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Online Gambling and Pornography among Youth: An application of Uses & Gratification Theory

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Abstract: Young people are involved broadly in online entertainment, including gambling and pornography, which can be quite problematic. Internet gambling and pornography use have become increasingly prominent in the last decade. In the light of Uses and Gratification (U&G) theory, the present study aims to identify the relationship between Internet use gratification, attitudes toward the Internet, online gambling and pornography use through a survey of 440 Malaysian young people. The research did not find any statistically meaningful relationship among Internet use gratification, attitude towards Internet, online gambling, and pornography use, nor between age, field of study and pornography use. However, there were a significant relationship between gender and gambling, and a significant relationship between gender and pornography use. Age and online gambling also showed a significant negative relationship.

Keywords: Internet Use, Pornography, Online Gambling, Attitudes, Uses and Gratification Theory, Internet.

Introduction

The value of adult entertainment market was approximately 48 million dollars in 2021 which is estimated to reach about 73 million dollar by 2027 (Digital Journal, 2022). Pornography is the depiction of sexual behavior with the purpose of triggering arouse sexual excitement in its audience (Farlex International, 2016).

Online pornography addiction is a complicated issue, but there are forms of it that are universally acknowledged as unethical and illegal, such as child pornography, and other online sex crimes that can be adjacent to it. Generally, some policies have been proposed to address the increasing number of online sex offenders —most of whom are charged with possession or distribution of child pornography. According to the US Bureau of Justice Statistics, online sex criminals have been “among the fastest growing groups of the criminal population in federal level and were the most frequently arrested and prosecuted category of sex offenders in recent years”(Motivans & Kyckelhahn, 2007). The category of sex crimes comprises a wide collection of conducts that can be mapped across a broad spectrum of behaviours.

According to Purnhub Insights (2019), the largest group of porn users were in the age range of 25-34 which comprised 36% of the website visits. Youth between 18-24 years old fall in the second group (25%). Adults aged between 35 and 44 years represented 17% of the total visits and those between 45 and 54 years represented 11%. In the end, people between 55 and 64 years old represented 7% of visits and those over 65 years represented 4% of the website visits.

The Internet users in Malaysia are increasing and therefore there are warnings about Internet misapplications. Apart from the undeniable benefits of Internet, it has some disadvantages as well. Cyber-crimes, cyber-bullying, cyber-sex and other problems associated with internet use have also surged as a result—both in Malaysia and globally—and must be addressed. According to Star Online, Malaysian women had lost 1.09 billion Ringgits for sex-related online scams in 2016 (Hawafi, Hassan, & Ayub, 2017). Mohammad Sani Badron at the Institute of Islamic Understanding Malaysia’s website has reported an average of 22,000 daily searches on the search engine Porn-MD in Malaysia, which places the nation 19th in the world ranking. Another report by Harian Metro found that 28,671 teenagers in Malaysia suffered addiction to pornography in 2016 (Hawafi et al., 2017). Therefore, government should be equipped with certain plans for informing the users of the negative and dark sides of the internet and the consequences of misusing it.

Online porn and gambling have also increased in recent years due to the Covid-19 pandemic. Zamboni et al. (2021) reported that watching online porn had increased by up to 4.7% during the initial lockdowns. A similar proportion of Internet users (5.1%) stated that they had spent more time

online compared to pre-Covid, and 8.4% mentioned that they had developed a stronger tendency to various online activities as a way to escape their distress and negativity. Research in other contexts has found a positive relationship between losing control while web surfing and online shopping (Király et al., 2020 ; King et al., 2020 ; Mestre-Bach et al., 2020). Such online tendencies could lead to Internet addiction for those individuals who are at risk of developing it, which in turn causes problems for the public health system.

Estimating the impacts of Internet use on peoples' lives has been one of the most controversial issues in multi-disciplinary studies. Studying effects of Internet use on different spheres of human life has led to inter-disciplinary studies connecting computer science to other fields. Accordingly, online gambling has been one of the subjects for which researchers have attempted to find out the probable causes and consequences. This paper, after reviewing some of the previous research, seeks to contribute to studies about the consequences of using the Internet for online gambling and watching porn material in ascertaining the role of Internet in pornography-related crimes.

