misuse such technologies for personal use, leading to decreased work productivity (Mercado *et al.*, 2016). Cyberloafing is defined as the employee's behaviors that involve using information and communication technologies to engage in network behaviors instead of working (Mercado *et al.*, 2016).

Cyberloafing behavior today is not only limited to the working environment for non-professional use of company Internet access but also has been applied in the education sector to enhance students' learning process. Students nowadays are allowed to bring their own digital devices such as laptops and smartphones into the classroom as part of their tool-using activities. Educators expect students to use the Internet access provided by educational institutions and digital devices for academic purposes such as searching for information for their assignments or answering the online quiz. Nevertheless, some studies found out that students engaged in multitasking activities such as playing online games and texting during lecture time, which can distract them from learning (Gozum *et al.,* 2020). Therefore, the concept of cyberloafing and the increasing use of

technology in educational institutions has become an issue that concerns the educational sector. Due to the rapid development of information and communication technology, higher educational institutions need to treat cyberloafing behavior as a serious threat in the learning process of students and resolve it. This research is to identify the types of cyberloafing behavior among students in higher educational institutions their effects on academic achievements.

1.1 Problem Statement

The researcher often observes that students open programs that are not related to the academic purpose while waiting for the lecturer to start the multimedia lab class. Students are expected to grab the chance to open editing software or programming software and practice their skills while waiting for the lecture session to start. Multimedia labs or PC labs are effective platforms for task-based learning because equipment provided by higher educational institutions are professional which students rarely afford to buy.

Besides that, the researcher found out that students misuse the Internet accesses provided by the educational institutions for their personal use, such as watching entertainment videos on social media platforms. According to the Internet Users Survey 2020, 93.3% of Internet users spent their most time on social media for social purposes rather than getting useful information (68%) (Malaysian Communications and Multimedia Commission, 2020). Students may not commit to accomplishing their learning outcomes when they use the online platform to fulfill their personal needs rather than to complete their learning tasks in the lecture.

Recent studies are mostly focused on cyberloafing behavior in working environment settings instead of educational settings; research among higher educational institutional students in Malaysia is insufficient. Therefore, the study aims to identify the types of cyberloafing behavior among the university students and how they affect their academic achievements.

1.2 Research Questions

a) What are the purposes of students in higher education institutions using a digital device for non-academic purposes?
b) What is the level of cyberloafing behavior happened among the students in higher education institutions?
c) What are the effects of cyberloafing behavior on the academic achievements of students in higher education institutions?

1.3 Research Objectives

a) To analyze the purposes of students in higher education institutions using a digital device for non-academic purposes.
b) To identify the level of cyberloafing behavior happened among the students in the higher education institution.
c) To investigate the relationships between effects of cyberloafing behavior towards academic achievements of students in the higher education institution.

1.4 Research Hypothesis

H_1: There is a significant relationship among the factor of gender towards the cyberloafing behavior of higher education institutions' students.
H_2: There is a significant relationship between cyberloafing behavior and students' academic achievement in the higher education institution.

1.5 The Importance of Study

The results of this study are expected to contribute to the theoretical aspect TPB. Researchers in the future are able to understand the suitability of this theory applied in the context of cyberloafing in educational settings. The results of this study are also expected to give a clearer picture in eliminating the cyberloafing behavior effectively in the future. The higher educational institutions can use the results of this study to understand and prevent the negative effects of cyberloafing behavior, educators can provide better learning opportunities for students.

2. CYBERLOAFING

According to Akbulut *et al.* (2017), cyberloafing is defined as the intentional and redundant use of Information and Communication Technologies (ICT) for non-work purposes during working hours. Nevertheless, with the advancement of information technology, nearly everyone has personal access to the Internet on their cell phones. In this context, it could be more fitting to term cyberloafing as workers' actions with their personal or corporate Internet and computers that have performed non-business activities on the Internet (such as smartphone, personal laptop, tablet) during the working hours (Aybas & Güngör, 2020). It is considered a counterproductive behavior in the workplace that negatively affected employees' work performances, leading to low productivity in the workplace and causing wasting time and resources of the organization. The following segments will focus on cyberloafing in academic contexts, as the scope of this paper is to investigate the explanations for cyberloafing activities in educational settings without avoiding their positive and negative impact on students' performances.

2.1 Cyberloafing in Learning Environment

Information and Communication Technologies (ICT) have become a crucial part of our daily lives. These technologies are applied in the education sector to enhance the students' learning. Higher education institutions affiliated with the Ministry of Education prepared ICT laboratories, equipped with high-processing RAM computers with wired and wireless network access for students' convenience in learning IT skills via the latest technologies. Students are allowed to bring along their digital devices such as laptops and smartphones as an integral part of engaging in their lecture activities (Koay, 2018). The mobile internet has been an integral part of college students. By providing students access to more timely, appropriate, and up-to-date information, the use of Internet technology will positively enhance learner outcomes (Wu *et al.*, 2018). Nevertheless, it was observed that students misuse the Internet access and the facilities provided by the education institutions to do non-academic related things such as watching YouTube videos for entertainment, checking social media platforms' posts, and taking selfies and post to their social media accounts (Yaşar & Yurdugül, 2013). Therefore, there is a need to study the factors of cyberloafing behavior and how it affects the students' academic performances.

