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The Association Between Age And Time Spent On Online Activity Among University Students

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Abstract

Our daily lives have become increasingly reliant on technology and online activities. From communication and work to learning and entertainment, technology has made these activities more efficient. However, it is important to be aware of potential threats while browsing the internet and being involving in online activity and take necessary precautions to ensure safety during online activity. This paper aims to identify the relationship between age and time spent in online activity among university students. The respondents of this research were students from public university in Terengganu who were actively involved in online activities ranging from 18 to 24 years old. The questionnaires on digital identity, digital safety, and online behaviour were adopted from previous research, and links to Google Forms were given to students using the WhatsApp application. There were 184 questionnaires used for the analysis. Data were analysed using SPSS version 27. This research seeks to answer the objectives on the association between age and time spent online and frequency of engagement online. The research analysed individuals aged 18 to 30 years and above who were actively involved in online activities. The study found that the largest group of respondents was 18 to 20 years. Chi-square tests were conducted to examine the correlation between age and frequency of online engagement. Results showed that there was no significant relationship between age and the time spent online or the frequency of online engagement. Therefore, it cannot be generalised that age group plays a significant role in determining the respondents' online activity.

Keywords: Age, Time Spent, Digital Safety, Digital Identity, Online Behavior

Introduction

Information Communication and Technology (ICT) has become an important tool in our daily lives, affecting how we behave, learn, think, perform tasks, and live. In this era of globalisation and digitalisation, users are increasingly engaged in the online environment, utilising Information and Communication Technology (ICT) in various activities such as entertainment, banking, and social media interactions. The rapid growth of technology has led to a shift in people's behaviour, with users spending more time engaging in online activities such as social media and online gaming, rather than in physical environments. This trend has led to a significant change in the way we interact with each other and the world around us.

In previous studies, some research discussed interactivity in online activity involving interacting with one another, such as interpersonal communication and engaging with the system related to the media's characteristics (Sreejesh et al., 2020). Users control the information received when communicating with other people (Huang, 2012).

Taylor et al. (2011) defined social networks as online platforms that enable users to create personal profiles, manage their contacts, and explore relationships with others. The widespread use of social media has transformed how people make decisions, share information and reduced the impact of traditional advertising platforms (Duffet, 2015). According to Yilmaz and Enginkaya (2015), social media's broad reach enhances the influence of users' comments, surpassing the impact of word-of-mouth. Rosario et al. (2020) found that digital literacy significantly correlated with online information-seeking behavior during the COVID-19 pandemic. The study by Horgan and Sweeney (2012) revealed that university students actively use the internet and social media platforms for communication. Students are believed to have positive views and self-efficacy regarding internet access, viewing it as a beneficial and functional tool (Peng et al., 2006). However, Salleh et al. (2020) discovered that social media is not the primary source of information for most respondents, contrary to the popular belief that people rely heavily on social media for information-seeking purposes.

The important factor to consider in online activities includes the secure use of the internet and the protection of user’s digital identities. Dworkin et al. (2013) noted that although users seeking information and social support online find satisfaction, the main consideration is the trustworthiness of the internet and the reliability of the information they come across. In conclusion, though the internet is beneficial and convenient, it is essential for users to be safe in practicing online behaviour, understand the importance of digital safety and protect their digital identities to ensure a more secure online experience and trust in online tools. In addition, it is known that younger individuals spend more time online, particularly on social media and online games, compared to other age groups. Age may impact the amount of time people spend on online activity.

According to a study by the Pew Research Center, 100% of individuals aged 18-29 use the internet, with an average of 3.1 hours spent online daily. In contrast, only 73% of people aged 65 and above use the internet, with an average of 1.3 hours spent online daily. The study also found that younger generations use social media and streaming services such as YouTube and Netflix, while older generations use email and online news sources more frequently. However, these trends may change over time, and younger teens tend to be more interested in online gaming than older teens (Lenhart & Madden, 2019) as technology and online habits evolve. Additionally, positive and significant relationships existed between time spent online and grades who obtained below a certain level (Korkofingas & Macri, 2013).

Studying the relationship between age and time spent in online activity is essential for understanding how different age groups engage with digital platforms and the potential

impact on their cognitive abilities, academic performance, and learning preferences. Research has shown that computer training is a possible means to train the brain in older people (>65 years of age) and that older students may be more active in online learning activities, such as posting on discussion boards, and may score higher on measures of academic performance when web-based tools are utilised in a course (Korte, 2020; Simonds & Brock, 2014).

In conclusion, investigating the relationship between age and online activity is vital for understanding the influence of digital platforms among younger individuals. Therefore, we focused on university students as a sample population for this study to gain insights into their online activity hours and engagement patterns. Additionally, this study is conducted to identify the correlation between age and time spent on online activities. It aims to determine the frequency of responses regarding digital identity and digital safety among respondents.