In the modern world of electronic trading, gambling has also changed in many ways and entered the online world in areas such as social media networks and e-sports (Lopez-Gonzalez, Guerrero-Solé, & Griffiths, 2018; Macey & Hamari, 2018). Thanks to the advent of cutting-edge mobile communications, playing video games and gambling have become drastically easier to access (Deans, Thomas, Daube, & Derevensky, 2016).

The global online gambling industry is estimated to exceed the value of \$94 billion (USD) by 2024, doubling the current estimate of \$46 billion (Lock, 2019). It will grow from \$81.08 billion in 2022 to \$88.65 billion in 2023 at a compound annual growth rate (CAGR) of 9.3% (The business research compan, 2023). Web-based betting comprises club gambling games, poker, and potentially sports betting. Due to substantial developments such as the progression of innovative accessories (cell phones and various applications), higher trust of speculators paying on the web, and the expanding digitization of the world, the Internet gambling sector seeks to expand its domination to a variety of new scopes (Lock, 2019).

When online gambling was legitimized in the USA through court decisions, Internet-betting companies have been planning to develop their game sectors, providing further support for the market development. With regard to the web-based betting, a UK study found that 17% of the populace had used such websites, amounting to £5.3 billion in income for the online markets alone (Sheldon, 2018). The increase of women in clubs and the availability of cashless methods are probably going to continue the growth of web-based betting going forward (Market Watch, 2019).

Communications and Multimedia Ministry of Malaysia reported that the country loses about 2 billion Malaysian Ringgits in taxes annually to online gambling (Albakri, 2022). Although payment processing in online (usually foreign) gambling sites is legally prohibited in Malaysia, as well as countries such as Belgium, Estonia, France, and Hungary, there are many

foreign financial manipulators for bypassing these rules—some of which were invented to fulfill this need (Williams et al., 2012).

Online gambling has also gained popularity as a result of the more efficient, quicker and more anonymous cash transfers enabled by cryptocurrencies, Bitcoin in particular (Fintechnews Singapore, 2016). According to the data from Juniper Research, the market value of online gambling increased dramatically from \$550 billion to \$950 billion from the year 2016 to 2021, and betting levels were estimated to go beyond \$1 trillion on digital products and services (Juniper Research, 2016). In the uncertain shadow of Covid-19, researchers have been constantly assessing the impacts of the pandemic on the online gambling market (Research and Markets, 2022).

Online Gambling

Digital advancement was warmly accepted by the gambling industry through the creative navigation of audio-visual technology in a way that human senses are perfectly stimulated (Gainsbury & Blaszczynski, 2017). The gambling industry has been rapidly developing due to the easy accessibility of digital devices with easy access to the internet, which provide an appropriate platform for gamblers (Martin, 2017). Great media and online gaming organizations have also entered the realm of online gambling and invested in prominent digital tools in response to the modern availability and cost effectiveness of Internet access (Lawn et al., 2020).

Gambling becomes harmful once it becomes an uncontrollable addiction; which is often accompanied with alcohol consumption and smoking (Tobias-Webb, Griggs, Kaufman, & Clark, 2019). According to research from Finland, most online gamblers were smokers and enjoyed risky alcohol consumption compared to gamblers who went to land-based physical venues like casinos (Edgren, Castrén, Alho, & Salonen, 2017). A similar study in Australia found that multimode gamblers (both online and land-based venues) consumed more alcohol than online gamblers (Blaszczynski, Russell, Gainsbury, & Hing, 2016).

The Betting Act of 1953 in Malaysia is the principal code of gambling regulations which declares certain gambling activities as illegal. Generally, gambling practices by licensed companies, horse racing, and the lottery are allowed. Practicing illegal forms of gambling are punishable by law (Newton, 2020). In 2020, the punishment for both illegal gamblers and gambling operators was sharply increased from RM5,000 to RM100,000 and a minimum jail sentence of six months (Albakri, 2022; Rathakrishnan & George, 2021). Soccer is also among the popular sports to bet on. Recently online betting on domestic league games in famous European leagues have gained much popularity (Newton, 2020). In another study by Sheela et al. (2015), roughly 29.6% (95% CI 27.7–31.5) of respondents reported participation in at least one kind of gambling during the past year, of whom 3.6% (95% CI 2.8–4.3) were diagnosed as problematic gamblers. Having parents who are involved in gambling was a powerful predictor of adolescent

gambling behaviour. Overall, males were significantly more likely to be gambling addicts, as were adults engaged in the risky behaviors (smoking, alcohol, involving in street fights, illegal car racing). Malaysian adults have a common understanding about practicing gambling. The authors propose pathways out of gambling for adolescents such as public information campaigns, healthcare notices for viable groups, reviewing legal codes, and screening people at basic levels of addiction, and stress the necessity of having a nation-wide plan for the problem in Malaysia (Sheela, Choo, Goh, & Tan, 2016).