From the recent studies, Turkey, America, and China were the countries where most papers on cyberloafing were conducted. Turkey has more studies from other countries studies in cyberloafing in the education setting. Research studies on cyberloafing behavior are mostly focused on workplace settings but not in education settings. To be honest, there is a lack of research on cyberloafing behavior and its effects on academic achievements, especially among the students of higher education institutions in Malaysia. One research from private universities in Malaysia naming 'Assessing Cyberloafing Behaviour among University Students: A Validation of the Cyberloafing Scale' from Koay in 2018, focused on the prevalence of cyberloafing activities and the validation of the cyberloafing scale in the Malaysia context. He deduced that students spend more time sharing-related activities and least time on gambling or gaming-related activities among the cyberloafing activities in the classroom by using questionnaires containing descriptive analysis and exploratory analysis to collect data.

However, Koay's study cannot be applied to the entire Malaysian student population as the data was collected from a private university only. Besides, recent studies are mostly focused on the representation of cyberloafing through demographic variables such as gender and internet usage duration (Arabci, 2017; Durak, 2019; Akbulut *et al.*, 2015). Most of the research findings show that males have higher rates involving in cyberloafing behavior especially in gaming (Baturay & Toker, 2015; Yilmaz *et al.*, 2015). However, some researchers argued that there was no significant difference in cyberloafing behavior by gender variable (Aybas & Güngör, 2020). Therefore, the demographic variable of gender will be tested in this study to know whether it was related to the cyberloafing behavior among the students of higher education institutions.

2.2 Cyberloafing and Students' Performance

Cyberloafing behaviors are always highlighted as one of the negative implications of the advancement of the technology implemented in the education sector. Researchers found that students who spend more time in social media networks in their cyberloafing behavior during the lectures obtain negative effects on their academic performances in the classroom (Arabaci, 2017). This may cause students to move sequentially between various sources of course-related knowledge or simultaneously process certain information at the cost of successful learning in the classroom. Besides that, students who show social media addiction have continuously concentrated on social media environments and cannot spare adequate time for their academic studies and duties and postpone their continuing academic studies. To exhibit cyberloafing operations, students thus giving up their academic duties.

Some researchers deduced there was no significant relationship between academic performance of students and the cyberloafing behavior (Wu *et al.*, 2020) and some of the researchers even found out that cyberloafing behavior can contribute benefits toward students' academic performance (Wu *et al.*, 2018). These researchers found out that cyberloafing in appropriate amount of time will help students heal because stressors are minimized as they interact with others, facilitating recovery by providing a relaxation experience. Thus, students are able to perform their academic goals ultimately after their boredom and tiredness was reduced by the cyberloafing activities.

2.3 Theory of Planned Behavior

The Theory of Planned Behavior (TPB) originated in 1980 as the Theory of Reasoned Action to predict the intention of a person to participate in a behavior at a specific time and location. The theory was meant to clarify all behaviors that people had the potentials to develop self-control over. This model's critical component is behavioral intent; behavioral intentions are influenced by the likelihood that the behavior will have the expected outcome and the subjective evaluation of the risks and benefits of that outcome (Ajzen, 1991). TPB posits that three main antecedents cause behavior: subjective social norms, attitudes, and perceived behavioral control (Ajzen, 1991). The theory also posits that the formation of intentions mediates these three antecedents' influence to engage in the behavior (Ajzen, 1991).

The theory posits that perceptions of referent others' cyberloafing behaviors, attitudes towards personal computer use at work, and perceived behavioral control regarding cyberloafing contribute or inhibit the formation of intentions from doing cyberloafing. Regarding cyberloafing, the person's self-efficacy to navigate to their preferred websites at work is one way to conceptualize perceived behavioral regulation (Askew *et al.*, 2014). Theoretically, this skill relies on three factors: the ability to navigate to the requested website by entering in the URL or using a search engine such as Google to navigate to the website, the existence or absence of website blocking technology at work, and the ability to override blocking technologies whether they occur by using a proxy server or through some other means. This overall ability, which is defined non-linearly by the above three variables," self-efficacy of website access" (Askew *et al.*, 2014). To

date, cyberloafing researchers have not studied the self-efficacy of website access, but a similar construct, business tracking, has and has been shown to have only a limited association with cyberloafing. This theory will be used to conduct this study because the formation of intentions to engage in cyberloafing behavior can mediate the attitudes towards personal network use at education institutions.

3.   RESEARCH APPROACH

This research is using a quantitative approach to study cyberloafing behavior and its effects on academic achievements among students in higher education institutions. The researcher aims to define existing circumstances of how cyberloafing behavior affects undergraduate students' academic achievements by undertaking quantitative research study, to create relationships between variables, and often to try to understand causal relationships between variables.

