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Exploring Differences in Demographic Profiles and Digital Footprint Awareness between Private and Public-School Students: A Comparative Study

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A B S T R A C T

The objective of this study was to contrast the digital footprint awareness and demographic characteristics of college students enrolled in private and public higher education institutions (HEIs) in the Philippines. Using a quantitative descriptive research design, the study collected data from 497 respondents from both types of institutions during the first semester of the academic year 2022-2023. The research instrument was adopted from a previous study but modified to fit the context of this study. The instrument underwent content and face validity measures to ensure that it was valid. Results showed that there were no significant differences in digital footprint awareness between the respondents from private and public HEIs. The study offered valuable insights into the similarities and distinctions in digital footprint awareness among college students in private and public higher education institutions in the Philippines. The study recommended further research on the factors that affected digital footprint awareness, such as social media use and online behavior. Additionally, the study suggested the development of educational programs and campaigns to raise awareness about digital footprints and cybersecurity among college students.

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INTRODUCTION

The impact of 21st-century technologies on students and their digital footprints has been significant (OECD, 2016). In fact, several national governments, such as Costa Rica, Estonia, Finland, France, Greece, and Spain, have officially recognized Internet access as a fundamental human right, given the significant role it plays in providing access to online information and services (United Nations, 2011). One impact is the blurring of lines between personal and academic lives, as students increasingly use social media and other digital platforms for both personal and academic purposes (Kolhar, Kazi, & Alameen, 2021). This can result in unintentional exposure of personal information, putting their privacy and security at risk (Nidirect, 2023). Additionally, the use of technology in education has led to the creation of digital records that can follow students throughout their academic and professional lives, potentially affecting their reputation and opportunities (eSafety commission n.d; Leaving digital footprint, n.d.).

Furthermore, the use of social media and other digital platforms can also lead to cyberbullying, harassment, and other negative consequences (UNICEF, n.d.; Elçi & Seçkin, 2019; Abaido, 2020), which can create a damaging digital footprint. Hence, students must acknowledge the potential outcomes of their online conduct and adopt measures to responsibly manage their digital footprints. By doing so, students can protect their privacy and security, maintain a positive online reputation, and avoid negative consequences that could impact their future opportunities. The responsible use of technology is critical for students to make the most of its benefits while minimizing its potential risks (Bayanov et al., 2019).

A digital footprint is the trail of data that an individual's online activity leaves behind (Reyes, 2022; Nordli, 2022), which encompasses their browsing history, search queries, social media posts, and other interactions. Third-party entities, ranging from advertisers to prospective employers, can utilize this data to track, monitor, or analyze a person's behavior. Managing one's digital footprint is essential to safeguard their privacy, security, and reputation. This involves being cautious about what is posted online, employing privacy settings and security measures, and regularly reviewing their digital footprint. Today, digital footprint plays a role in people’s employment and educational opportunities (Buchanan, 2018).

Sürmelioğlu and Seferoğlu (2019) reported that of the 508 student-respondents, they have found that students have a high level of digital footprint awareness. Similarly, in an earlier study conducted by Buchanan et al. (2017) involving 33 students, they expressed that children were aware of their digital footprints and cyber safety. The studies by Sürmelioğlu and Seferoğlu (2019) and Buchanan et al. (2017) suggested that students exhibit a significant level of awareness with regards to their digital footprints. This finding was interesting because it contradicted the common assumption that students may not fully understand the potential consequences of their online behavior. The results suggest that children and young adults may be more aware of their online

presence and the impact it can have on their privacy and reputation than previously thought.

These studies highlighted the importance of educating students on responsible online behavior and how to manage their digital footprints effectively. Future research could investigate the factors that contribute to high levels of digital footprint awareness among students, as well as potential differences in awareness levels between public and private school students.

Having awareness of one's digital footprint is essential since it provides numerous benefits (Indeed Editorial Team, 2022). By monitoring their digital trail, individuals can safeguard their privacy by limiting personal information shared, setting strong passwords, and reviewing privacy settings. This allows individuals to maintain a positive online reputation by managing their digital footprint and presenting themselves positively to potential employers, educational institutions, and other entities. Moreover, being aware of their digital footprint helps individuals avoid online harassment by identifying and taking action against instances of cyberbullying. Lastly, monitoring their digital footprint protects individuals against identity theft and fraud by enabling them to detect and respond to potential security threats.

On the other hand, being unaware of one's digital footprint can lead to several disadvantages (Johnson, 2021). Personal information and data may be unintentionally exposed to third parties, such as hackers, advertisers, and cybercriminals, resulting in a potential security threat. An individual's digital footprint, which may contain damaging information or activity, can be accessible to others, including educational institutions and potential employers, leading to reputation damage or missed opportunities, such as job offers and education. Additionally, advertisers may use digital footprint information to target individuals with irrelevant or unwanted ads, causing frustration and time consumption. Identity theft can also occur, resulting in serious financial and legal consequences. Thus, it is important to manage and monitor one's digital footprint regularly to avoid such consequences.

The topic of exploring differences in demographic profiles and digital footprint awareness between private and public school students is a relatively new area of research. While there is existing research on digital footprints and online behavior among students (Olipas, 2023), there is a gap in understanding how demographic factors such as socioeconomic status, gender, and age may impact digital footprint awareness among private and public school students. This study aimed to address this gap in the literature and provide valuable insights into how demographic factors may affect digital footprint awareness and management practices among students attending private and public schools. By identifying these differences, educators and policymakers can develop targeted interventions to improve digital literacy and promote responsible online behavior among students from diverse backgrounds.

METHODOLOGY

In this study, the use of a quantitative research design allowed for the collection and analysis of numerical data, which could be generalized to a larger population. Through the utilization of a descriptive approach, the researcher was able to enhance comprehension of the extent of digital footprint awareness among college students. The study sample consisted of 497 college students from both private and public higher education institutions in Nueva Ecija, Philippines during the first semester of the academic year 2022-2023, which is considered statistically significant.