Pornography and Internet Use

The advent of smart phones has provided unprecedented private accessibility of sexual online content for users. Ashton et al. (2019) defines pornography as any sexual material with the primary purpose of evoking consumers' sexual desires and is produced and circulated with the consent of the people involved.

According to recent data collected from 360 markets, the value of the online adult entertainment market equals to USD 47670.92 million in 2022 (The MarketWatch, 2022). According to Similarweb analysis, adult websites Xvideos and Pornhub are highly visited in the United States with 693.5 million and 639.6 million monthly visitors respectively (Khalili, 2021).

The online porn industry has partly flourished due to the development of advanced online platforms (Macmillen, 2017). In 2022, Xvideos are among the most visited ones: in January, the visits were 3,320,000,000 in the world remaining stable for the next few months with 3.4 billion in December 2021 and 3.2 billion in November. The second mostly viewed sites are xnxx, with 2.5 billion visits on January 2022, and the third place belongs to pornhub (Statistics and Data, 2022).

Watching pornography during adolescence can contribute to teen pregnancy (Baams et al., 2015). The most frequent pornography users were reported to be men in their 30s and 40s (Cox, 2022). Teenage pregnancy is more pervasive in poor countries (95% of teenage pregnancies happen in less developed countries); annually, 7.3 million teenagers around the world deliver their first child (Puac, 2021).

In Malaysia, the top five states with the highest rate of unmarried teen pregnancies from 2017 to 2020 are Sarawak (4,869), Johor (1,883), Selangor (1,768), Sabah (1,501), and Perak (1,151) respectively (CodeBlue, 2021). The Ministry of Health (MOH) has recorded 41083 teen pregnancies between 2017 and 2022, of which 35 per cent, or 14,561 cases, were not married. Women, Family and Community Development Minister Rina Harun stated that the number of pregnant teens who decide to use governmental health facilities are about 10,000 every year which (CodeBlue, 2021).

Another qualitative study on teenagers' attitude towards teen pregnancies found that social media was perceived as the primary communication tool for sex related issues (Brandah, 2017).

According to Malaysian Deputy Minister Hannah Yeoh, between 2010 and May 2019, there were 292 cases of new-born babies abandoned near residential sites, and 115 infants were left in public bathrooms (Tang, 2019).

These cases of adolescent pregnancy have some common features, including unmarried status, low-income family conditions, lower educational levels, and school dropouts. Reliable evidence worldwide suggests that education about health issues and contraception can significantly reduce the incidence of unwanted adolescent pregnancies. The UNESCO curriculum on Comprehensive Sexuality Education (CSE) has proved to be an effective global intervention in this regard. In 2019 YouTube videos have been released in Putrajaya aiming to educate young people about sexual health and safety, and notices have been posted in baby dumping hotspots with helplines to prevent it. This can be considered a starting point for an information-based approach to deal with this problem that should be supported by all and no longer neglected by the Government (Teo, 2019).

Another consequence of unsafe sexual practices before marriage is the spread of HIV. Between 2005 and 2016, 40% of HIV cases in Malaysia were in people age 20 to 29, with 31% between 30 and 39, and 16% age 40 to 49— with 89% being men across age groups (Teo, 2019).

Problems like teen pregnancy are among the consequences of negative behaviours that can result from certain forms of Internet use, wherein youths are curious or excited to experience the stuff they see online and end up imitating it in the real world.