3.1 Design of Study

The descriptive and correlational research methods have been used in this study. Descriptive research method is used in this study to define the magnitude of cyberloafing behavior and its characteristics. Descriptive research attempts to explain an established variable's current state (Lazaraton, 2005). This research program is structured to provide knowledge about cyberloafing behavior comprehensively. The correlational research method is also used in this study to investigate the relationships between the variables. Researcher wants to know the relationships between cyberloafing behaviors and academic performances of students in higher education institutions. This study design will consider data trends and patterns, but it does not go too far to prove explanations for these found patterns in its review.

3.2 Population and Sampling

The population of this study is 10,664 University Malaysia Perlis undergraduate students, taken from Student Admissions & Records Unit of Universiti Malaysia Perlis (UniMAP) 2019/2020. The convenience sampling method was used in this study because the participants are selected for, they are willing and available to be studied. The sample population of this study is three hundred and seventy (370) students among undergraduate students in University Malaysia Perlis chosen based on the table of Krejcie and Morgan (1970).

3.4 Instrumentation for Data Collection

An online questionnaire will be used as instrument in this study, titled 'Cyberloafing Behavior and Its Effects Towards Academic Achievement Among Students in Higher Educational Institution'. The online questionnaire contains 2 parts; Personal Information Form and cyberloafing activities.

3.5 Data Analysis

Descriptive statistics was conducted for the data analysis. They are used to describe the basic features of the data in the study to provide summaries about the sample and the measures presented in histogram, pie chart, bar chart and graph (Williams, 2007). The obtained data in this study will be analyzed through the software Statistical Package for Social Science (SPSS). Inferential statistics was also used to examine relationships, causal influences and effects, differences, similarities between two variables or between some of the variables studied. Pearson's correlation used to study the relationship between 2 quantitative, continuous variables: (1) cyberloafing behaviour and (2) academic achievements.

4. RESEARCH RESULT AND DISCUSSION

4.1 Demographic Information

4.1.1 Gender

Table 1 Gender

	Frequency	Percentage (%)
Male	170	45.9
Female	200	54.1

4.1.2 Race

Table 2 Race

	Frequency	Percentage (%)
Malay	152	41.1
Chinese	130	35.1
Indian	86	23.2
Other	2	5

4.1.3 Year of Study

Table 3 Year of Study

	Frequency	Percentage (%)
Year 1	53	14.3
Year 2	87	23.5
Year 3	184	49.7
Year 4	46	12.4

4.1.4 Faculty

Table 4 Faculty

	Frequency	Percentage (%)
Faculty of Applied & Human Sciences	135	36.5
Faculty of Chemical Engineering Technology	42	11.4
Faculty of Civil Engineering Technology	40	10.8
Faculty of Electrical Engineering Technology	70	18.9
Faculty of Electronic Engineering Technology	56	15.1
Faculty of Mechanical Engineering Technology	27	7.3

4.1.5   Grade Point Average (GPA)

Table 5 Grade Point Average (GPA)

	Frequency	**Percentage (%)**
Lower than 1.00	26	7.0
2.50-2.99	78	21.1
3.00-3.49	210	56.8
3.50-4.00	56	15.1

4.2   Descriptive Analysis

4.2.1   Internet Usage Duration (hours per day)

Table 6 shows that the Internet usage duration. According to Table 6, only 5 representing 1.4% of the respondents, spend their time on the Internet for less than 1 hour per day. Moreover, 8 representing 2.2% of the respondents, spend 1 to 2 hours per day on the Internet, while 18 representing 4.9% of the respondents, spend 2 to 3 hours per day on the Internet. Besides that, 58 representing 15.7% of the respondents, spend 3 to 4 hours per day on the Internet, while 106 representing 28.6% of the respondents, spend 4 to 5 hours per day on the Internet. There were 175 representing 47.3% of the respondents who spend more than 5 hours per day on the Internet.

Table 6 Internet Usage Duration (hours per day)

	Frequency	**Percentage (%)**
Less than 1	5	1.4
1-2	8	2.2
2-3	18	4.9
3-4	58	15.7
4-5	106	28.6
More than 5	175	47.3

4.2.2   Internet Usage Frequency (per day)

According to Table 7, the Internet usage frequency per day. Table 7 shows only 31 representing 8.4% of the respondents, use the Internet less than 5 times per day. Furthermore, 46 representing 12.4% of the respondents, use the Internet 6 to 10 times per day, while 78 representing 21.1% of the respondents, use the Internet 11 to 20 times per day. Moreover, 116 representing 31.4% of the respondents, use the Internet 21 to 30 times per day, while 99 representing 26.8% of the respondents, use the Internet more than 31 times per day.

Table 7 Internet Usage Frequency (per day)

	Frequency	**Percentage (%)**
Less than 5	31	8.4
6-10	46	12.4
1-20	78	21.1
2-30	116	31.4
More than 31	99	26.8

4.2.3 Internet Skills

Table 8 shows that the Internet skills. According to Table 8, only 9 representing 2.4% of the respondents, had a novice level of Internet skill. Besides that, 89 representing 24.1% of the respondents, had an intermediate level of Internet skill, while 197 representing 53.2% of the respondents, had an advanced level of Internet skill. There were 99 representing 26.8% of the respondents who has an expert level of Internet skill.