The study employed an adapted version of the digital footprint awareness instrument originally developed by Surmelioglu and Seferoglu (2019), which was modified to fit the study's context. The instrument included two parts, covering the demographic profile of the students and their level of digital footprint awareness. Face and context validity measures were taken to ensure the reliability and validity of the instrument, and expert input was sought in order to improve it.

Range	Level of Awareness	Verbal Description
3.26 – 4.00	Mindful	This is the highest level of awareness, where the student is fully present and engaged with the details relating to their digital footprint, and has a deep understanding and knowledge of what is happening.
2.51 – 3.25	Aware	This level is characterized by a heightened level of awareness, where the student is actively paying attention and processing information about something.
1.76 – 2.50	Conscious	At this level, the student is aware of something, but may not have a deep understanding or knowledge of it.
1.00 – 1.75	Unaware	This is the lowest level of awareness, where the student is completely unaware of something or has no knowledge of it.

Table 1. Scoring Guide

During the first semester of the academic year 2022-2023, an online survey tool was used by the researcher to gather data for this study. The instrument provided all the necessary information that potential respondents needed to know before participating in the study. The researcher took measures to ensure that the data collected would be used exclusively for the purpose of this study, and that proper protocols were followed for data retrieval, collection, storage, and destruction. Precautions were taken to prevent any harm from being inflicted on the respondents.

After the data was collected, cleaned, and organized, it was analyzed using Software Packages for Social Sciences (SPSS) version 23. The researcher

utilized descriptive statistics such as frequency and percentage distribution, as well as mean ratings.

RESULTS

Sex

The distribution of respondents based on their sex is presented in Figure 1, showing the percentage breakdown. This figure provides a basic demographic profile of the respondents and is essential in understanding the characteristics of the sample population. The data was collected through a survey questionnaire administered to a sample of students from both private and public colleges in the institution.

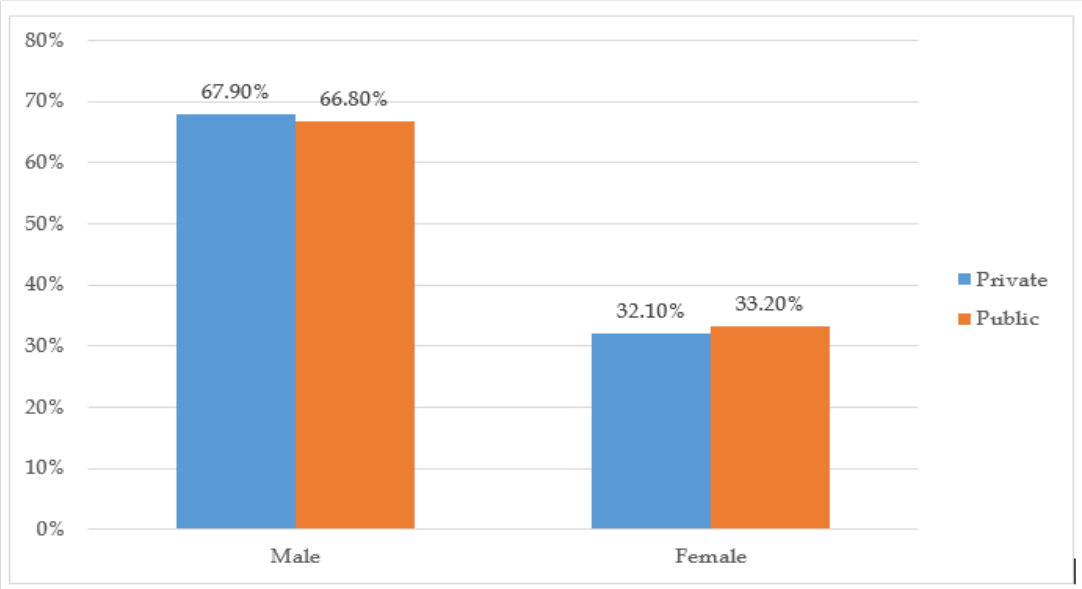

Figure 1. Comparing percentage distribution between private and public HEIs based on sex

Year Level

The distribution of respondents who took part in a study evaluating their digital footprint awareness from private and public higher education institutions in the Philippines is illustrated in Figure 2. The figure displays the number and percentage of respondents in each year level, providing an overview of the distribution of the sample population across the different levels of study.

The study's findings could offer valuable insights into the digital footprint awareness of college students in the Philippines, particularly in how their knowledge and behavior may evolve as they advance in their academic pursuits. This information could be useful for educators, policymakers, and other stakeholders in the education sector who are interested in promoting digital citizenship and online safety among college students.