Attitudes Towards Internet Use

Ho et al. (2012) found that the influence of attitudes on internet searching behavior was mediated by website quality. Donat et al. (2009) added affective aspects to compare internet users and nonusers and found a higher perceived utility among internet users while non users tended to perceive it to be more difficult. They also found a positive relationship between users and their positive perceptions about internet use. Morse et al. (2011) studied attitudes based on three dimensions: general internet usage (general enjoyment towards Internet usage), negative internet attitudes, and task facilitation. More recently, Des Armier and Bolliger (2019) used Morse et al. (2011) scale to evaluate internet use among graduate students in USA. The results indicated that participants who had moderately positive internet attitudes were more likely to experience feeling of connectedness (2019).

Individual's academic performance is also reported to be affected once users have a positive attitude towards the internet (Porter & Donthu, 2006). Van Deursen et al. (2021) found that more positive attitudes were associated with higher education and incomes; in other words, positive attitudes towards internet improves skills.

Gratification of Internet Use

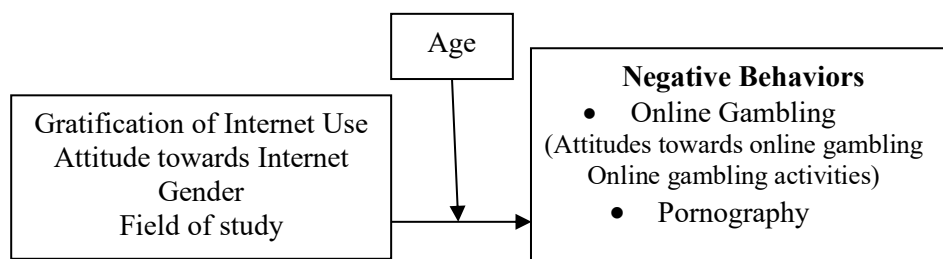
The theory of Uses and Gratification (U&G) explains the purposes of using any entertainment medium (Gan, 2017), the reasons for using it, and

the sense of satisfaction experienced by users (Malik, Dhir, & Nieminen, 2016; Whiting & Williams, 2013). Media audiences are free to select and follow their favorite media based on their preferences and purposes (Lee & Ma, 2012). Researchers use U&G theory to differentiate the various uses and gratifications users look for in both traditional and modern forms of media (Dhir, 2016; Dhir, Chen, & Chen, 2017; Gan & Li, 2018). The flexibility of U&G theory makes it applicable to diverse realms of users' activities, impetuses, gratifications, and media usage (Luo & Remus, 2014). Moreover, it allows scholars to survey media experiences through the lens of psychological needs, motivations, satisfactions, and communication channels in various cultural contexts (Chigona, Kankwenda, & Manjoo, 2008).

The uses and gratifications of social media platforms greatly influence intention to continue (Yen, Lin, Wang, Shih, & Cheng, 2019), shopping intentions (Aluri, Slevitch, & Larzelere, 2016), reasons for using, and patterns of use behavior (Gan, 2017). Social media scholars believe that users seek different U&G based on their use in the online context of social media which includes having fun, relaxing, communication, entertainment, love and comfort, looking for information, online self-exposure, and avoiding difficulties of everyday life (Dhir, 2016; Dhir et al., 2017; Hicks et al., 2012). In the end, different U&G have been categorized into four main groups: (1) content, (2) process, (3) social, and (4) technology (Li, Liu, Xu, Heikkilä, & van der Heijden, 2015; Sundar & Limperos, 2013). The sense of gratification elicited from Internet use can encourage youths to behave either positively or negatively. Families, society planners and politicians should harness this in a positive way to guide youth towards the right path and develop their potential.

Figure 1

The Relationship Between Internet Usage, Online Gambling and Pornography Use



Methodology

Location and Sampling

The sample for this survey study was drawn from local students between the ages of 18 to 40 years old (male and female) at the University Putra Malaysia (UPM). The Malaysian National Youth Development Policy defines young people as individuals between 15 and 40 years old (Yunus, 2007). Participants of this study were selected with stratified sampling, using the formula: $n = \frac{N}{1 + N e^2}$ (where n = sample size, N = the total student population, e = precision level with 95% confidence). This resulted in a sample of 440 students from 16 faculties of UPM. The sample size for each faculty was determined by dividing the student population of each faculty by the total population and multiplying by 440. For instance, for the Faculty of Agriculture undergraduates, $n = \frac{\text{Undergraduate Population}}{\text{Population of faculty}} * 440 = \frac{1285}{21170} * 440 = 26$, and for postgraduates, $n = \frac{483}{21170} * 440 = 10$, for a total of 36.

