

Saudi Women's Contribution to Ha'il's Family-Centered Digital Citizenship Values

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Abstract— The primary goal of the present study is to identify the contribution Saudi women make to the Ha'il region's family values of digital citizenship. The researcher employed the descriptive analytical method and the questionnaire was utilized to collect the study data, which was applied electronically to a sample of 210 individuals. The study's findings indicated that Saudi women could help their families adopt digital citizenship ideals by sharing their knowledge and engaging in particular activities related to these principles. The study also suggested that Ha'il University should take action by creating training programs, establishing a family guidance office, and developing a specialized course on this specific topic. Additionally, it recommended that the university focus its scientific studies and research on further investigations into digital citizenship and its consequences.

Keywords— role, Saudi women, values, digital citizenship, family, Ha'il region

I. INTRODUCTION

THE dominance of social media, the availability of the Internet, and communication among individuals around the clock are manifestations of the era of globalization, knowledge openness, and technological development. Along with these are the growth of virtual meetings and electronic means of fostering relationships between individuals and groups as well as the introduction of e-learning, which is a major trend for kids of all ages.

Due to all of these factors, young people are more likely to pick up new behaviors through virtual media, which in turn affects their moral system because it allows them to blend in with things outside of their families' control. Mothers are viewed as the primary educators and learning environment, as well as the closest supervisory authority to their offspring. Given the amazing advancements outlined above, it can be argued that motherhood has undergone a substantial

transformation, particularly in terms of the value system, wherein she now needs to work towards fostering digital values in addition to moral and nationalistic ones. This is the core theme of the current research.

II. RESEARCH PROBLEM AND QUESTIONS

Innovations, especially technological innovations, are among the key factors in human development, and these developments carry many factors of positive and negative impacts on humanity as a whole, especially if they have the characteristics of invasion and control. It is already noticeable that, during the past ten years, digital technology has severely invaded the world, impacting all facilities and resulting in the emergence of a global trend known as digital transformation.

It is noted that the number of Internet users in general has reached more than 4.1 billion people, equivalent to 60% of the total world population. The Kingdom of Saudi Arabia ranks first among Arab countries in the average Internet daily use of 7 hours and 46 minutes (International Telecommunication Union).

Hence, scientific research and studies have tended towards analyzing this phenomenon and studying its repercussions on families and individuals. According to [1], the world has recently witnessed a tremendous development in information and communication technology, and the spread of social networks. The dissemination of social networks among students in different educational stages has increased the associated risks and problems that they may encounter, including cyberbullying, rumors spreading, identity theft, Internet addiction, and impersonation. In this context, concurring with [2], the unwise use of technology has become a key problem facing our children while interacting with life in the digital world. This problem has become a topic of debate and controversy on the official pages of the news in various newspaper headlines, e.g., "Children Misuse of Computers and Mobile Devices," "Technology Challenges, Teachers in Schools, and Parents at Home," "Digital Drugs," "A New Addiction Threatens Young People," and "Digital Addiction Is a New Electronic War That Targets the Youth." In the study

[3], the author affirmed that the issue stemmed from being exposed to these problems which might result in loss of self-confidence, physical injuries, and isolation among students. This could also lead to depression, and sometimes it might lead to suicide. Based on [4], there should be a sense of cooperation between educational institutions to confront many risks of digital transformation (physical, social, moral, psychological, etc.). Similarly, multiple studies have demonstrated that the widespread misuse of the Internet, coupled with the growing amount of time individuals spend in the digital realm, has given rise to a novel form of citizenship known as digital citizenship. In essence, this concept entails that individuals who spend extended periods online acquire new rights, obligations, and responsibilities, while also exposing themselves to the potential dangers associated with improper digital conduct. Consequently, they may be subject to legal penalties outlined by Internet usage regulations.

