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Determination of Digital Citizenship awareness degree of Jordanian universities Students

By

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Abstract

This study aimed to identify the Digital Citizenship awareness degree of Jordanian University Students, the researcher adopt a questionnaire and made sure of its validity and reliability. The questionnaire include (33) items divided into three factors. The study which reached (643) male and female students from Jordanian universities, The results of the study showed that Digital Citizenship awareness degree of Jordanian universities Students was high, the results also showed that there are statistically significant differences attributable to the gender variable in favor of females in addition there are differences statistically significant due to the university variable in favor of private universities than public universities

Keywords: The Degree of Awareness, Digital Citizenship, Jordanian University Students.

Introduction

The information and communication technology (ICT) has become an indispensable part as it is an effective tool in communicating with others and an essential feature of the digital era (El-Dahshan, 2018).

The digital revolution, in its role was able to attract large segments of society from all ages, thus becoming a characteristic of the individual's daily life, where broad opportunities have opened up, transcending the boundaries of time and space, navigating him in the world of science, knowledge and entertainment (Al-Naji, 2019).

Despite the many advantages of this revolution, it has negative effects on the individual, as digital devices have become easy to access and easy to use, the possibility of communicating with unknown individuals, the ease of browsing unknown and dangerous sites, and the spread of negative practices that include misuse. As a result of the irrational use of information and communication technology and various intrusions such as online fraud, violation of code of conduct, illegal use of materials and infringement of property rights (Al-Naji, 2019).

Censorship has become difficult for society and the family, as the individual has become a citizen who interacts within virtual communities without realizing the dimensions of digital citizenship on him and the standards that he must abide by (Al-Hussary, 2016). Which requires educating students on how to deal with the Internet to ensure its optimal use, safety and electronic security directives, to ward off its dangers and create self-censorship for themselves, and thus increased interest in the digital citizenship (Al-Masry, Shaath, & Akram , 2017).

Digital citizenship grants safe use in an ethical legal environment, and it is a way of life that every human being needs (Shaltout, 2016). Believing in its importance in the educational system. Education seeks to be one of the most important systems on which the

foundation of any country in the world is based, such as developed countries: Britain, the United States and Canada, where they educate their communities on the art of how to behave respectfully while using the Internet and this is what has been identified by the American Association of School Librarians (AASL)(Maughan, 2017) Digital citizenship is a method of preparing students with advanced standards while using technology consciously and responsibly (Ribble ,2012).

The digital citizenship is defined as preparing students and protecting them from dangers of dealing with technology (Shaltout, 2016). The digital citizenship is not a technology, it is a culture that must be instilled in the soul of all digital users (Mahdi, 2018), as it is a vision that includes using technology within the individual's security, safety, legal and ethical behaviors that must follow and apply appropriately (Hassan, 2021).

It should be noted that the Hashemite Kingdom of Jordan has endeavored to pay attention for citizen awareness. Where His Majesty King Abdullah II sought to present an important intellectual document to his people for the relationship of societies with technology. Promoting the digital citizenship was one of the most important goals and to deepen full responsibility for the illustrated, written and spoken actions while preserving the identity in light of this globalization (ALKaraki, 2018) hence the idea of this study came to know the awareness degree of Jordanian universities students about the digital citizenship concept.

1.2 Problem statement

(El-Dahshan, 2018) conducted that the widespread use of digital tools led to the creation of a digital citizen within a digital society, so it became necessary to establish controls and standards to ensure the positive impact of this progress in order to protect against the dangers of this. Rapid development in the field of technology and overcoming the disadvantages of the Internet in particular, and technology in general and spreading the culture of digital citizenship among university youth, as it is a modern necessity in the face of a general framework, to educate the student, especially the digital generation, about the regulations for dealing with this technology.