All questionnaires were anonymous, and the identity of the respondents were not published anywhere. All participants were free to end participation at any point with no penalty.

Participants

A group of Bachelor's, Master's, and PhD university students of three major existing ethnic groups Malay, Chinese, and Indian participated in this study. The researcher distributed questionnaire among 440 students.

The stratified random sampling was applied, and we asked the participants to fill in the survey questionnaire that addresses topics such as gratification from using the Internet, attitude toward using the Internet, online gambling, and online pornography use, as well as demographic variables such as age, gender, and field of study.

Based on the definition of youth in Malaysia (Deros, Daruis, & Nor, 2008), respondents below the age of 18 and above the age of 40 were omitted from the analysis. The sample included 32.3% male students and 67.7% female. Of the respondents, 78.3% were between 18 and 23 years old, followed by the 24 to 29-year-old group, which constituted 17.3% of the respondents, 3.7% from the 30 to 35-year-age group, whereas only 0.7% was from the 36 to 40-year-age group.

The distribution between the different faculties can be seen in Table 1.

Table 1

Distribution of Students from Each Faculty in the Study Sample

Faculty	Proportion	Faculty	Proportion
Agriculture	10.7%	Food Science	4.1%
Biotech/Biomolecular Sci.	2.0%	Forestry	2.3%
Comp. Sci. & IT	3.2%	Graduate Study Management	5.0%
Design & Architecture	3.4%	Human Ecology	7.3%
Economics	8.9%	Medicine	8.9%
Education	2.3%	Modern Language & Comm.	9.1%
Engineering	4.5%	Science	25.7%
Environment	1.1%	Veterinary Medicine	1.6%

Measurement

There was a total of 78 items in the questionnaire for measuring the relationship between Internet use, online gambling, and pornography use.

Gratification from Internet use was measured by 23 items divided into five main dimensions: cognitive (6 items), personal integration (5), escape (4), social integration (4), and affective (4). These items were in the form of statements to be rated on a 5-point Likert scale from “I strongly agree” to “I strongly disagree.”

Attitude towards the Internet was measured by 19 statement items, also rated on a five-point Likert scale from 1 = “I strongly disagree” to 5 = “I strongly agree.”

Pornography use was measured by 18 items about how often respondents engaged with pornography on websites, in movies, Facebook groups, etc. These were also rated on a five-point Likert scale, in this case ranging from “not at all” to “very frequent,” and operationalized as an interval scale. The Internet Sex Screening Test (ISST), developed by Delmonico and Griffin (2016) to measure variables including the reasons for watching porn or visiting sex related websites, was also employed in the current study.

For measuring attitudes towards online gambling, three items describing reasons for gambling were evaluated by 5-point Likert scale ranging from “not at all” to “very frequent.” These items were, (1) “to enjoy it,” (2) “to relieve the boredom,” and (3) “to win the money.” One additional item asked how often they gambled online had five response options ranging from “at least once a week” to “at least once in the last three months.” Eleven items about the kinds of online gambling activities respondents were involved in were evaluated by “yes” or “no” questions. The researchers used

questionnaire developed by Myrseth and Notelaers (2017) and Milosevic and Ledgerwood (2010).

Demographics included the three items of age, field of study, and gender.

Data Analysis

The data analysis was done using SPSS 24. First, descriptive statistics were calculated for levels of gratification from using the Internet, attitudes toward using the Internet, and its impacts on gambling and pornography activities, as well as demographic factors. Inferential analysis was done to ascertain the correlation between Internet use gratification, attitude towards Internet use, age, gambling, and pornography use. Gambling, and pornography use were compared by gender, and by field of study (social science vs. science) with *t*-tests. Thirty respondents participated in a pilot test of the gambling and pornography measure to test its validity and reliability, resulting in a Cronbach's Alpha coefficient above 0.7. All the variables were also tested for normality before the final analysis.