Table 8 Internet Skills

	Frequency	**Percentage (%)**
Novice	9	2.4
Intermediate	89	24.1
Advance	197	53.2
Expert	99	26.8

4.2.4 Purposes of Using a Digital Device for Non-Academic Purposes

Table 9 presented the purposes of using a digital device for non-academic purposes. 208 representing 13.1% of the respondents, check the time when using a digital device for non-academic purposes. As well as that, 256 representing 16.1% of the respondents, were doing email, while 227 representing 14.3% of the respondents, were playing games when using a digital device for non-academic purposes. Besides, there were 335 representing 21.1% of the respondents using social networking when utilizing a digital device for nonacademic purposes, which had the highest number of respondents among the purposes given. Moreover, 297 representing 18.7% of the respondents, were texting, whereas 264 representing 16.6% of the respondents, were doing web surfing when using a digital device for non-academic purposes.

Table 9 Purposes of Using a Digital Device for Non-Academic Purposes

	Frequency	**Percentage (%)**
Check the time	208	13.1
Email	256	16.1
Games	227	14.3
Social Networking	335	21.1
Texting	297	18.7
Web Surfing	264	16.6

4.2.5 Sharing

Table 10 shows sharing factor. 36.8% of the respondents stated "generally" with the statement A1, which is "I share content on social networks (photo, video, etc.)". Furthermore, 30.3% of the respondents have stated "always", 17.3% of the respondents stated "sometimes", while 10.8% of the respondents have stated "rarely" in statement A1. Subsequently, statement A2, which is "I like posts that are interesting", has 40.3% of the respondents stated "generally" with the statement. 37.6% of the respondents stated "always", 12.2% of the respondents have stated "sometimes", while 6.8% of the respondents stated "rarely" in statement A2. Apart from this, 36.2% of the respondents who stated "generally" with the statement A3 which is "I comment on shared content (picture, video, etc.)". There were 28.6% of the respondents stated "always", 15.4% of the respondents have stated "sometimes", while 13.8% of the respondents stated "rarely" in the statement A3. In addition, there were 34.6% of the respondents who stated "generally" with the statement A4 which is "I repost a post I like". There were 29.5% of the respondents stated "always", 20.0% of the respondents have stated "sometimes", while 11.4% of the respondents stated "rarely" in the statement A4. Furthermore, 36.2% of the respondents stated "generally" with the statement A5, which is "I post status updates on social networks". There were 27.0% of the respondents stated "always", 17.0% of the respondents have stated "sometimes", while 14.1% of the respondents stated "rarely" in the statement A5. There were 37.8% of the respondents who stated "generally" with statement A6, which is "I tag friends on social media content (picture, video, etc.)". There were 26.8% of the respondents stated "always", 17.3% of the respondents have stated "sometimes", while 13.0% of the respondents stated "rarely" in statement A6.

Table 10 Sharing

	Never (%)	Rarely (%)	Sometimes (%)	Generally (%)	Always (%)	Mean	Std. Deviation
A1- I share content on social networks (photo, video, etc.)	4.9	10.8	17.3	36.8	30.3	3.76	1.13
A2- I like posts that are interesting	3.2	6.8	12.2	40.3	37.6	4.02	1.03
A3- I comment on shared content (picture, video, etc.)	5.9	13.8	15.4	36.2	28.6	3.67	1.19
A4- I repost a post I like	4.6	11.4	20.0	34.6	29.5	3.72	1.13
A5- I post status updates on social networks	5.7	14.1	17.0	36.2	27.0	3.64	1.18
A6- I tag friends on social media content (picture, video, etc.)	5.1	13.0	17.3	37.8	26.8	3.68	1.15

4.2.6 Shopping

Table 11 shows the shopping factor. 35.9% of the respondents stated "generally" with the statement B1, which is "I shop online". Furthermore, 21.6% of the respondents have stated

"always", 23.8% of the respondents stated "sometimes", while 13.2% of the respondents have stated "rarely" in the statement B1. Subsequently, statement B2 which is "I visit deal-of-the-day websites", has 28.1% of the respondents stated "generally" with the statement. There were 22.7% of the respondents stated "never", 18.9% of the respondents have stated "sometimes", while 17.8% of the respondents stated "rarely" in the statement B2. Apart from this, 41.1% of the respondents stated "generally" with the statement B3, which is "I visit online shopping sites". Moreover, there were 17.0% of the respondents stated "always", 24.6% of the respondents have stated "sometimes", while 13.5% of the respondents stated "rarely" in statement B3. In addition, there were 35.1% of the respondents stated "never" with statement B4, which is "I visit auction sites". There were 25.7% of the respondents stated "generally", 17.6% of the respondents have stated "rarely", while 15.1% of the respondents stated "sometimes" in statement B4. Furthermore, 40.8% of the respondents stated "generally" with the statement B5, which is "I use online banking services". There were 26.5% of the respondents stated "always", 22.2% of the respondents have stated "sometimes", while 7.3% of the respondents stated "rarely" in statement B5. 37.0% of the respondents stated "generally" with the statement B6, which is "I visit online shops for used products". There were 19.5% of the respondents stated "sometimes", 16.8% of the respondents have stated "rarely", while 15.9% of the respondents stated "always" in the statement B6.