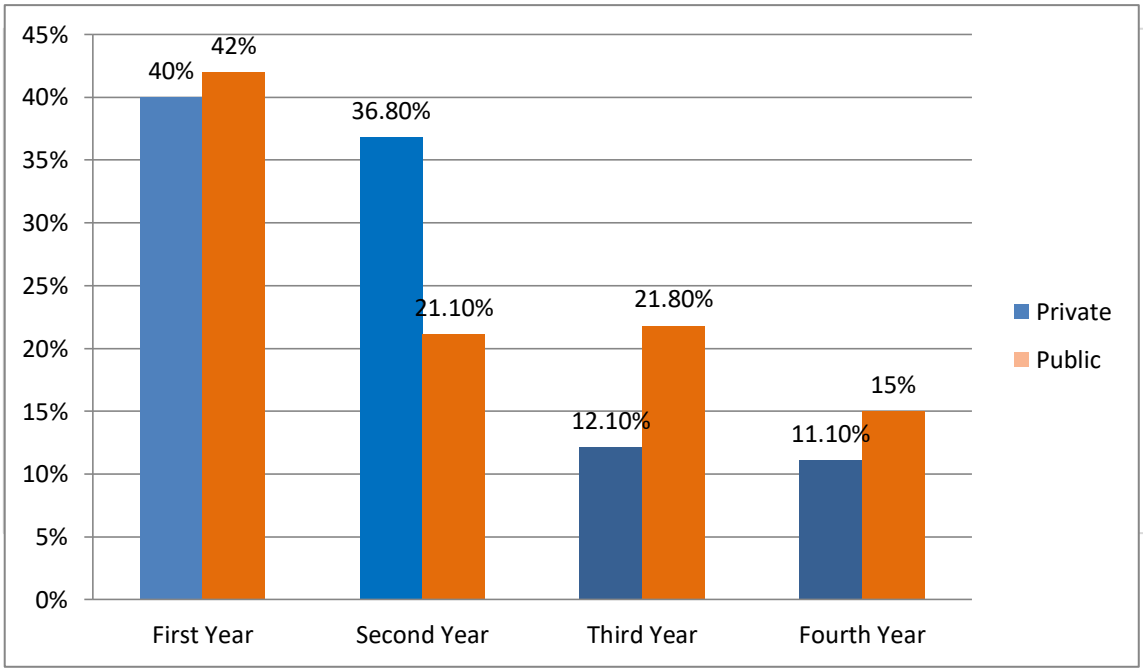

Figure 2. Comparing percentage distribution between private and public HEIs based on year level

Internet Access Time

Figure 3 compares the percentage distribution of private and public Higher Education Institutions (HEIs) based on the respondents' internet access time in relation to their digital footprint awareness. The figure shows the differences in the proportion of respondents from private and public HEIs who spend varying amounts of time accessing the internet and how it affects their digital footprint awareness and experience.

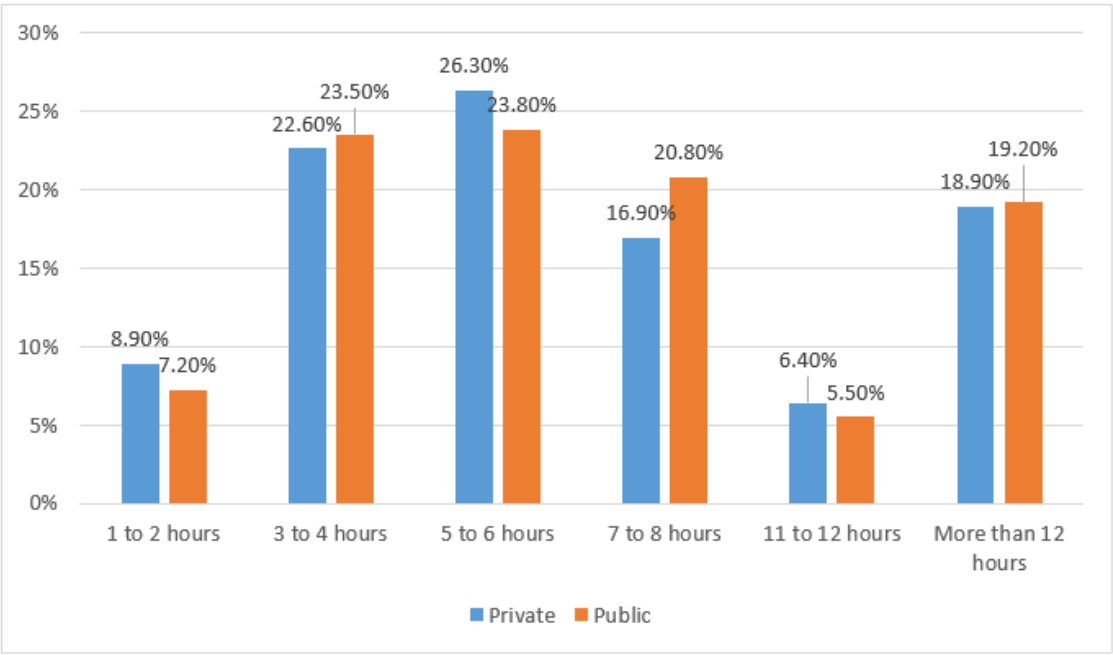

Figure 3. Comparison of percentage distribution between private and public HEIs based on internet access time

Gadgets Owned

Figure 4 presents a comparison of the percentage distribution between private and public higher education institutions (HEIs) respondents based on the type of gadgets they owned. The figure aims to provide insight into the technology ownership of respondents in both private and public HEIs.