Given that children and adolescents are under the educational and supervisory care of their parents, who themselves are digital citizens engrossed in the demands of daily life, it becomes crucial to prioritize scientific research that investigates the role of mothers in enhancing the ideals of digital citizenship within their families. Therefore, this approach aims to mitigate the aforementioned risks and ensure that digital technology is beneficial for our children while safeguarding them from potential hazards, particularly within the specific cultural, social, and historical context of Saudi society. Furthermore, the evolving trends necessitate the cultivation of a generation capable of assuming responsibility and steering clear of negative behaviors that can arise from digital interactions as digital citizens. Achieving this objective hinges on the active involvement of women in instilling the principles of digital citizenship. **Hence, the issue with the present study is best illustrated by highlighting the contribution Saudi women make to Ha'il's family values of digital citizenship. To accomplish this, we have the subsequent questions:**

- 1) What is the average daily use of the Internet by Saudi women in Ha'il?
- 2) What is the level of knowledge of Saudi women about the three dimensions of digital citizenship (positive digital etiquette requirements, knowledge of digital security, and digital rights and duties)?
- 3) What is the level of family members' practice of the three dimensions of digital citizenship (children's practice of positive digital etiquette requirements, family members' recognition of the digital security of digital citizenship, and family members' knowledge of digital rights and duties)?
- 4) Does the degree of expertise and application of digital citizenship values among Saudi women affect the application of these values by family members?

III. LITERATURE

A study [5], entitled "The Role of Social Studies Teachers

in Promoting the Values of Digital Citizenship from Their Point of View" was conducted to reveal the importance of social studies instructors, in Farwaniya Governorate, Kuwait, in promoting the principles of digital citizenship among students. The study population consisted of social studies in high schools totaling 582. The sample was chosen by 50%, and the descriptive analytical technique was employed. In line with study findings, educators of social studies had a moderate role in advancing civic values. It also recommended giving training courses for teachers around this topic.

Research entitled "The Role of Saudi Secondary Schools in Promoting Digital Citizenship for Its Students" sought to shed light on the realities of government secondary schools' efforts to support students' digital citizenship, as well as the barriers that prevent them from doing so [6]. It also attempted to identify workable solutions for these issues. One of the study's findings pinpointed that the contribution of government secondary schools in Shaqra governorate to digital citizenship was deemed moderate. Moreover, it was observed that school administrators generally acknowledged the existence of certain impediments that hindered the implementation of initiatives aimed at elevating digital citizenship among their students.

An investigation examined the school's augmentation to cultivate digital citizenship among its students, [7]. It aspired to investigate the specific contributions of key components within the educational process, such as teachers and educational leaders, in stimulating digital citizenship and bolstering its values among future generations, taking into account the divergent challenges posed by the modern era. Moreover, the study found a set of results, as follows: Using technology and implementing teaching strategies centered on critical and creative thinking, educators can play a part in upholding the values of digital citizenship and helping students to develop them. The educational leader has a role to play in attaining digital citizenship among students by developing their awareness of taking responsibility for electronic security and caution against information crimes.

A paper entitled, "The Role of Teachers of National and Civic Education in Promoting the Values of Digital Citizenship among Their Students from the Teachers' Point of View," intended to unveil the impact of teachers specializing in national and civic education on instilling the principles of digital citizenship among their students, as perceived by the teachers themselves, [8]. The findings displayed that, according to the study's comprehensive assessment, the function of national and civic education teachers in advancing the principles of digital citizenship among their students was deemed moderate. Notably, the social domain emerged as the highest-ranking domain, characterized by a high degree, while the ethical domain followed closely behind with a moderate degree. The technological domain secured the third position, attaining a moderate degree of influence.

A paper entitled "Absorption of Digital Citizenship for the Future of All Levels of Education" strived to identify the level of awareness among learners and teachers about the concepts

of digital citizenship related to healthy behaviors while using technology in life, [9]. It also focused on developing their awareness of digital literacy. To meet the study's goals, the descriptive method was manipulated. It also concluded that both teachers and students progressed in their awareness of digital citizenship.

A study conducted in 2013 concentrated on demonstrating the skills of new digital citizenship in Turkey and discussed them in comparison with the current practices of digital citizenship, [10]. Based on the study findings, a correlation existed between contemporary technological competencies and the notion of digital citizenship, along with its significance in stimulating the principles of digital democracy. The study further revealed that the current influx of information and the proliferation of scientific content across diverse domains through emerging technologies aligned with the demands and conduct of exemplary citizenship. This was particularly relevant due to individuals' growing reliance on trustworthy and verifiable information, empowering them to make well-informed decisions rooted in personal conviction.

IV. THEORETICAL BACKGROUND

A. Digital Citizenship Values

In agreement with [11], digital citizenship represented one of the new concepts in educational literature in general, and literature was related to citizenship education in particular. The author of [12], is thought to have been one of the first people to be interested in this idea. The widespread and unrestricted use of technological tools was his primary motivation for spreading awareness of this idea.