Findings

a. Attitudes Towards the Internet

The statement that “the Internet is the fastest way to gain knowledge” was the dominant view ($M = 4.45$, $SD = 0.78$), followed by “the Internet is a universal library” ($M = 4.40$, $SD = 0.82$). The statements, “the Internet is a way to provide information for research purposes,” and “It is exciting to get information from the Internet” and, “the Internet provides total freedom for all” had the highest mean among attitudes items. The least agreed to statements were “the Internet makes people to be alone” ($M = 3.01$, $SD = 1.09$) and “the Internet destroys societies” ($M = 3.08$, $SD = 0.98$).

b. Gratification of Using the Internet

In the terms of Internet gratification cognitive dimension, “to get information in certain subjects” was the most assented reason ($M = 4.38$, $SD = 0.70$), while “to keep up to date on popular sites” ($M = 3.90$, $SD = 0.89$) was the least. Regarding the escapism, “to relax and unwind” ($M = 4.21$, $SD = 0.74$) had the highest mean, and “to get away from pressure and responsibilities” ($M = 3.49$, $SD = 1.08$) had the lowest. With regard to the social integration, “to keep in touch with people” had the highest mean ($M = 4.15$, $SD = 0.73$), and “because I need to talk to someone” had the lowest ($M = 3.51$, $SD = 0.99$).

For social integration, “to keep in touch with people” ($M = 4.15$, $SD = 0.73$) had the highest mean, and “because I need to talk to someone” ($M = 3.51$, $SD = 0.99$) had the lowest. Regarding the affective aspect of Internet use, “because it entertains me” ($M = 4.12$, $SD = 0.76$) was highest, and “to play role or participate in an experiment personally” ($M = 3.41$, $SD = 0.99$) had the lowest.

The last and least dimension was personal integration in which the highest mean belonged to “I can do things in my private space” ($M = 4.09$,

$SD = 0.80$). In general, cognitive aspects had the highest mean scores among all items related to the satisfactory dimension of Internet use ($M = 4.18$), and personal integration had the lowest ($M = 3.62$).

c. Gambling

Most of the respondents agreed that they gambled online to relieve boredom ($M = 1.45$, $SD = 1.01$), followed by “to enjoy gambling” ($M = 1.43$, $SD = 1.00$). Poker and Bingo were the most popular of the other games with 9.8% and 7.5% of respondents, respectively, indicating it as their favourite. Of the total number, 82% percent of the students reported never gambling online while just 9.5% said they had gambled online at least once a week.

d. Pornography

The pornography-related statement with the highest agreement was “I have made promises to myself to stop using the Internet for sexual purposes” ($M = 1.68$, $SD = 1.33$), followed by “I have punished myself when I used the Internet for sexual purposes (e.g., time-out from computer, cancel Internet subscription, etc.)” ($M = 1.40$, $SD = 1.01$). The two least assented statements were “I have paid fees to access sexual materials online” and “I have spent more money for online sexual material than I planned” ($M = 1.10$, $SD = 0.47$).

Correlations

Significant but weak negative associations with age were found for attitude towards online gambling ($r = -.103$, $p < .05$), and online gambling activities ($r = -.099$, $p < .05$). There was not a significant relationship between gratification by Internet use and attitudes towards online gambling, between gratification of using the Internet and online gambling activities, between attitude towards the Internet and attitudes towards online gambling, or between attitudes towards the Internet and online gambling activities. The associations between age, gratification of using the Internet and attitudes towards the Internet and pornography were also not significant.

Table 2

Pearson Correlation Coefficients (n = 440)

Variables	Attitudes towards Online Gambling		Online Gambling Activities		Pornography	
	<i>r</i>	<i>p</i>	<i>r</i>	<i>p</i>	<i>r</i>	<i>p</i>
Age	-.103*	.032	-.099*	.038	-.055	.246
Gratification of Internet Use	.029	.541	.011	.822	.064	.179
Attitudes toward Internet	.047	.323	-.022	.646	-.034	.471

* $p < .05$ **Comparisons by Gender and Field of Study**

Males had significantly higher measure scores than females for both attitude towards online gambling and pornography. However, the difference for online gambling activities was not significant. There was no significant difference between fields of study in frequency of online gambling activities or pornography use.