(Al-Faed, 2014) Emphasizes the need to know the concepts of digital citizenship. And the study of the relationship between its factors, as these factors are linked in promoting ethical behavior responsible for preparing a good digital citizen and creating an individual protective shield against the dangers of digital technologies. The individual has become an open digital society, so it is necessary to highlight digital citizenship, which has become an ideal model for citizenship in the twenty-first century.

Several studies recommended (Akcil, & Bastas, 2020; Alselehat, Alfalloh, & Alsarhan, 2018; Al-naji, 2019; Hassan, 2021) to educate students about advanced methods of protection from the dangers of participating in the Internet community, and to conduct more studies to find out the degree of students' awareness of the concept of digital citizenship.

Literature Review

Al-Rashed study (2020) aimed to reveal the extent to which students in Jordanian public universities possess digital citizenship skills, and are there any statistically significant differences attributed to the variable (gender, university, college, and academic year), and the study relied on the descriptive approach, and a questionnaire consisting of (45) paragraphs were applied to a sample of (5,200) male and female students who were chosen randomly, and a questionnaire was applied to them that was analyzed by appropriate statistical methods.

Students' estimates of the concept of digital citizenship are attributed to the variables of gender, college, and academic year, while it indicated that there are differences due to the university variable.

The study of Al-Naji (2019) aimed to reveal the awareness of students of the Department of Libraries, Documentation and Information - Assiut University about digital citizenship and to achieve the objectives of the study; The researcher followed the descriptive analytical approach, and the sample size of the study was (439) male and female students. A questionnaire was designed to collect data. The study resulted in a very good level of students' awareness of the concept of digital citizenship. It was also found that there is a statistically significant difference due to the gender variable, in favor of females.

On the other hand, (Mahdi, 2018) conducted a study aimed to identify awareness of digital citizenship among users of social networks from students of Al-Aqsa University and the relationship to some variables (the used network, accepts dealing with the Internet, skill and knowledge of the Internet and gender) , he followed the descriptive approach and used the questionnaire tool on a sample of university students who numbered (700) male and female students where the results showed that there are statistically significant differences in the level of awareness of citizenship indicators attributed to gender, the social network , the level of knowledge and skill in the Internet and the level of acceptance of dealing with the Internet.

(Alselehat, Alfalloh, & Alsarhan, 2018) conducted a study aimed to identify the degree of awareness to the digital citizenship concept for undergraduate students in the Faculty of Educational Sciences at the University of Jordan, the study relied on the descriptive approach, and the sample consisted of (230) students who were randomly selected, a questionnaire was applied and analyzed by appropriate statistical methods and the study reached that the degree of students 'awareness to the digital citizenship concept is (medium), absence of statistically significant differences between the averages of students' estimates to the digital citizenship concept due to the gender variable, place of residence, degree of using Internet and age.

(Choi, Glassman, & Cristol, 2017) Conducted a study to develop a reliable scale for measuring the digital citizenship, followed the descriptive approach and distributed a questionnaire to a sample of (508) undergraduate and graduate students at Midwestron University in America. The results highlighted the existence of good reliability of the digital citizenship scale and there is a correlation with the efficiency of the Internet.

The study of (Tawalbeh, 2017) aimed to identify the extent of including the digital citizenship concept in the books of national and civil education in the Directorate of Irbid, the researcher followed the descriptive approach, the study included interviewing 43 teachers and the results of the study showed that the teachers of national and civil education are not having a sufficient knowledge of digital citizenship and its factors.

(AL-Smadi, 2017) sought to identify the perceptions of Qassim University students towards digital citizenship by using the descriptive analytical approach on applying a questionnaire to a random sample of (374) male and female students, the results of the study showed that there are statistically significant differences attributed to college and the number of daily use hours variables . As there are no statistically significant differences related to gender variable.

The study of (Maharos, 2018) aimed to know the level of kindergarten teachers in the Kingdom of Saudi Arabia with the dimensions of digital citizenship, through a sample

consisting of (50) kindergarten teachers, the study relied on the descriptive approach and applied a statistically analyzed questionnaire. The study results indicate that there are deficiencies in the dimensions of digital citizenship (respect, education and protection) for kindergarten teachers in the Kingdom of Saudi Arabia.