Values in their abstract meaning are "a set of standards and provisions that represent normative regulations for mental and emotional judgments linked to realistic contents on which members of society rely in organizing their lives and qualify them to judge the words, deeds, and social attitudes of the surrounding individuals and groups through their reaction and interaction with different situations", [13].

Additionally, they are the fundamental rules and guidelines that direct a person's behavior and assist him in modifying his views and deeds to uphold the moral standards and ideals of society and himself, [14].

As for the ideals of digital citizenship, they are the set of values followed in the optimal and positive use of technological tools needed by citizens (regardless of their age groups and cultural levels), to safeguard their nations against the improper use of their tools and to aid in their progress, [11].

The researcher [15], emphasized that the principles of digital citizenship were the standards and norms followed incorrect behavior and the responsibility for the use of multiple technologies.

The author of [16], agreed with other scholars who believed that the foundations of digital citizenship encompassed "the guiding principles, conduct, regulations, and norms that should be in place to delineate the rights and responsibilities

associated with utilizing digital technologies while encouraging their judicious use. These empowered digital citizens to effectively address instances of cultural degradation."

B. Dimensions of Digital Citizenship Values

The concept of "digital values" arose from the evolution of scientific inquiry into citizenship and the digital citizen, which held that an individual must practice digital citizenship along the following dimensions to live in harmony with the elements of the digital environment:

- 1) Enjoying digital etiquette: It denotes that the person accepts accountability for their actions in the digital sphere, establishing personal standards for appropriate digital conduct as well as values and guidelines that they employ and adhere to when using digital technologies. This indicates that he behaves well and civilly and appreciates digital etiquette, [17].
- 2) Awareness of digital security: Digital precautions refer to the deliberate steps taken by users of digital technologies to safeguard their identity and ensure the security of their information, devices, and software. These proactive measures are implemented to mitigate the risk of falling prey to malware and the unauthorized access or theft of personal data and information, [17].
- 3) Familiarity with digital rights and obligations: it means the prerequisites and liberties granted to every individual in the digital realm. These provisions serve to enhance individuals' consciousness of their rights, which safeguard their interests, as well as the corresponding duties that uphold collective interests. These rights and responsibilities are established by the laws governing the utilization of digital technologies. They not only benefit the individual and other users but also promote digital citizenship rights, including privacy and freedom of expression. Moreover, they assist in elucidating the responsibilities that individuals must adhere to, such as treating others with respect, [18].
- 4) Adhering to digital safety procedures: This pertains to the physical and mental well-being of individuals in the digital age, and it entails adopting the appropriate safety measures to preserve human health and well-being. The misuse of digital technologies causes manifold physical problems. For this reason, digital citizenship has helped the emergence of ergonomics, which means the physical and psychological compatibility between digital devices and tools and the individuals who use them on an ongoing basis, [19].

C. The Role of Women in Educating Digital Citizenship Values

The main role of women in education digital citizenship values is to increase the level of knowledge and localize positive practices that reduce the risks of insecure use among family members, especially children. The importance of this role has grown significantly due to the dissemination of many

cybercrimes all over the world, which has highlighted how crucial it is to educate people about this idea. The digital education mechanisms consist of the following, [19]:

- Introducing and raising awareness of ways to use digital technologies and determining how and when they can be used
- Teaching children the digital basics, such as browsers and search engines, and direct evaluation of online resources
- Introducing children to their roles in the world of communication and digital communication and achieving educational and learning goals of communication through social networks and media blogs
- Promoting the degree of realization of the ethical use of digital technologies and aspects of acceptable and unacceptable behavior
- Continuous awareness of the risks and repercussions of intellectual property theft.

V. RESEARCH METHODOLOGY AND TOOLS

By investigating the topic of digital citizenship values and learning about its primary dimensions, this research adopted a descriptive methodology. A questionnaire was then created to gauge the extent to which Saudi women contribute to the promotion of digital citizenship values within the family. The questionnaire comprised two primary variables: the independent variable focused on assessing the level of comprehension and implementation of the aspects of digital citizenship among Saudi women. On the other hand, the dependent variable aspired to gauge the extent to which family members embraced the aspects of digital citizenship. Each of these variables comprised subelements that were utilized for measurement purposes.

A. Content Validity

The questionnaire was subject to content validity, and the coefficient of agreement of the arbitrators was calculated on the questionnaire indicators of 10. The number of times of agreement between the raters was determined by Cooper's equation, and the percentage of agreement ranged between 90% and 100%, which were considered acceptable.