Literature Review

Digital Safety

Digital safety, as noted by Gasser et al. (2010), is a complex concept related to the well-being of digital media users contributing to a safe digital experience. The study conducted by Asrese and Muche (2020) found that users involved in online activities such as social media and online gaming can lead to problematic internet use (PIU). The research highlighted the need for rules to limit addictive online activities and promote responsible internet use.

Research by Martin (2021) found that parents are worried about their children's exposure to cyberbullying, harmful content, online predators, and too much screen time. He emphasised the importance of parents' role in ensuring their children's digital safety by setting rules, using parental control software, and promoting open communication. Moreover, Goldstein et al. (2005) explained that too much freedom for young adolescents can put them at risk of negative peer influence.

Furthermore, Senthilkumar and Easwaramoorthy (2017) found that more than 70% of students were aware of basic virus attacks, and they used antivirus software and regularly updated it to protect their systems.

Digital Identity

When people present themselves and participate in online activities, they are an important factor in knowledge transfer. Digital identity plays a crucial role in facilitating knowledge exchange in computer-mediated communication contexts, and individuals are willing to share their knowledge with strangers in online environments. Self-presentation is important in contributing knowledge among online communities (Ho Kyoung Shin & Kyung Kyu Kim, 2009). The study conducted by Molly & Samer (2005) reveals that individuals contribute their knowledge in online activities when it enhances their professional reputation and experience to share and structurally embedded in the network. As explained by Matthew et al. (2016), a digital identity includes a username, password, date of birth, and social security number, along with online activities and gained increasing significance (Hu et al., 2015).

Moallem (2018) found that most university students willingly share their personal information despite understanding the risks of identity theft. These students lack sufficient knowledge of data protection and cyber security even though they know that their data is unsafe because educational institutions do not provide adequate information on safety and protection against threats in online activities.

Online behavior

In today's modern world, our daily activities and interactions rely more on the internet (Hinds et al., 2021). The term "online behavior" refers to the actions we take in the digital environment, such as posting content and engaging in conversations with others that can be classified into two types which are passive usage (involves consuming content without engaging with it) and active usage (one-way or two-way communication) (Meier & Reinecke, 2020). Active usage (behaviour) refers to actions taken in online environments involving engaging with the online community, and passive usage (behaviour) engaging activities such as reading articles, watching videos, and scrolling through social media feeds without interacting with the content or community.

A study was conducted to explore experienced users' online behavior concerning their security and privacy attitudes. Results from the research revealed that most users are aware of the potential threats while involved in online activities and take measures to protect themselves. However, there are users who ignore these threats as it requires significant time and effort (Orehovački, 2008). Experienced individuals in ICT also may lack awareness of online threats or fail to adjust their behavior accordingly (Orehovački, 2008). Zafar et al. (2014) discussed research on user behavior in discussion forums and found that users are more involved in non-imposed forums than imposed because they have more freedom to express their thoughts and engage in meaningful discussions. According to Gómez-Puerta & Chiner (2019), most users engage in illegal access to online accounts, sending or receiving inappropriate material related to drugs, violent content, fraud or scams, and harassment with a clear sexual intention and face other factors that pose problems in an online environment. However, Starcevic et al. (2023) found that the most common problems of online behavior was online shopping, online gambling, the use of social networking sites, cybersex, online gaming, and cyberchondria. It is crucial to be aware of these behaviours to ensure the safety and well-being of users, as these behaviours may negatively impact users.

Research Methodology

This study used a questionnaire design and data collection procedure. The questionnaire is structured into three parts: Part A, the demographic details; Part B, the level of digital intelligence; and Part C, the active online behaviours. The questionnaire on digital intelligence is adapted from Na-Nan et al. (2020), while the questionnaire on online behaviours were adapted from Ybarra et al. (2007) and Ozan, O., & Ozarslan, Y. (2016). Each question is measured using a seven-point Likert scale ranging from 1, strongly disagree, to 7, strongly agree. However, in this study, the researcher only discussed age, time spent online and engagement frequency. The respondents were selected from public university students using convenience sampling and administered using Google Forms. Out of 211 returned questionnaires, only 184 (87.20%) were used for analysis. Data were analysed using SPSS version 27.

Findings and Discussion

There were 184 respondents in this research, where 20.7% of the respondents were male and 79.3% were female. The data were analysed using the Statistical Package for Social Science (SPSS) Version 27. Respondents involved in this research were students aged 18 to 30 years and above. The chosen respondents were actively engaged in online activities.