2.3 Research Objective and question

The aim of the current study was to determination of digital citizenship awareness degree of Jordanian universities students. This objective was determined by analyzing the collection data to answer the research questions:

1. What is the level of awareness among Jordanian universities students of the digital citizenship concept?
2. Are there statistically significant differences at the significance level ($\alpha = 0.05$) between the means of the Jordanian university students' estimates of the concept of digital citizenship due to the variables (gender, university)?

Research Methodology

3.1 Population and sample

The study population of this study consisted of all students enrolled in Jordanian universities. To collect data Convenience sampling was used in this study (Creswell, 2013). Electronic questionnaires were distributed, and the number of respondents reached 473 university students (193 male and 2 80female students) registered in the academic year 2020-2021. Participants were chosen from the first to fourth year of university.

3.2 Instrument

A questionnaire was designed to collect the required data and information from the study sample individuals based on the literature of digital citizenship and the previous studies (Al-Zahrani, 2015; Al-Muslimani & Al-Suki, 2014; AL-Qahtani, 2018; AL-Smadi, 2017; Al-naji, 2019; Fernández-Prados, Lozano-Díaz, & Ainz-Galende, 2021). Through reviewing some tools and measures used in studies related to the current study. The study included three factors that included (33) listed phrases to be presented to the specialists, whose number was (10) to measure the validity and reliability of the tool, the questionnaire was divided into two main sections as follows:

The first section specialized to collect data and personal information for the study sample which includes (gender, and university).The second section is aimed to collect answers and the sample population estimates for a set of paragraphs devoted to measuring (33) phrases distributed on three factors of digital citizenship as follows:

1. Education factor: consisting of (11) items, which includes three dimensions (digital culture, digital communication, and digital commerce).
2. Respect factor: consisting of (9) items, which includes three dimensions (digital access, rules of digital behavior, and digital laws).
3. Protection factor: consisting of (13) items, which includes three dimensions (digital rights and responsibilities_ digital health and well-being_ digital security) .

The questionnaire was distributed to the Jordanian universities students electronically and by using the Google site for questionnaires, then through the social networking site (Facebook). The questionnaire sent through the mentioned universities accounts and the

students was filling the questionnaire, the number of completed and prepared questionnaires for analysis is (473).

3.3 Validity of the study tool

The study tool content was confirmed and verified by presenting an initial form to arbitrators group of expertise and specialization faculty members in the Jordanian universities.

3.4 Reliability of the study tool

The reliability of the questionnaire was calculated by using the SPSS statistical program, the following equations were used: the Cronbach alpha equation for internal consistency to verify the tool reliability

Table (1) shows that the reliability coefficient using the internal consistency method (Alpha Cronbach) for the total degree (0.80). All values of the reliability coefficients ranged between (0.85_0.88) which is high level and this is enhances the accuracy, appropriateness and comfort for applying and achieving the study purpose.

Table 1: *Cronbach's Alpha (n=473)*

Factors	Cronbach Alpha
Education	0.88
Respect	0.85
Protection	0.86
Total	.080

Results

4.1Participant Profile

Table (2) showed that most of study sample are females (59.2%) compared to the percentage of males which is (40.8%) as it indicates that the largest proportion of the study sample are a public universities students of (52.1%) compared to the Private university students which are (47.9%) .

Table 2: *Participants Demographic Profile*

Participants Profile	Category	frequently	Percentage
Gender	Male	193	40.8
	Female	280	59.2
Total		473	100.0
University	Private	227	47.9
	Public	246	52.1
Total		473	100.0

4.1. The first question: What is the degree of awareness among Jordanian university students of the digital citizenship?

To answer the first question, the mean values and standard deviations were extracted for all factors of the scale and the criterion was adopted to evaluate each paragraph.