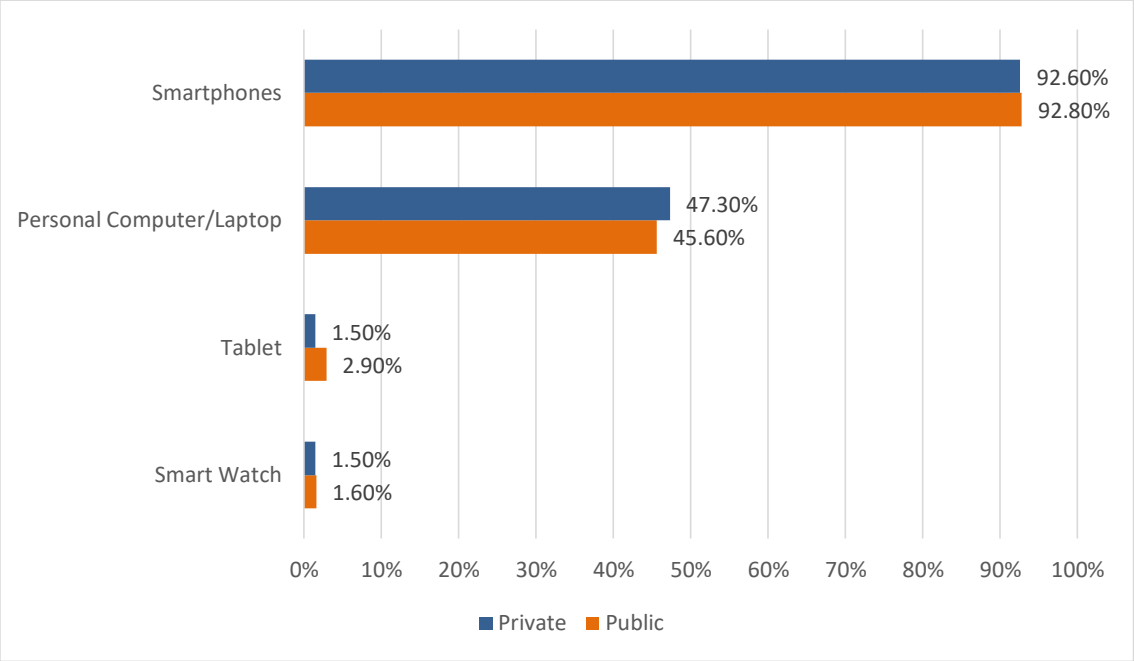

Figure 4. Comparison of percentage distribution between private and public HEIs based on types of gadgets owned

Frequently Accessed Sites

The comparison of the percentage distribution of frequently accessed sites between private and public HEI respondents is presented in Figure 5. This data is crucial for exploring the digital footprint awareness of college students. Analyzing the frequently accessed sites can help identify the online platforms commonly used by students and the types of information they share, which can have significant implications for their digital footprint. Educators can develop appropriate strategies to promote digital citizenship and safe online practices by understanding the online behavior of college students.

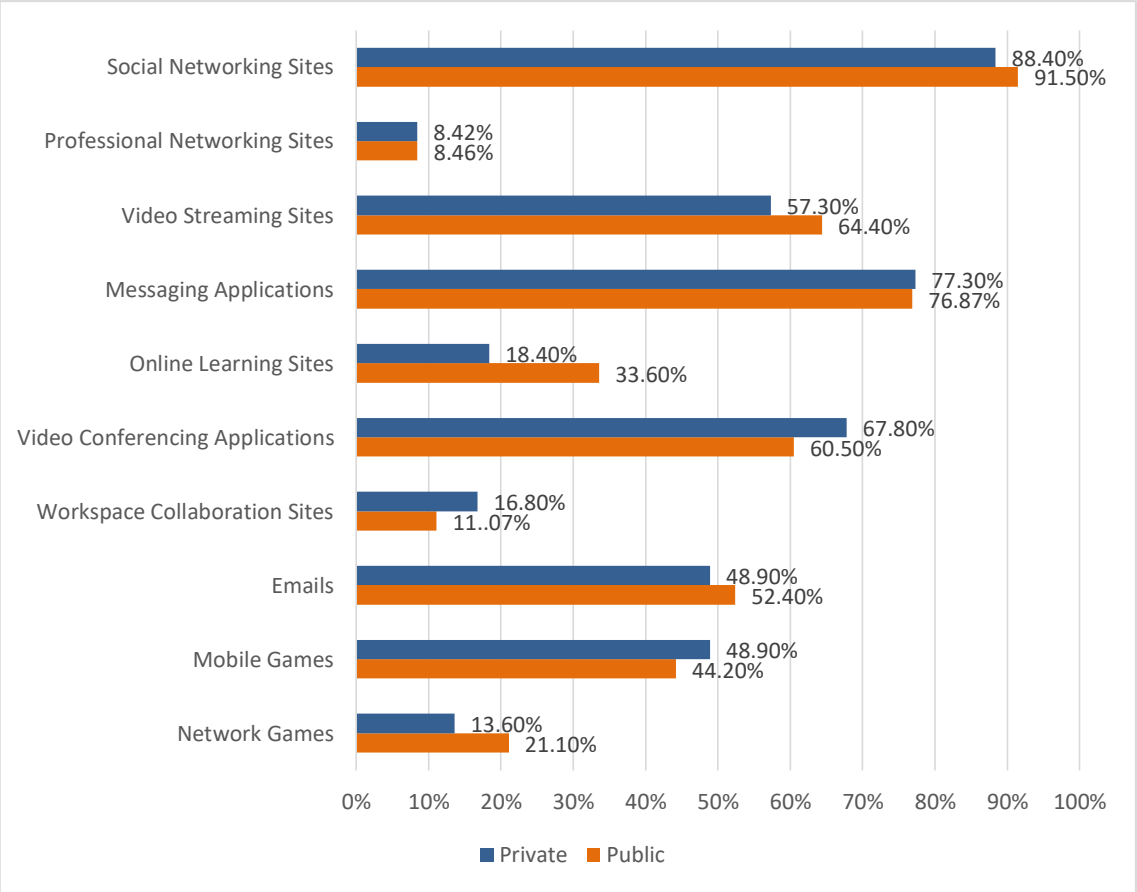

Figure 5. Comparison of percentage distribution between private and public HEIs based on frequently accessed sites

Online Activities

Table 2 shows the comparison between the digital footprint awareness relating to online activities of private and public HEI students.

Item Statements	Private School			Public School		
	μ	SD	VD	μ	SD	VD
Before sharing a comment or article in digital environment, I check what I have written in terms of spelling many times and then share it.	3.48	0.512	Mindful	3.46	0.518	Mindful
Before sharing a comment or article in digital environment, I check what I have written in terms of spelling many times and then share it.	3.42	0.546	Mindful	3.43	0.581	Mindful
Before sharing a comment	3.37	0.555	Mindful	3.37	0.587	Mindful

or article in digital environment, I check the date it was posted and the source, and then share it						
I conduct fact-checking of comments and/or articles I see online before sharing it	3.37	0.555	Mindful	3.41	0.561	Mindful
I double check the sources of information if it is a legitimate source before sharing it in digital environment	3.45	0.568	Mindful	3.44	0.571	Mindful
Overall Mean		**3.41**			**3.42**	
Verbal Interpretation		**Mindful**			**Mindful**	
p-Value			**0.932**			
Decision			**No Significant Difference**			

Table 2. Comparison between the Digital Footprint Awareness relating to Online Activities of Private and Public HEI Students

Personal Information

Table 3 compares the digital footprint awareness of private and public HEI students in relation to their personal information. The table presents the mean, standard deviation, verbal interpretation, overall mean, p-value, and decision for each item statement.