Table 11 Shopping

	Never (%)	Rarely (%)	Sometimes (%)	Generally (%)	Always (%)	Mean	Std. Deviation
B1- I shop online	5.4	13.2	23.8	35.9	21.6	3.55	1.12
B2- I visit deal-of-the-day websites	22.7	17.8	18.9	28.1	12.4	2.89	1.36
B3- I visit online shopping sites	3.8	13.5	24.6	41.1	17.0	3.54	1.04
B4- I visit auction sites	35.1	17.6	15.1	25.7	6.5	2.50	1.36
B5- I use online banking services	3.2	7.3	22.2	40.8	26.5	3.80	1.01

4.2.7 Real-time Updating

Table 12 shows the real-time updating factor. 41.1% of the respondents stated "always" with the statement C1, which is "I like a post I like". Furthermore, 34.9% of the respondents have stated "generally", 10.3% of the respondents stated "sometimes", while 9.5% of the respondents have stated "rarely" in statement C1. Subsequently, statement C2 which is "I post content (picture, video, etc.)", has 34.1% of the respondents stated "generally" with the statement. There were 30.5% of the respondents stated "always", 19.2% of the respondents have stated "sometimes", while 11.4% of the respondents stated "rarely" in the statement C2. According to Table 12, 39.5% of the respondents stated "generally" with the statement C3, which is "I check my friends' posts". There were 33.2% of the respondents stated "always", 16.5% of the respondents have stated "sometimes", while 8.4% of the respondents stated "rarely" in statement C3. In addition, there were 31.6% of the respondents stated "generally" with statement C4, which is "I comment on trending topics". 30.3% of the respondents stated "always", 14.9% of the respondents have stated "sometimes", while 14.1% of the respondents stated "rarely" in the statement C4. Furthermore, 38.4% of the respondents stated "generally" with the statement C5, which is "I watch shared videos". There were 37.6% of the respondents stated "always", 11.1% of the respondents have stated "sometimes", while 7.0% of the respondents stated "never" in the statement C5. 36.8% of

the respondents stated "generally" with the statement C6, which is "I check my friends' social networking profiles". There were 31.6% of the respondents stated "always", 15.7% of the respondents have stated "sometimes", while 12.2% of the respondents stated "rarely" in statement C6. Apart from this, 31.9% of the respondents stated "generally" with the statement C7, which is "I check job advertisements". There were 28.6% of the respondents stated "always", 17.0% of the respondents have stated "sometimes", while 15.1% of the respondents stated "rarely" in statement C7.

Table 12 Real-time Updating

	Never (%)	Rarely (%)	Sometimes (%)	Generally (%)	Always (%)	Mean	Std. Deviation
C1- I like a post I like.	4.3	9.5	10.3	34.9	41.1	3.98	1.13
C2- I post content (picture, video, etc.).	4.9	11.4	19.2	34.1	30.5	3.74	1.15
C3- I check my friends' posts.	2.4	8.4	16.5	39.5	33.2	3.92	1.02
C4- I comment on trending topics.	9.2	14.1	14.9	31.6	30.3	3.59	1.29
C5- I watch shared videos.	7.0	5.9	11.1	38.4	37.6	3.93	1.16
C6- I check my friends' social networking profiles.	3.8	12.2	15.7	36.8	31.6	3.80	1.12
C7- I check job advertisements.	7.3	15.1	17.0	31.9	28.6	3.5946	1.24

4.2.8 Accessing Online Content

Table 13 shows the accessing online content factor. 35.1% of the respondents stated "generally" with the statement D1, which is "I download music". Furthermore, 19.5% of the respondents have stated "always", 25.9% of the respondents stated "sometimes", while 10.5% of the respondents have stated "never" in the statement D1. Subsequently, statement D2, which is "I listen to music online", has 42.4% of the respondents stated "generally" with the statement. There were 39.5% of the respondents stated "always", 10.5% of the respondents have stated "sometimes", while 5.1% of the respondents stated "rarely" in the statement D2. Apart from this, 37.8% of the respondents stated "generally" with the statement D3, which is "I download videos". Moreover, there were 14.6% of the respondents stated "always", 27.0% of the respondents have stated "sometimes", while 11.9% of the respondents stated "rarely" in statement D3. In addition, 46.2% of the respondents stated "generally" with the statement D4, which is "I watch videos online". There were 35.4% of the respondents stated "always", 10.3% of the respondents have stated "sometimes", while 5.4% of the respondents stated "rarely" in the statement D4. Furthermore, 47.8% of the respondents stated "generally" with the statement D5, which is "I download applications I need". There were 33.2% of the respondents stated "always", 13.0% of the respondents have stated "sometimes", while 4.3% of the respondents stated "rarely" in the statement D5.