The values of the mean values and the standard deviations of the first factor (education)- which consisted of (11) items - were calculated. The Table (3) shows the responses of study sample in descending order.

Table 3: *responses of study sample*

Factor	item	Mean	SD	Awareness level
Education	Take caution when using Visa and prepaid cards	4.33	.80	Very high
	Prefer dealing with well-known websites	4.32	.84	Very high
	My family enhances my knowledge of the good use of digital technologies	4.26	.70	Very high
	Know my rights and duties while browsing the Internet	4.23	.79	Very high
	Use social media responsibly and consciously	4.19	.80	High
	Contact others via social media	4.17	.87	High
	Self-learning through using internet	4.14	.86	High
	Use digital media enhances my communication with others	4.09	.86	High
	Attendance seminars and educational programs enhances taking advantages of digital technologies	4.02	.85	High
	Check the safety of the commercial site through lock icon and https.	3.88	1.03	High
	E-commerce offers me better options to buy at reasonable prices	3.70	1.10	High
	Total	**4.12**	**.44**	**Very high**
Respect	Interact with the student portal on the university's website	4.21	.79	Very high
	Realize the risks of using piracy and hacking programs	4.20	.85	Very high
	Respect the other party's point of view via digital media and its difference with my opinion	4.16	.88	High
	Master searching across digital search engines to get honest information	4.16	.79	High
	Adhere to the rules of high-class and civilized behavior in dealing with digital applications	4.13	.87	High
	Use search engines that support the desired language to access the information	4.10	.75	High
	Choose an appropriate time to communicate with others via digital media	4.01	.92	High
	Consider sending an email an annoyance to others with unethical action	1.97	1.07	High
	Total	**3.91**	**.42**	**High**
protection	Avoid looking for unethical websites	4.34	.85	Very high
	Protect my data by creating a passcode for me	4.36	.81	Very high
	Check rumors in the digital community, in order to maintain community security	4.17	.86	High
	Choose the appropriate level of screen brightness and brightness adjustment for the digital devices I use	4.17	.84	High
	Ensure to update the operating system periodically and regularly to raise the level of digital security	4.14	.90	High
	Block the anonymous messages for me	4.12	.98	High
	Provide my personal computer with antivirus software	4.12	.92	High
	Check the security of the browser I use	4.09	.86	High
	Verify the accuracy of information by referring to its source	4.06	.89	High
	Spend a lot of time using the internet	3.83	1.03	High
	Take care to take enough breaks to avoid health risks	3.83	.97	High

Do not overuse digital devices because they lead to digital addiction	3.65	1.18	High
Avoid looking for unethical websites	4.34	.85	Very high
Total	**4.05**	**.46**	**High**
Total average	**4.03**	**.37**	**High**

Table (3) shows the level of awareness of the education factor of the study sample members on the concept of digital citizenship in the questionnaire as a whole are high with mean value (4.12) and standard deviation (.44). While the responses of the sample members about the factors of the questionnaire and its (9) items are very high with mean ranged between (3.70-4.33) and standard deviations between (.70-1.10). The highest average is item "Take caution when using Visa and prepaid cards", with an arithmetic average (4.33) and standard deviation (.80) with a very high degree. In the second rank is item states "Prefer dealing with well-known websites" with an arithmetic average (4.32) and standard deviation (.84) with a very high degree. In the third rank is the item which states "My family enhances my knowledge of the good use of digital technologies" with an arithmetic average (4.26) and standard deviation (.70) with a very high degree. Item comes at the fourth rank which states "Know my rights and duties while browsing the Internet" with an arithmetic average (4.23) and standard deviation (.79) with a very high degree. In the fifth rank, the item which states "Use social media responsibly and consciously" with a mean value (4.19) and standard deviation (.80). And in the sixth rank, item which states "Contact others via social media" with a mean value (4.17) and standard deviation (.87). Item in the seventh rank which states "Self-learning through using internet" with a high degree, a mean (4.14) and standard deviation (.86). At the eighth rank, item which states "Use digital media enhances my communication with others" with a mean value (4.09) and standard deviation (.86). Item is in the ninth rank which states "Attendance seminars and educational programs enhances taking advantages of digital technologies" with a mean value (4.02) and standard deviation (.85). The item is in the tenth rank which states "Check the safety of the commercial site through lock icon and https." with a mean value (3.88) and standard deviation (1.03). At last, item in the eleventh rank which states "E-commerce offers me better options to buy at reasonable prices" with a mean value (3.70) and standard deviation (1.10).