Item Statements	**Private School**			**Public School**		
	μ	**SD**	**VD**	**μ**	**SD**	**VD**
I am aware that information about myself in digital environments can be encountered in my school, professional, or private life	3.42	0.515	Mindful	3.43	0.552	Mindful
I play it safe when I share information in digital environments because they may be encountered in my professional or private life	3.41	0.524	Mindful	3.42	0.562	Mindful
I am aware that the contact details I supply in different sites in different digital platforms can be use by others	3.26	0.558	Mindful	3.36	0.569	Mindful
I know that the personal details I put the different online platforms that I use can leak and be accessed by	3.27	0.588	Mindful	3.33	0.637	Mindful

others						
I am aware that somebody may access my public personal information and use it to their advantage	3.30	0.617	Mindful	3.36	0.618	Mindful
Overall Mean	**3.33**			**3.38**		
Verbal Interpretation	**Mindful**			**Mindful**		
p-value	**0.266**					
Decision	**No Significant Difference**					

Table 3. Comparison between the Digital Footprint Awareness relating to Personal Information of Private and Public HEI Students

Online Transactions

Table 4 shows the comparison of the digital footprint awareness of private and public school students regarding their knowledge about their transactions in digital environments.

Item Statements	**Private School**			**Public School**		
	μ	**SD**	**VD**	**μ**	**SD**	**VD**
I know that all kinds of transactions that I perform in digital environments will be recorded	3.32	0.522	Mindful	3.36	0.544	Mindful
I am aware that none of the transactions that I perform in digital environments may remain anonymous	3.23	0.572	Mindful	3.25	0.611	Mindful
I know that the transactions I perform in the digital environments leave a trace and contribute to my online trail	3.25	0.511	Mindful	3.33	0.560	Mindful
I am aware that may online transactions in digital environments are stored in the site which I visit	3.21	0.561	Aware	3.37	0.570	Mindful
I know that part of the transactions I made online can reflect in different accounts I access.	3.22	0.573	Mindful	3.31	0.587	Mindful
Overall Mean	**3.25**			**3.30**		
Verbal Interpretation	**Mindful**			**Mindful**		
p-value	**0.067**					
Decision	**No Significant Difference**					

Table 4. Comparison between the Digital Footprint Awareness relating to online transactions of Private and Public HEI Students

Online Platform

Table 5 presents the comparison between the digital footprint awareness of private and public HEI students in relation to online platforms.

Item Statements	Private School			Public School		
	μ	SD	VD	μ	SD	VD
I am aware that my information/sharings may be found by other people in environments like internet cafe and shared computers	3.32	0.596	Mindful	3.36	0.608	Mindful
I take necessary precautions so that other people will not see or use my personal information in digital environments	3.38	0.557	Mindful	3.47	0.544	Mindful
I am aware that my log trail in different environments and platforms are being recorded	3.28	0.627	Mindful	3.36	0.616	Mindful
I am aware that the passwords and other personal details are stored in different environments I use and access	3.31	0.601	Mindful	3.36	0.618	Mindful
I know that there is a possible of leakage of information in the sites I visit	3.36	0.562	Mindful	3.40	0.547	Mindful
Overall Mean	**3.33**			**3.39**		
Verbal Interpretation	**Mindful**			**Mindful**		
p-value	**0.162**					
Decision	**No Significant Difference**					

Table 5. Comparison between the Digital Footprint Awareness relating to online platforms of Private and Public HEI Students

Privacy and Security

Table 6 shows the comparison between the digital footprint awareness relating to privacy and security of private and public HEI students.

Item Statements	Private School			Public School		
	μ	SD	VD	μ	SD	VD
I use privacy settings in online forms	3.47	0.560	Mindful	3.47	0.584	Mindful
I always check and arrange	3.39	0.569	Mindful	3.44	0.582	Mindful

privacy settings in online tools						
I read and understand the privacy and security terms of the sites I access and use	3.35	0.579	Mindful	3.37	0.631	Mindful
I always delete history logs and cookies	3.18	0.692	Aware	3.29	0.707	Mindful
I change my password in different accounts regularly	2.98	0.783	Aware	3.14	0.746	Aware
Overall Mean		**3.27**			**3.34**	
Verbal Interpretation		**Mindful**			**Mindful**	
p-value			**0.153**			
Decision			**No Significant Difference**			

Table 6. Comparison between the Digital Footprint Awareness relating to privacy and security of Private and Public HEI Students

Comparison of Overall Digital Footprint Awareness

Table 7 displays a comparison of the overall digital footprint awareness of private and public HEI students.

Item Statements	**Private School**			**Public School**		
	μ	**SD**	**VD**	**μ**	**SD**	**VD**
Overall Digital Footprint Awareness	3.32	0.569	Mindful	3.27	0.551	Mindful
p-value			**0.298**			
Decision			**No Significant Difference**			

Table 7. Comparison between the Overall Digital Footprint Awareness of Private and Public HEI Students

DISCUSSION

Sex

The distribution of respondents by sex in private and public higher education institutions in the Philippines could be interpreted based on the data presented in Figure 1. The figure displayed the percentage of male and female respondents in each type of higher learning institution. In the private HEI, male respondents accounted for 67.9% of the sample, while female respondents accounted for 32.1%. Conversely, in the public HEI, male respondents constituted 66.8% of the sample, while female respondents constituted 33.2%.

The data suggested that there were slightly more male respondents in both private and public HEIs. However, the difference in the percentage distribution between males and females was not significant between the two types of learning institutions. It should be noted that the sample size and the sampling technique used in the study could have affected the generalizability of the results (Nikolopoulou, 2023). As a result, caution had to be taken in interpreting the data presented in this figure, and further analysis might have been necessary to understand the demographic characteristics of the

respondents in more detail. While the main goal of this section of the study was to describe the number of respondents participating in both HEIs, the results opened future research undertakings that other researchers might also consider.