Table 13 Accessing Online Content

	Never (%)	Rarely (%)	Sometimes (%)	Generally (%)	Always (%)	Mean	Std. Deviation
D1- I download music.	10.5	8.9	25.9	35.1	19.5	3.44	1.20
D2- I listen to music online.	2.4	5.1	10.5	42.4	39.5	4.11	.95
D3- I download videos.	8.6	11.9	27.0	37.8	14.6	3.37	1.13
D4- I watch videos online.	2.7	5.4	10.3	46.2	35.4	4.06	.95
D5- I download applications I need	1.6	4.3	13.0	47.8	33.2	4.06	.88

4.2.9   *Gaming/ Gambling*

Table 14 shows the gaming/gambling factor. According to Table 14, 58.6% of the respondents stated "never" with the statement E1, which is "I visit gambling sites". Furthermore, 18.1% of the respondents have stated "generally", 7.8% of the respondents stated "always", while 9.2% of the respondents have stated "rarely" in the statement E1. Subsequently, statement E2, which is "I gamble online", has 60.3% of the respondents stated "never" with the statement. There were 18.1% of the respondents stated "generally", 7.3% of the respondents have stated "sometimes", while 7.3% of the respondents stated "always" in the statement E2. Apart from this, 40.0% of the respondents stated "never" with E3, which is "I check online sports sites". Moreover, there were 26.2% of the respondents stated "generally", 13.2% of the respondents have stated "sometimes", while 11.4% of the respondents stated "rarely" in the statement E3. In addition, 28.1% of the respondents stated "generally" with the statement E4, which is "I play online games". There were 23.2% of the respondents stated "never", 17.8% of the respondents have stated, "sometimes", while 17.6% of the respondents stated "always" in the statement E4.

Table 14 Gaming/ Gambling

	Never (%)	Rarely (%)	Sometimes (%)	Generally (%)	Always (%)	Mean	Std. Deviation
E1- I visit gambling sites.	58.6	9.2	6.2	18.1	7.8	2.07	1.44
E2- I gamble online.	60.3	7.0	7.3	18.1	7.3	2.05	1.43
E3- I check online sport sites.	40.0	11.4	13.2	26.2	9.2	2.53	1.45
E4- I play online games.	23.2	13.2	17.8	28.1	17.6	3.03	1.43

4.2   Level of Cyberloafing Behavior

Table 15 Level of Cyberloafing Behavior

	Frequency	Percentage (%)
Low	23	6.2
Medium	178	48.1
High	169	45.7

Table 16 Mean, Minimum and Maximum of Cyberloafing Behavior

Mean	Std. Deviation	Minimum	Maximum
97.4703	19.07283	28.00	140.00

Formula of Low, Medium and High of Level of Cyberloafing Behavior:

(Maximum-Minimum) / 3   = (140.0 – 28.0) / 3
                                  = 112.0 / 3
                                  = 37.3

28.0 + 37.3   = 65.3   – Low
65.4 + 37.3   = 102.7 – Medium
102.8 and above   – High

4.4   Inferential Analysis

4.4.1   Correlations between Gender and Cyberloafing Behavior

H1: There is a significant relationship on the factor of gender to which the cyberloafing behavior among undergraduate students of UniMAP.

Table 17 shows correlations between the gender and cyberloafing behavior; the results of Pearson correlation analysis show that there is no significant relationship between the gender and cyberloafing behavior with a value, p = 0.666. Thus, there was no correlation between the two variables, r = 0.022, N = 370.

Table 17 Correlations between Gender and Cyberloafing Behaviour

		Gender	Cyberloafing Behavior
Gender	Pearson Correlation	1	.022
	Sig. (2-tailed)		.666
	N	370	370
Cyberloafing Behavior	Pearson Correlation	.022	1
	Sig. (2-tailed)	.666	
	N	370	370

4.4.2 Correlations between Cyberloafing Behavior and Grade Point Average (GPA)

Ha2: There is a significant relationship between the cyberloafing behavior and academic achievements of UniMAP undergraduate students.

Table 18 shows correlations between cyberloafing behavior and Grade Point Average (GPA); the results of Pearson correlation analysis show that there is a significant relationship between the cyberloafing behavior and Grade Point Average (GPA) with a significant value, p = 0.002. Thus, there was a weak positive correlation between the two variables, r = 0.157, N = 370.

Table 18 Correlations between Cyberloafing Behavior and Grade Point Average (GPA)

		Cyberloafing Behavior	Grade Point Average (GPA)
Cyberloafing Behavior	Pearson Correlation	1	.157**
	Sig. (2-tailed)		.002
	N	370	370
Grade Point Average (GPA)	Pearson Correlation	.157**	1
	Sig. (2-tailed)	.002	
	N	370	370

Table 19 Summary of Status of Hypothesis

	Hypothesis	Status
Ha1	There is a significant relationship among the factor of gender towards the cyberloafing behavior among undergraduate students of UniMAP.	Rejected
Ha2	There is a significant relationship between the cyberloafing behavior and academic achievements of UniMAP undergraduate students.	Accepted