Table 1:
Age and Time Spent Online Per Day

Age	Time spent online				Total
	Less than 1 hour	2 - 3 hours	4 - 5 hours	More than 5 hours	
18 - 20	8	42	37	29	116
21 - 23	4	14	17	23	58
24 - 26	0	1	2	2	5
30 and above	2	1	0	2	5
Total	**14**	**58**	**56**	**56**	**184**

Table 1 represents the information about the association between respondent age and the amount of time they spend online. Age distribution is from 18 to 30 years old and above. Based on the response, the largest group of respondents are 18 – 20 years old (116), followed by 21 – 23 years old (58), while the age group between 24 – 26 years old, and 30 and above are the smaller group with 5 participants for each age group. Those who are in the 18 – 20 age group are found to spend more time online, that is, 2 – 3 hours (42), 4 – 5 hours per day (37), and more than 5 hours per day (29) followed by those in the age range 21 - 23 years old who spend 2 - 3 hours (14), 4 – 5 hours (17) and more than 5 hours (23). Only a few respondents spend less than 1 hour daily, accounting for 14 individuals. In conclusion, respondents in the 18 – 20 years of age and 21 – 23 years of age, are spending substantial time online, particularly 2 hours and more daily. In contrast, those aged 24 – 26 and 30 and above spend less time online. The younger age group allocates more time online than older age groups.

Table 2:
Age and Frequency Engage Online

Age	Frequency Engages Online					Total
	Less than once a month	Once a week	Two to three times a week	Once a day	Several time a day	
18 - 20	2	1	9	12	92	116
21 - 23	0	1	2	5	50	58
24 - 26	0	0	0	0	5	5
30 and above	0	0	0	0	5	5
Total	**2**	**2**	**11**	**17**	**152**	**184**

Table 2 shows the cross-tabulated age and frequency engaged online, representing the age group of respondents and the frequency they are online. The most noticeable frequency across all age groups is “several times a day,” recorded by 152 respondents, followed by 17 respondents spending once a day, 11 respondents spending two to three times a week, and the rest spending fewer hours engaging online. The number of respondents engaged “several times in a day” is prevalent among those aged 18 -20 (116), followed by the age group between 21 – 23 years old with 58 respondents. In comparison, respondents aged between 24 – 26 years old and 30 years and above recorded 5 respondents, respectively.

Chi-square test

Table 3:
Association between Age and Time Spent Online

Chi-Square Tests			
	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	14.447[a]	9	.107
Likelihood Ratio	12.862	9	.169
Linear-by-Linear Association	.273	1	.601
N of Valid Cases	184		

a. 9 cells (56.3%) have expected count less than 5. The minimum expected count is .38.

The table provides the chi-square test results used to determine the association between age and frequency engagement online. The result shows that the chi-square test at 5% level of significance is 0.107, which is higher than 0.05. Hence, there is no significant association between the age and time spent online.

Table 4:
Association Between Age and Frequency Engaged Online

Chi-Square Tests			
	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	5.097[a]	12	.955
Likelihood Ratio	7.403	12	.830
Linear-by-Linear Association	2.938	1	.087
N of Valid Cases	184		

a. 15 cells (75.0%) have expected count less than 5. The minimum expected count is .05.

The table provides the chi-square test results used to determine the association between age and frequency engagement online. The result shows that the chi-square test at a 5% significance level is 0.955, which is higher than 0.05. Hence, there is no significant association between the age and frequency engaged online.
Therefore, based on the results in Table 3 and Table 4, it answers objective number 1, to study the association between age and time spent online and frequency of engagement online.

Conclusion
The research article analysed users aged 18 to 30 years and above actively engaged in online activities. The largest group of respondents were aged between 18 to 20 years old. The study found that those aged 18 to 20 years old and 30 years spent more time online than the other age groups. Only a small number (14) of respondents spent less than one hour per day. The research also provides results of chi-square tests to determine the association between age and online frequency engagement. The results show no significant association between age and time spent online or frequency engaged online at a significance level of 5%. These findings help understand the relationships between these variables and may have implications for further analysis or decision-making related to the data.
Therefore, based on the results, it answers the objectives of the association between age and time spent online and frequency of engagement online. This study is supported by Adgate's

(2021) report on digital media activities which found no significant association between age and time spent online or frequency engaged online. Additionally, another research analysed problematic smartphone use across different age groups and found no significant difference in problematic use components across different age groups (Elhai, 2019).

This research makes significant contributions to our understanding of the relationship between age and time spent on online activity because it provides insights into the differences of age in online behavior. Policymakers and service providers can use this information to design online safety programs for the needs of young people or older adults. By understanding the factors that influence their online behavior, individuals may take steps to manage their online time and avoid negative consequences. It highlights the importance of considering age as a key factor in understanding online behavior. Overall, the research on age and time spent in online activity is significant to the existing knowledge and plays a crucial role by informing policies and interventions aimed at promoting healthy internet use and positive outcomes across different age groups.

It is recommended that future research should focus on finding the reasons behind the differences in online activities among different age groups. The study could be conducted via surveys or interviews to understand why certain age groups spend more time online than others. Other than that, future research may investigate factors such as cultural background, gender, or socioeconomic status that might influence online activity among different age groups. Comprehensive exploration of age and time spent on online activities will not only contribute to academic knowledge but also as a guideline for the development of policies and interventions to foster a digitally inclusive.

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