Table 3

T-Test Statistics Comparing Gambling and Pornography Score by Gender (n = 440)

Gender	Attitudes towards Online Gambling			Online Gambling Activities			Pornography		
	Mean	<i>t</i>	<i>p</i>	Mean	<i>t</i>	<i>p</i>	Mean	<i>t</i>	<i>p</i>
Male	8.92	2.603*	.010	0.44	1.04	.137	28.90	6.901*	< .001
Female	8.38			0.34			20.82		

* $p < .05$

Table 4

T-Test Statistics Comparing Gambling and Pornography Scores by Field of Study (n = 440)

Field of Study	Attitude Towards Online Gambling				
	<i>N</i>	Mean	<i>SD</i>	<i>t</i>	<i>p</i>
Science	297	8.56	1.72	0.200	.22
Social Science	143	8.53	2.07		
Online Gambling Activities					
Science	297	0.38	1.02	0.174	.57
Social Science	143	0.36	0.79		
Pornography					
Science	297	23.92	9.80	1.517	.07
Social Science	143	22.46	8.70		

The Regression Model

Simple linear regression was carried out to investigate the relationship between gratification of using the Internet, attitudes towards the Internet, age, gender, field of study, attitudes toward online gambling, online gambling activities and pornography use. An *R*-squared value of .148 indicated that Internet usage explained about 15% of variance in attitudes towards online gambling, with a significant model fit ($F = 39.096$, $p < .05$), which means that the slope of estimated linear regression model line was not equal to zero. Therefore, it is confirmed that there was a significant linear relationship between 'Internet usage and online gambling' and 'Internet usage and using pornography'.

With a beta coefficient was ($\beta = .148$) at the level of 0.05, therefore, 14% of attitudes towards online gambling can be predicted by Internet usage (Table 5). Online gambling activities have positive significant effects on attitudes towards online gambling with ($\beta = .36$) and pornography ($\beta = .137$) with 36% and 13% prediction respectively.

Table 5

Regression Coefficients (n=440)

Internet Usage	<i>B</i>	Beta	<i>t</i>	<i>p</i>
Online gambling activities	.698	.360	8.165	< .001
Pornography	.027	.137	3.097	.02

Correlations with Gender and Age

As shown in Table 7, attitude towards gambling had significant but small negative associations with age and gender, a small positive relationship with pornography use, and a moderate positive relationship with online gambling activities. Age also had a small negative correlation with online game activities and a small positive one with gratification of using the Internet. Pornography use was also negatively correlated with gender. Finally, attitudes towards the Internet had a positive relationship with gratification of using the Internet (Table 6).

Table 6

Pearson Correlation Coefficients (n=440)

	1	2	3	4	5	6
(1) Gender	1					
(2) Age	.043	1				
(3) Attitude to online gambling	-.137**	-.103*	1			
(4) Pornography	-.398**	-.055	.150**	1		
(5) Online gambling activities	-.050	-.099*	.365**	.036	1	
(6) Attitude towards the Internet	.060	.093	.047	-.034	-.022	1
(7) Gratification of using the Internet	-.002	.102*	.029	.064	.011	.328**

** $p < .01$, * $p < .05$

Discussion and Conclusion

The present study attempted to find out any relationship of gratification of using the Internet and attitudes towards the Internet with online gambling and pornography among Malaysian youths of various ages, fields of study and genders. The five main findings were as follows: (1) there was no relationship between gratification of using the Internet and pornography use; (2) there was no relationship between attitude toward the Internet and online gambling or pornography; (3) age negatively correlated with both online gambling variables, but not for pornography; (4) online gambling activities did not differ by gender; (5) measures of attitudes towards online gambling and pornography use were both higher mean for males than females; (6) there were no differences in online gambling and pornography between students in different fields of study.

1. The lack of correlation between Internet use gratification and online gambling and pornography contrasts with the findings of Whelan et al. (2021) who examining mobile gambling gratification (obsessive and harmonious), the motivational foundations behind mobile gambling are not similar in obsessive and harmonious passion: poor state of mind and gambling problems are related to the obsession passion while harmonious passion is related to a positive state of mind only. Moreover, Oksanen et al. (2019) found a statistically significant relationship between a number of behavioral problems and participating in gambling.