The mean values of the mean and the standard deviations for the respect factor items were calculated, that consisted of (9) items. Where table above shows the answers for the respondents in descending order.

Table 3 also shows that the level of awareness of the study sample members of the concept of digital citizenship in the questionnaire of the factor of respect as a whole came with a high degree with a mean value of (3.91) and the standard deviation (.42).

While the level of awareness of the sample members on the nine factors of the questionnaire is with a high degree of mean value (1.97-4.22) and standard deviations between (.79-1.07). Item which states "Respect the property rights of others" is the highest mean value of (4.22), standard deviation (.79) and with a very high degree. In the second rank is item which states "Interact with the student portal on the university's website" with a mean value (4.21), standard deviation (.79) and with a very high degree. In the third rank is the item which states "Realize the risks of using piracy and hacking programs" with a mean value (4.20) and standard deviation (.85) with a very high degree. While the 5 items are with a high degree. In the fourth rank, the item which states "Respect the other party's point of view via digital media and its difference with my opinion" with an mean value (4.16) and standard deviation (.88) with a high degree. In the fifth rank, the item which states "Master searching across digital search engines to get honest information" with a mean value (4.16) and standard deviation (.79). And in the

sixth rank, item which states "Adhere to the rules of high-class and civilized behavior in dealing with digital applications" with a mean value (4.13) and standard deviation (.87). Item is in the seventh rank which states "Use search engines that support the desired language to access the information" with a mean value (4.10) and standard deviation (.75). At the eighth rank, item which states "Choose an appropriate time to communicate with others via digital media" with a mean value (4.01) and standard deviation (.92). Except item which states "Consider sending an email an annoyance to others with unethical action" is negative. The staging was reversed for measurement. As table (2) shows, the mean value of this item is (1.97) and standard deviation (1.07) with a high degree.

The mean and the standard deviations for the protection factor items were calculated, that consisted of 13 items. Where table (3) also shows the answers for the respondents in descending order. The total mean for the protection factor is (4.05), with a standard deviation of (.46) and with a "high" awareness level. While the mean value for the 13 factors of the questionnaire (3.65-4.34) and the standard deviation between (.85-1.18). Whereas, item stipulates "Avoid looking for unethical websites". It is ranked first with a mean value of (4.34) and a standard deviation (.85), with a "very high" degree. Item states "Protect my data by creating a passcode for me", and is in second place with a mean value of (4.36) and a standard deviation (.81) with a very high degree. The ten Items are with a high degree. Item states "Check rumors in the digital community, in order to maintain community security", is in the third rank with a mean value (4.17) and standard deviation (.86). Item states "Choose the appropriate level of screen brightness and brightness adjustment for the digital devices I use" is in the fourth rank with a mean value (4.17) and standard deviation (.84). Item states "Ensure to update the operating system periodically and regularly to raise the level of digital security", is in the fifth rank with a mean value (4.14) and standard deviation (.90). And in the sixth rank, item states "Block the anonymous messages for me" a mean value (4.12) and standard deviation (.98). The item which states "Provide my personal computer with antivirus software" is in the seventh rank with a mean value (4.12) and standard deviation (.93). Item which states "Check the security of the browser I use", is in the eighth rank with a mean value (4.11) and standard deviation (.89). Item which states "Verify the accuracy of information by referring to its source" is in the ninth rank with a mean value (4.06) and standard deviation (.89). Item Which states "Spend a lot of time using the internet" is in the tenth rank with a mean value (3.83) and standard deviation (1.03). Item stipulates "Take care to take enough breaks to avoid health risks". It is in the eleventh rank with a mean value (3.83) and standard deviation (.98). Then the item which states "Overuse digital devices" is in the twelfth rank with a mean value (3.68) and standard deviation (1.09). At last the item which states "Do not overuse digital devices because they lead to digital addiction" comes in the 13th rank with a mean value (3.65) and standard deviation (1.18).