5. DISCUSSION AND INTERPRETATION OF FINDINGS

5.1 Demographic Information

370 respondents were involved in this study, covering various races and year of study. The number of female respondents (N= 200, 54.1%) involved in this study is slightly higher compared to male respondents (N= 170, 45.9%). Most of the respondents were Malay which occupied 152, representing 41.1% of the respondents, following with Chinese that settled 130 representing 35.1% of the respondents, Indian that occupied 86 representing 23.2% of the respondents, and only two respondents (5%) are other races than given options. On the other hand, most of the respondents who participated in this study are Year 3 students who occupied 184 representing 49.7% of the respondents, which is match to the highest number of respondents' faculty in this study as the Faculty of Applied and Human Sciences (135 representing 36.5% of the respondents) only provide three years undergraduate program. Most of the respondents spent more than five hours per day using the Internet (175 representing 47.3% of the respondents), and most of them use the Internet at the frequency between 21 to 30 times in a day (116 representing 31.4% of the respondents). Furthermore, most of the respondents acquired an advanced level of Internet skills

(197 representing 53.2% of the respondents), which has a higher chance of engaging in cyberloafing behavior compare to intermediate and novice Internet users as people who have higher Internet skills tended to cyberloafing primarily for personal business (Toker & Baturay, 2021).

5.2 The Purposes of Students in Higher Education Institutions Using A Digital Device For Non-Academic Purposes

The purposes of using a digital device for non-academic purposes among UniMAP students are social networking, texting, web surfing, and email. Social networking services (SNS) are web-based services that allow individuals to link with a list of other users with whom they share a connection (Salehan & Negahban, 2013). Some SNS is designed to preserve existing relationships between individuals, while others allow strangers to build communities and platforms by interacting with other users who have similar interests, opinions, or even nationality, race, or gender identity. The extensive usage of social networking applications on digital devices, as well as the high penetration rate of mobile devices, will emphasize the social and personal issues linked with mobile phones and internet technology. Apart from this, individuals who have a more extensive network size will have a larger social circle. Hence, they need to spend more time on social networking sites to communicate with more people. Therefore, excessive use of social networking applications leads them to get used to frequent checking of social networking applications on mobile phones whenever and wherever they are, even when they have lectures in the classroom (Durak, 2020).

Besides that, texting messages is also one of the most predominant purposes of undergraduate students in UniMAP using a digital device for nonacademic purposes. University students do text messaging commonly to communicate with their peers and develop interpersonal connections, especially when they feel bored during their class activities (Kim *et al.*, 2019).

Apart from that, another most predominant purpose of undergraduate students in UniMAP using a digital device for non-academic purposes is web surfing. According to Courtad (2019), accessible web surfing ability in the classroom can change the levels of acceptable performance for students with learning disabilities, increasing the comprehension level of students to classroom instructional materials. However, when students misuse the accessible Internet services provided by their educational institutions for entertainment purposes such as viewing online news and online sports sites during classroom activities, they may not be able to listen to the lectures effectively and miss important parts due to a lack of concentration on the sessions (Sener, 2020).

Above all, email for personal purposes is also one of the most predominant purposes of undergraduate students in UniMAP using a digital device for non-academic purposes. The university communicates to students through emails, and sometimes certain information gets to students late. Therefore, most students have developed the habit of checking their university emails to not miss out on vital details (Twum *et al.*, 2021). However, some students like to use their universities' email for personal communication, where they engage in receiving, checking, and sending a nonacademic-related email (Sener, 2020). Students are forced to respond to both academic and non-academic associated emails due to this interspersion of personal emails with academic-related emails. Although the researcher may argue that students should disregard private communications, previous studies have shown that students feel compelled to respond to all incoming emails, regardless of their content (Kim *et al.*, 2019).

5.3 The Level of Cyberloafing Behavior Among Students in Higher Education Institution

According to the findings in this study, the majority of undergraduates' students achieve a high level of cyberloafing behavior. There are 169 representing 45.7% of the respondents who reached a high level of cyberloafing behavior. Researchers defined cyberloafing behavior as students' behaviour spending time on Internet-accessible devices for activities not related to academic purposes (Hayashi & Nenstiel, 2019). Typically, internet use is regulated. With time, people must use it for more extended periods to reach the happiness and excitement they had in the early days when they used it for a considerable amount of time. All of the day's offline activities are surrounded by ideas of constant internet interaction, the pleasant sensations they experienced the last time they used the internet, and a persistent desire to utilize the internet throughout the day. When individuals cannot access the internet, they may experience mood swings, restlessness, worry, behavioral inactivity, or more significant attempts to regain access, leading them to Internet addiction behavior (Anand *et al.*, 2018).

The higher the Internet addiction level of individuals, the higher the level of cyberloafing behavior to reduce the anxiousness and stressful factors faced in their daily activities. The high-stress levels of university students' lives make undergraduate students in UniMAP feel anxious and tense, motivating them to escape real life and keep going online. The use of technology in the classroom provides opportunities for those undergraduate students who have internet addiction symptoms to engage in non-academic-related or off-task personal activities. The researcher also found out that the real-time updating factor is the highest frequency of cyberloafing behavior among undergraduate students in UniMAP, which occupies 278 respondents (75.1%) for the high-level cyberloafing behavior. Real-time activity updating is a concept representing information becoming instantly accessible as soon after posting it (Kapoor *et al.*, 2018). It is a feature that allows social networking websites users to communicate with each other in live time on social networking sites.