2. Attitudes towards the Internet was not correlated with online gambling or pornography. Media nowadays attempts to improve the public's attitudes through using celebrities. The role of media and celebrities in forming people's ideas is undeniable. Gambling companies spend money on advertising in the targeted websites to shift searching traffic to their platform. A considerable part of sports betting is also directed through social media markets which are popularized by celebrities with huge followings. Celebrities make gambling sites more attractive and acceptable to prospective clients, so it is unsurprising that gambling companies spend tremendous amounts of money for celebrities to endorse them. Some scholars have proposed that Malaysian society must use the popularity of the Internet as a powerful advertising tool for introducing various businesses. (Muhammad, 2018)

3. While there were small negative relationships between age and the online gambling variables, there was none for pornography use. Amahazion (2021) also concluded that most young people have been exposed to pornographic content at least once. And Harian Metro reported that 28,671 Malaysian teenagers were addicted to pornography in 2016 (the total number of teenager was in 2016) (Hawafi et al., 2017). The total population of teenagers between 11 to 19 years old was 5,493,957 (2,829,273 male and 2,664,684 female (The United Nations Statistics Division, 2018).

4. Some appropriate filtering programs to restrict adult context for users on the internet could help to ameliorate this problem. However, age did negatively correlate with endorsement and engagement in online

gambling with younger people who were more likely to get involved in online gambling. That is why certain registration limitations are required such as creating accounts for financial transactions (That Eric Alper, 2020).

In accordance with the results of previous research, males were more likely to use pornography than females. Amahazion (2021), for instance, also found young men were more likely to visit pornographic sites than young women, noting that people use pornographic materials for different reasons. Some of the motivations are Stress reduction, sexual pleasure, and boredom avoidance (Emamzadeh, 2021). Choi et al (2017) also reported that young adults were more prone to smartphone and pornography addiction , requiring behavioural intervention. The proliferation of online pornography is a phenomenon that is increasing worldwide, and by no means restricted to Malaysia. Globally, Malaysia was ranked as the fourth country with the most visits to pornography websites (leah, 2022). Manaf et al. (2014) highlighted the importance of sex education programs and awareness campaigns for the youth to avoid various social problems such as this. Women bear the consequences of pornography addiction more than men. According to WHO (2019), adolescents between 15–19 years old in low- and middle-income countries had about 21 million pregnancies annually; half of them were unintended and resulted in an estimated 12 million births in the world (Sully et al., 2019). Social media also bears some responsibility for providing easy access to pornographic materials (Brandah, 2017).

5. Similarly, males were more likely to endorse/engage in online gambling than females, in alignment with the findings of previous studies such as those of Lelonek-Kuleta et al. (2020) and Elton-Marshall et al. (2016). Gómez et al. (2020) also found that 90% of online gamblers in their studies were men (InTarget, 2022), and that online gamblers were more likely to engage in problematic Internet use, cyber-bullying, or contacting total strangers via the Internet. There are some studies, however, that contrast with the outcome of this study, having found online gambling to be similarly common in young men and women (Edgren et al. (2017) Auer et al., (2020). Sheldon (2018) also found that the number of women using gambling sites is gradually increasing.

6. Finally, students in different fields of study (e.g., science, humanities, agriculture, etc.) did not significantly differ in gambling and pornography attitudes/behaviours.

In order to overcome such gambling problems, one possibility is that the Malaysian government could produce various and exciting online games for people of different ages so that their tendencies towards certain games and gambling sites will be substituted. Malaysian companies can also create games for Muslim and non-Muslim people of different age groups.

Proper workshops with the topic of the benefits and harms of online gambling and pornography can be held to familiarize people with the negative consequences of such activities. Once the youth are encouraged to raise their awareness on the issue, they will be prepared to face the possible challenges. In addition, Malaysian politicians and law makers may plan ways to inform

adolescents of the consequences of addiction to online gambling and pornography (Sheela et al., 2016).

Limitations

The results of the present study cannot be generalized to all youth in Malaysia, as the sample was selected from only university students. In order to overcome this limitation, it is suggested to include a more comprehensive youth sample in the future research.

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There is no competing interest.

Availability of data and material:

The datasets generated or analyzed during this study are available from the corresponding author upon request.

Author's contributions

Toktam Namayandeh collected conducted data collection and data analysis. Fatemeh Shahmohammadi reviewed the literature review wrote the introduction. Amla Salleh edited and finalized the paper

Ethics and informed consent

This study used secondary de-identified data.

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