Table (3) shows the mean value for all factors of the total study that revolves around a high degree (4.03) with a standard deviation which is (.37). Where in the first rank is the education factor which mean value (4.12) with a standard deviation (.44). While in the second rank is the protection factor which mean value (4.05) with a standard deviation (.46). At last, the third rank is the respect factor with mean value (3.91) and a standard deviation (.42).

4.2 The second question: "Are there statistically significant differences at the significance level (α = 0.05) between the means of the Jordanian university students' estimates of the concept of digital citizenship due to the variables (gender, university)?"

4.2.1 Gender variable

Table (4) shows that the values of the mean and standard deviations were calculated according to the gender variable, to find out the students' estimates of the digital citizenship.

Table (4) *gender variable*

Factors	Gender	Sample	Mean	SD	Standard error
Education	Males	193	4.02	.49	.04
	Females	280	4.20	.39	.03
Respect	Males	193	3.80	.44	.03
	Females	280	3.99	.38	.03
Protection	Males	193	3.94	.54	.04
	Females	280	4.12	.36	.02
Total tool	Males	193	3.93	.42	.03
	Females	280	4.11	.31	.02

Table (5) shows that (T) test has been used for two independent samples. It is shown there is a statistical difference at the level of significance (α =0.05) among the mean for the level of awareness attributed to (gender) variable, in favor of females, the mean of their response was higher based on the calculated value (T) of the overall tool. It is (4.9).

Table 5: *Independent Sample t-test*

Factors	Independent Sample t-test	
	T value	Significance level
Education	-4.066-	.000
Respect	-4.539-	.000
Protection	-3.818-	.000
Total tool	-4.882-	.000

4.2.2. University variable

Table (6) aims to identify the estimates of Jordanian university students for the digital citizenship according to the university variable, by calculating the values of the mean and standard deviations to identify the apparent differences between the mean and standard deviations.

Table 6: *university variable*

Factors	University	Sample	Mean	SD	Standard error
Education	public	147	4.10	.46	.04
	Private	236	4.13	.44	.03
Respect	public	147	3.90	.41	.03
	Private	236	3.92	.42	.03
Protection	public	147	3.96	.51	.04
	Private	236	4.10	.41	.03
Total tool	public	147	3.99	.40	.03
	Private	236	4.06	.35	.02

A test was used for two independent samples, known as Independent Sample t-test, where table 7 shows the follow result: There is a difference in the field of protection only statistically significant at the level of significance (α =0.05) attributed to the university variable in favor of private universities, based on the calculated value of (T). It is (3.06) with degree of significance (.002).

Table (7) *Independent Sample t-test*

Factors	Independent Sample t-test	
	T value	Significance level
Education	-.665-	.507
Respect	-.579-	.563
Protection	-3.059-	.002
Total tool	-1.909-	.057

Discussion

5.1 The results of the first question which is: "What is the level of awareness among Jordanian university students of the concept of digital citizenship?"

The results showed that they have a relatively high awareness of the concept of digital citizenship. The mean of the (Overall tool) the total instrument is (4.03). The education factor is the highest mean value (4.12) and with a high degree of awareness. It was followed by the protection factor with a mean value (4.5) and a high degree, and finally the respect factor with a mean value of (3.91) and a high degree of awareness. The results of the study, which indicates a degree of awareness among students, are attributed to the term digital citizenship, which is one of the modern concepts in this era. As the main goal in the first place is the social communication then the electronic commerce.