Year Level

The interpretation of the percentage distribution of respondents across various year levels in private and public higher education institutions in the Philippines could be derived from the data illustrated in Figure 2.

The data indicated that the majority of respondents from both private and public HEIs were first-year and second-year students, while a lesser percentage were from third-year and fourth-year levels. Specifically, in the public HEI, the largest percentage of respondents were first-year students, comprising 42% of the sample, while in the private HEI, first-year students accounted for 40% of the sample. Second-year students were the second largest group of respondents in both HEIs, comprising 21.10% and 36.80% of the sample in the public and private HEIs, respectively.

On the other hand, third-year and fourth-year students had a smaller representation in both private and public HEIs. In the public HEI, third-year and fourth-year students accounted for 21.80% and 15% of the sample, respectively, while in the private HEI, third-year and fourth-year students made up 12.10% and 11.10% of the sample, respectively.

The data also suggested that the distribution of respondents by year level was similar between private and public HEIs, with no significant difference in the proportion of respondents across different year levels. One factor that had caused this small difference in terms of the number of students from both private and public HEIs in the Philippines was the initiative of the Philippine government for universal access to tertiary education. The Universal Access to Quality Tertiary Education Act (Republic Act 10931) was a law in the Philippines enacted in 2017. It provided free tuition and other school fees in state and local universities and colleges, as well as state-run technical-vocational schools, for all Filipinos regardless of socio-economic status. The law also offered financial assistance to poor but deserving students in private higher education institutions. The aim was to increase the number of college graduates in the country, promote economic development, and reduce poverty by providing access to higher education to all Filipinos (Republic Act No. 10931 | GOVPH, 2017).

However, it is important to note that the sample size and sampling technique used in the study could have affected the generalizability of the results. Therefore, further analysis may have been necessary to understand how the digital footprint awareness of college students might have differed across different year levels.

Internet Access Time

Figure 3 compared the percentage distribution of private and public higher education institutions (HEIs) based on respondents' internet access time in relation to their understanding of digital footprint awareness and experience.

The highest percentage of respondents in both private and public HEIs had an internet access time of 5 to 6 hours, with 26.30% and 23.80%, respectively. The percentage distribution for the other categories of internet access time was relatively similar for both private and public HEIs. The data suggested that internet access time may have played a role in understanding digital footprint awareness and experience, although other factors may also have been at play. The figure indicated that the internet access time of respondents was not significantly different between private and public HEIs.

In relation to the comparison of internet access time between respondents from private and public HEIs, the latest data on internet users in the Philippines as of January 2022 indicated that a staggering 76.01 million individuals had utilized the internet. This represented an internet penetration rate of 68.0% of the total population, which was a significant increase from previous years. Furthermore, Kepios analysis revealed that there had been a remarkable growth of 2.1 million internet users, which translated to a 2.8% increase between 2021 and 2022. The data suggested that internet usage had continued to grow rapidly in the Philippines, with a significant portion of the population now connected to the online world (Kemp, 2022).

Gadgets Owned

According to Figure 4, the comparison between the percentage distribution of types of gadgets owned by private and public HEI respondents showed that the majority of them owned smartphones. The percentage of smartphone ownership was similar in both private and public institutions, with 92.80% and 92.60%, respectively. Personal computers/laptops were the second most commonly owned gadget, with 45.60% for private HEIs and 47.30% for public HEIs.

In contrast, the ownership percentage of smartwatches and tablets was low for both private and public HEIs. Only 1.60% and 2.90% of private HEI respondents owned smartwatches and tablets, respectively, while the percentage for public HEI respondents was 1.50% and 2.90%, respectively. The data indicated that smartphones and personal computers/laptops were the most popular gadgets among HEI respondents, while smartwatches and tablets had relatively low ownership percentages.

According to a survey conducted by the Social Weather Stations (SWS) as cited by the Philippine Daily Inquirer, six out of ten Filipino students utilized electronic devices for distance learning during the pandemic, with families spending approximately P8,000 per student for the devices. The survey also revealed that more students in rural areas purchased smartphones for distance learning at 86%, compared to 74% in urban areas. Conversely, purchasing laptops or desktops was more common in urban areas at 19%, compared to 5% in rural areas (Inquirer, 2021).

Frequently Accessed Sites

In Figure 5, the percentage distribution of private and public HEI respondents based on the frequently accessed sites was compared. The data showed that for professional networking sites, the percentage of private HEI

respondents was slightly lower than that of public HEI respondents at 8.42% and 8.46%, respectively. For video streaming sites, messaging applications, and emails, public HEI respondents had a higher percentage than private HEI respondents.

On the other hand, private HEI respondents had a higher percentage of usage for online learning sites, video conferencing applications, workspace collaboration sites, and mobile games than public HEI respondents. The percentage distribution of networked games was almost the same for both private and public HEI respondents.

The data suggested that while there were some differences in the frequently accessed sites between private and public HEI respondents, there were also some similarities. Messaging applications, emails, and networked games were popular among both private and public HEI respondents, while online learning sites, video conferencing applications, and workspace collaboration sites were more popular among private HEI respondents.

Online Activities

Table 2 displayed the findings of a study that aimed to compare the levels of awareness in private school and public school students regarding their online activities which could contribute to their digital footprints. The table presented various item statements and their corresponding mean scores, standard deviations, and verbal descriptions. Additionally, the table provided an overall mean score and a verbal interpretation of the overall computed scores.

The study revealed that there was no statistically significant difference between the level of awareness of private and public school students concerning their online activities. This conclusion was supported by the calculated p-value of 0.932, which exceeded the typically accepted threshold of 0.05 for statistical significance. The verbal interpretation of "Mindful" for both private and public school students also supported the notion that both groups exhibited a high level of awareness and care when engaging in online activities.