Furthermore, according to the findings, 31.9% of the respondents check job advertisements generally when they are cyberloafing. This can be understood that those undergraduate students who visit sites about finding a job or career are Year 3 students from the Faculty of Applied and Human Sciences that will undergo their internship programs later in July 2021.

5.4   The Effects of Cyberloafing Behavior On the Academic Achievements of Students in Higher Education Institution

The academic achievement of undergraduate students in UniMAP was recorded with the Grade Point Average (GPA) from the respondents in this study. Most of the respondents who participated in this study obtained GPAs rank between 3.00 and 3.49 (56.8%). The researcher measured the academic achievement by using respondents' GPA from last semester. Participants self-reported their GPA to safeguard their anonymity. Prior survey studies of off-task digital media usage overwhelmingly found negative consequences. However, few early research found no significant changes (Samaha & Hawi, 2016). Academic achievement is inversely related to the amount of time spent on a smartphone and the extent to which it is used. The amount of time spent on a smartphone and the degree to which it is used is inversely connected with academic success. A recent study used route analysis to stress the direction, revealing that students' GPAs impact how much time they spend on social media, but not the other way around (Michikyan *et al.*, 2015).

5.5 Relationship between the Factor of Gender Towards the Cyberloafing Behavior Among Undergraduate Students of UniMAP

According to the results, there is no significant relationship between gender and cyberloafing behavior. This result converges with previous studies which also demonstrated there was no statistically meaningful relationship between gender and cyberloafing behavior (Durak, 2020). However, other studies found gender differences can influence cyberloafing behavior (Baturay & Toker, 2015; Metin-Orta & Demirutku, 2020; Toker & Baturay, 2021; Twum, *et al.,* 2021). According to the scholars, male students participate more in cyberloafing behaviors because males are more educated about the Internet, and they are more proficient and effective in Internet usage than women, they get greater enjoyment from activities (Metin-Orta & Demirutku, 2020). Ultimately, this allows male students who use the Internet primarily for fun and leisure to obtain more enjoyment from such activities. There are also scholars who agree there is a significant difference between gender in cyberloafing behavior, particularly when it comes to playing online games during class (Akbulut *et al*.,2015). On the other hand, according to Arabaci (2017), females participate in cyberloafing for news to follow up the latest trend more than males. Female students are more prone than male students to use Internet services to solve socializing difficulties and to use social media networking sites during class activities.

5.6 Relationship between the Cyberloafing Behavior and Academic Achievements of Undergraduate Students of UniMAP

According to the results, there is a significant relationship between the cyberloafing behavior and academic achievement of undergraduate students of UniMAP. This result is congruent with previous research which demonstrated cyberloafing behavior can impact on academic achievement of students (Junco, 2012; Ravizza *et al*., 2014). As it requires students to multitask, reduces time, energy, and attention that could have been devoted to learning, distracts students' attention, and prevents deeper learning, the effects of cyberloafing in the classroom have been linked to poor learners' outcomes, such as lower classroom performance and GPA (Junco, 2012). However, research by Wu *et al*. (2018) shows that a fair amount of cyberloafing can improve students' academic performance. Students will be able to participate in the learning process more effectively and actively if cyberloafing is reduced.

6. RECOMMENDATIONS FOR FURTHER STUDIES

The respondents in this study self-reported their cyberloafing habits while filling out the online questionnaire. Despite evidence that self-reported cyberloafing is a beneficial measure of actual cyberloafing activity (Ravizza *et al*., 2014), several forms of cyberloafing behaviour, particularly socially undesirable conduct, may be difficult to self-report. Therefore, to circumvent the limitations of self-reported data, future studies should focus on tracking real cyberloafing by actively monitoring the frequency and duration of students' Internet use. Moreover, this study cannot explain why having access to wireless internet connectivity at education institutions leads to cyberloafing habits; future studies should be investigated in qualitative methodologies to look at the relationship between unlawful access to the school network and cyberloafing tendencies. Future research on this topic would be highly beneficial in determining which online acts children perform when they have access to a wireless school network rather than a personal internet connection. This type of research might help researchers design required steps to prevent similar unproductive behaviour in the future. Apart from these, future studies should look into the variations in views of cyberloafing and cyberloafing behaviors between students and instructors. Although studying differences between students would help researchers better understand today's undergraduate population and their engagement with cyberloafing, it would be more amusing to look at variations between professors and students because the comparisons would be cross-generational. Such information might reveal the connection between students and

faculty members and how they perceive and act in the classroom when using technological devices.

7. CONCLUSION

In summary, the current research contributed to the higher education institutions who faced cyberloafing behavior among their students to have a better understanding and to take actions in dealing with the cyberloafing behavior. With the wide use of the Internet by students and the ease in which they can access the Internet using internet services, the researcher has suggested it is critical to identify when students' cyberloafing is constructive. To evaluate the construct of cyberloafing, most existing studies on cyberloafing in educational settings have used outmoded cyberloafing scales. The findings might be skewed when new sorts of cyberloafing activities are not included in the measurement. As a result, researchers can only gain a thorough knowledge of students' cyberloafing during class if they evaluate many dimensions of cyberloafing.

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