Take in consideration the necessity to ward off its risks, such as: fraud via online payment sites for buying and selling sites. Awareness of the individual's rights and duties must also be created while browsing through the Internet, as the result of the awareness degree is attributed to the efforts of both the family and the role by universities, the competent agencies and the media regarding awareness of the student in particular and the individual specifically to cybercrime. It should increase its efforts in the respect field, which came in third place in the awareness of students. The results of the study also agrees with (Akcil, & Bastas, 2020; AL-Qahtani, 2018). It differs with (Alselehat, Alfalloh, & Alsarhan, 2018; Al-Masry, Shaath, & Akram , 2017; Al-Rashed, 2020; Maharos, 2018).

The researcher presents the interpretation of the paragraphs according to each of the three factors of study:

1. Education factor

According to the results of the study, the education factor items obtained a very high degree of awareness. The result may be attributed to the tendency of the younger generation, including the understanding of Jordanian university students towards the use and employment of the Internet and technology in their learning. As technology has become an integral part of student daily life. It also emphasizes the student's ability to learn faster than traditional methods, regardless of individual differences. These results are also attributed to the fact that there is an increase in the keenness of students in their digital trade dealings, while avoiding unknown websites. It also shows that Jordanian families are conservative. They are interested in guiding the children, controlling their behavior, also encouraging engagement with the community and developing their digital culture. The educational factor consists an awareness of a student and his awareness while browsing the internet. The result is attributed to the novelty of the concept of electronic commerce. The student needs to increase his awareness infinitely.

2. Respect factor

According to the previous results, the Respect factor items obtained a high degree of awareness with mean ranging. University students are aware of the risks of piracy and hacking programs. This can be attributed to the religious and moral fear in respecting the privacy of others, ensuring that there is no privacy violation, and increasing concern for digital respect and adherence to the rules of high-class behavior in digital transactions. They also have the ability to make the optimal use of the student portal as a communication tool between the student and the university.

Protection factor

According to the results of the study, the Protection factor items obtained a very high degree of awareness. As these results are attributed to the awareness and increased awareness of students about the issue of protection digitally for themselves or others, and to the efforts of the educational role of educational institutions in the field of protection. Since male is our most valuable asset, health and safety of male must be preserved.

5.2 Discuss the results of the second question which is: "Are there statistically significant differences at the level of significance (α =0.05) between the mean of Jordanian university students' estimates of the concept of digital citizenship attributed to variables (Gender, and university)?"

An independent sample t- test was used to find out whether the following variables (gender, and university) had an effect on students' awareness of the concept of digital citizenship. Where the results showed that there are statistically significant differences attributed to the gender for the benefit of female students than males. And the result can be explained by the fact that female students by their nature live social conditions that adhere to the limits of customs and traditions and are keen on increasing involvement in society, so they obtain a greater degree of awareness. The results of the study also agree with (AL-Qahtani, 2018; Fernández-Prados, Lozano-Díaz, & Ainz-Galende, 2021).They differ (Al-Rashed, 2020; Alselehat, Alfalloh, & Alsarhan, 2018).

While the results show that the university variable has statistically significant differences in the protection factor only for the benefit of private universities. As the result can be explained by the interest of private universities and urge students to have a culture related to the healthy and proper use of digital technology and the prevention of its dangers.

Recommendations

1. Developing a national plan that includes teaching digital citizenship in Jordanian universities.
2. educating students to adhere to the principles of respect that protect from the risks of falling into the cybercrime. As a result of non-compliance with standards of digital behavior, digital laws and access.
3. Providing opportunities to include the digital citizenship course in universities and within the plans and study paths to facilitate their electronic dealings.
4. Launching a digital citizenship program as a prerequisite and supervised by The Ministry of Higher Education. And whoever passes it gets a certificate of admission to universities.

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