Despite these positive findings, it was important to acknowledge that this study only evaluated a limited sample of students and could not be assumed to represent the general population of private and public school students. Therefore, further research with larger and more diverse samples may have been necessary to provide a more comprehensive understanding of the mindfulness levels of students when participating in online activities.

Personal Information

The results shown in table 3 indicates that there is no significant difference in the digital footprint awareness of private and public HEI students in terms of their personal information. Both groups exhibit a "Mindful" level of awareness, with mean scores ranging from 3.26 to 3.43.

The implications of these findings suggest that the digital footprint awareness of college students is relatively high, regardless of whether they

attend a private or public institution. This highlights the importance of promoting digital citizenship and safe online practices in higher education. Educators can use these findings to develop appropriate strategies and interventions to enhance students' digital footprint awareness and encourage them to adopt responsible online behavior.

Online Transactions

The mean scores, as shown in Table 4, from both groups were relatively close, indicating that there was no significant difference in their level of awareness. Both groups were mindful of their digital footprint, knowing that their transactions could be recorded, traced, and contributed to their online trail. However, the public school students had a higher level of awareness compared to private school students in terms of their transactions being stored in the sites they visited.

The implications of these results suggested that both private and public school students had a general understanding of their digital footprint and the potential risks involved. However, there may have been a need to educate students further on the specific implications of their online transactions, such as how it could affect their privacy, security, and future opportunities. Moreover, the results also highlighted the importance of digital literacy education in schools to equip students with the necessary knowledge and skills to navigate the digital world safely and responsibly.

Online Platforms

The results shown in Table 5 indicated that there was no significant difference between the two groups in terms of their awareness of the potential risks associated with sharing personal information in digital environments. Both private and public HEI students exhibited a "mindful" level of awareness when it came to protecting their personal information online. Specifically, both groups were aware of the possibility of their personal information being accessed by other people in environments like internet cafes and shared computers. They also knew that their log trails in different environments and platforms were being recorded, and that passwords and personal details were stored in the different environments they accessed.

The results of this study had significant implications for both private and public HEI students. It highlighted the importance of educating students about digital footprints and the potential risks associated with sharing personal information online. Students needed to be aware that their personal information may be accessed by others, and that they needed to take necessary precautions to protect their information. The findings also suggested that there was a need for universities to implement policies and guidelines that addressed the potential risks associated with digital footprints.

Additionally, this study emphasized the need for ongoing education and awareness about digital footprints, not only in universities but also in other educational settings. Educators should have incorporated digital literacy skills into the curriculum, and students should have been provided with the tools and resources to learn how to protect their personal information online. The results

of this study suggested that both private and public HEI students had a similar level of digital footprint awareness, which indicated that education and awareness efforts may have been equally effective in both types of institutions.

Privacy and Security

The overall mean score for both private and public schools, as shown in Table 6, was classified as "mindful," which meant that the students were generally aware and conscious of the importance of privacy and security in digital environments. The results indicated that there was no significant difference between the digital footprint awareness of privacy and security among students in private and public HEIs.

The findings suggested that students in both private and public HEIs had similar levels of knowledge and understanding about digital privacy and security and were taking necessary precautions to protect their personal information in digital environments. However, the mean score for the item statement "I change my password in different accounts regularly" was below the threshold of "mindful" and classified as "aware" for both private and public schools. This implied that there was still room for improvement in terms of password security awareness among the students. Educating and encouraging students to create strong passwords and change them regularly could help prevent unauthorized access to their accounts and protect their personal information.

The results of this study provided valuable insights for educators and policymakers to develop and implement effective digital literacy programs in both private and public HEIs. The findings suggested that students in both types of institutions had similar levels of awareness of digital privacy and security. Hence, a holistic approach to digital literacy education that includes privacy and security aspects could benefit students in both private and public HEIs. Moreover, the study highlighted the need to improve password security awareness among students, and incorporating password management practices as part of the digital literacy curriculum could help students better protect their personal information.

Comparing Overall Digital Footprint Awareness

The results presented in Table 7 indicated that both groups had a high level of digital footprint awareness, with mean scores of 3.32 and 3.27, respectively. The p-value of 0.298 suggested that there was no significant difference in the overall digital footprint awareness between the two groups. The low standard deviations implied that the responses were closely clustered around the mean scores.

The high level of digital footprint awareness was a positive finding, indicating that students were increasingly aware of the potential risks associated with online activities and were taking necessary precautions. The prevalence of digital platforms in daily life highlighted the importance of this awareness. However, while the level of awareness was high, there remained a

risk of exposure to personal information in digital environments. Therefore, educational institutions had to continue to educate students on safe online practices and provide them with the necessary skills and tools to protect themselves.

The study's findings had significant implications for both private and public HEIs. The high level of digital footprint awareness among students highlighted the need for digital literacy and education. Educational institutions played a crucial role in equipping students with the necessary knowledge and skills to navigate the digital landscape safely and responsibly. The results of this study could be utilized to develop digital literacy programs tailored to the needs and concerns of students in private and public HEIs, ensuring that students were better prepared for the challenges of the digital age.

CONCLUSIONS AND RECOMMENDATIONS

In conclusion, the study presented valuable insights into the level of digital footprint awareness among private and public HEI students in the Philippines. According to the findings, both groups of students demonstrated a high level of digital footprint awareness, and there was no significant difference between them. This suggested that students were becoming more aware of the potential risks of their online activities and taking appropriate measures to protect themselves.

The study emphasized the importance of educating students on safe online practices and equipping them with the necessary skills and tools to safeguard their digital footprints. Educational institutions could play a crucial role in promoting digital literacy by developing programs that catered to the specific needs and concerns of students in private and public HEIs.

Overall, the study highlighted the significance of digital literacy in the digital age. As our reliance on digital platforms continued to increase, it was crucial to have the knowledge and skills to navigate them safely and responsibly. By raising awareness and educating students on safe online practices, we could ensure that they were better prepared for the challenges of the digital world.

Based on the conclusions drawn from the study, the following recommendations could be made:

1. Educational institutions should continue to prioritize digital literacy and education for their students, particularly in private and public higher education institutions. This could be achieved by providing training programs and resources that focused on safe online practices, data privacy, and digital citizenship.
2. Educational institutions should also provide their students with the necessary tools and skills to protect their personal information in digital environments. This includes access to secure online platforms, data encryption software, and password management tools.
3. Students should be encouraged to be more mindful of their online activities and to take necessary precautions to protect their personal information. This could be achieved by raising awareness of the risks

associated with digital footprints and providing guidance on safe online practices.

FURTHER STUDY

Further research is needed to gain a better understanding of the factors that influence digital footprint awareness among private and public HEI students. Future studies can explore the effectiveness of different educational approaches and identify best practices for promoting digital literacy and responsible digital citizenship.

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REFERENCES

Abaido, G. M. (2020). Cyberbullying on social media platforms among university students in the United Arab Emirates. *International Journal of Adolescence and Youth*, 25(1), 407–420. https://doi.org/10.1080/02673843.2019.1669059

Bayanov, D. I., Novitskaya, L. Y., Panina, S. A., Paznikova, Z. I., Martynenko, E. V., Ilkevich, K. B., Karpenko, V. L., & Allyalyev, R. M. (2019). Digital technology: Risks or benefits in students training? *Journal of Environmental Treatment Techniques*, 7(4), 659-663

Buchanan, R. (2018). Expert insights into education for positive digital footprint development. *Semantic Scholar.* https://www.semanticscholar.org/paper/Expert-insights-into-

education-for-positive-digital-Buchanan-Southgate/63cbbd4ff1cebb508efe6b2bc16e0b3908a19c0c

Buchanan, R., Southgate, E., Smith, S. P., Murray, T., & Noble, B. C. (2017). Post no photos, leave no trace: Children's digital footprint management strategies. *E-Learning and Digital Media*, 14(5), 275–290. https://doi.org/10.1177/2042753017751711

Digital Citizenship. (n.d.). Leaving a digital footprint. https://www.digitalcitizenship.nsw.edu.au/articles/leaving-a-digital-footprint

Elçi, A., & Seçkin, Z. (2019). Cyberbullying awareness for mitigating consequences in higher education. *Journal of Interpersonal Violence*, 34(5), 946–960. https://doi.org/10.1177/0886260516646095

eSafety Commissioner. (n.d.). Your digital reputation. *eSafety Commissioner*. https://www.esafety.gov.au/key-issues/staying-safe/digital-reputation#:~:text=Your%20digital%20reputation%20is%20the,contribute%20to%20your%20digital%20reputation.

Indeed Editorial Team. (2022). What Is a Digital Footprint? (Plus the Benefits of Having One). *Indeed Career Guide*. https://www.indeed.com/career-advice/career-development/digital-footprint

Inquirer, P. D. (2021). 58% of Filipino students used devices for distance learning – SWS | Inquirer News. *INQUIRER.net*. https://newsinfo.inquirer.net/1402235/sws-58-of-pinoy-students-used-devices-for-distance-learning

Johnson, J. (2021). Your Digital Footprint and Privacy: What You Need to Know - Troomi Wireless. *Troomi Wireless*. https://troomi.com/dangers-of-digital-footprint/

Kemp, S. (2022). Digital 2022: The Philippines — DataReportal – Global Digital Insights. *DataReportal – Global Digital Insights*. https://datareportal.com/reports/digital-2022-philippines#:~:text=Internet%20use%20in%20the%20Philippines%20in%202022&text=The%20Philippines's%20internet%20penetration%20rate,at%20the%20start%20of%202022.

Kolhar, M., Kazi, R. N., & Alameen, A. (2021). Effect of social media use on learning, social interactions, and sleep duration among university students. *Saudi Journal of Biological Sciences*, 28(4), 2216–2222. https://doi.org/10.1016/j.sjbs.2021.01.010

Nidirect. (2023). Social media, online gaming and keeping children safe online. https://www.nidirect.gov.uk/articles/social-media-online-gaming-and-keeping-children-safe-online

Nikolopoulou, K. (2023). What Is Generalizability? | Definition & Examples. *Scribbr*. https://www.scribbr.com/research-bias/generalizability/

Nordli, B. (2022). What is a digital footprint? Built In. https://builtin.com/cybersecurity/digital-footprint

OECD. (2016). Trends shaping education 2016. *OECD Publishing*. http://dx.doi.org/10.1787/trends_edu-2016-en

Olipas, C. N. P. (2023). The Digital Footprint Awareness of the Undergraduate Students in a Private Higher Education Institution in Nueva Ecija, Philippines: A Basis for a Plan of Action. *International Advanced Research Journal in Science, Engineering and Technology, 10(2).* https://doi.org/10.17148/iarjset.2023.10203

Republic Act No. 10931 | GOVPH. (2017). Official Gazette of the Republic of the Philippines. https://www.officialgazette.gov.ph/2017/08/03/republic-act-no-10931/

Reyes, N. (2022). What is a digital footprint? Definition - meaning - examples. *Reputation X*. https://blog.reputationx.com/digital-footprint

Sürmelioğlu, Y., & Seferoğlu, S. S. (2019). An examination of digital footprint awareness and digital experiences of higher education students. *World Journal on Educational Technology*, 11(1), 48–64. https://doi.org/10.18844/wjet.v11i1.4009

UNICEF. (n.d.). Cyberbullying: What is it and how to stop it. https://www.unicef.org/end-violence/how-to-stop-cyberbullying

United Nations. (2011). Report of the special rapporteur on the promotion and protection of the right to freedom of opinion and expression, Frank La Rue. *UN Human Rights Council*. http://www2.ohchr.org/english/bodies/hrcouncil/docs/17session/A.HRC.17.27_en.pdf