B. Internal Consistency

To estimate the internal consistency of the questionnaire, an exploratory sample of 40 participants was carried out. The collected data was then subjected to statistical analysis, including the calculation of Pearson's correlation coefficients between the different axes and the total score of the scale. All correlations were found to be significant at the 0.01 level, indicating strong internal consistency of the questionnaire items. The correlation coefficients ranged from 0.836 to 0.874, which were considered great values. These results suggested that the questionnaire was both reliable and valid in measuring the intended constructs.

C. Reliability

The researcher calculated reliability coefficients using Cronbach's alpha method and split-half, as illustrated in Table I.

As depicted in Table II, the reliability coefficients, entailing alpha, split-half, and Guttman coefficient, were gauged for both the dimensions and the overall scale of the questionnaire. The obtained values for these coefficients were discovered to be significant at the 0.01 level, signifying strong reliability and validity of the questionnaire. Therefore, it was deemed suitable for use in the present research.

TABLE I. CORRELATION COEFFICIENT OF THE SURVEY ITEMS ABOUT SAUDI WOMEN'S CONTRIBUTIONS TO HA'IL'S FAMILY VALUES OF DIGITAL CITIZENSHIP

Axis	Dimensions	Item	Correlation coefficient	Item	Correlation coefficient	Item	Correlation coefficient
The degree of Saudi women's knowledge and practice of the dimensions of digital citizenship	The degree of Saudi women's practice of positive digital etiquette requirements	1	.853**	2	.878*	3	.855*
		4	.888	5	.360**		
	The degree of Saudi women's knowledge of digital security for digital citizenship	1	.239	2	.877*	3	.561**
		4	.896	5	.355**		
	The degree of Saudi women's knowledge of digital rights and duties	1	.328*	2	.388*	3	.451
		4	.370**	5	.370**		
The degree of family members' practice of dimensions of digital citizenship	The degree of children's practice of positive digital etiquette requirements	1	.850**	2	.308*	3	.411**
		4	0.207	5	.892*	6	.370**
	The degree of family members' awareness of digital security for digital citizenship	1	.387*	2	.824*	3	.865*

TABLE II. RELIABILITY COEFFICIENTS FOR THE AXES OF THE STUDY TOOLS, N = (40)

	Number of items	Alpha	Split-half	
			Spearman's coefficient	Guttman coefficient
The degree of Saudi women's knowledge and practice of the dimensions of digital citizenship	15	0.724**	0.723**	0.739**
The degree of practicing the dimensions of digital citizenship by family members	12	0.713**	0.752**	0.723**

D. Description of the Sample

The research population comprised Saudi women in the Ha'il region, totaling 1150, where the married women were 700 approximately. The study was applied to married women affiliated with the University of Ha'il, and 30% of them were randomly selected. Some Saudi women (210) represented the Ha'il region. Here is a comprehensive description of the selected research sample:

1) *Education level*

Based on Table III, it is obvious that there is a sense of diversity in the study sample in terms of educational attainment, from bachelor's degree holders to doctorate holders. The majority percentage goes to doctorate holders with 54.76%. Furthermore, it is hoped that the study specimen's current understanding of women's employment will enhance the study's finding's objectivity and realism.

2) *The number of hours of internet use among the study sample*

As the largest percentage of study sample members used the Internet for more than five hours a day, Table IV answers the first research question. It indicates that all study sample members use the Internet in some capacity. Therefore, to safeguard themselves from the risks of the Internet and be able to raise their children in the right ways, Saudi women must understand some aspects of the values of digital citizenship.

TABLE III. DISTRIBUTION OF THE EDUCATIONAL LEVEL ACCORDING TO THE SOCIAL AND ECONOMIC VARIABLES (THE RESEARCH AREA) (N = 210)

Category	Number	%
Bachelor's degree	52	24.76
Master's degree	43	20.48
PhD	115	54.76
Total	210	100

TABLE IV. DISTRIBUTION OF THE RESEARCH SAMPLE ACCORDING TO THE NUMBER OF HOURS OF INTERNET USE

Category	Number	%
One hour daily	0	0.00
One to two hours	31	14.76
Two to three hours	0	0.00
Three hours to four hours	72	34.29
Four hours to five hours	30	14.29
More than five hours a day	77	36.67
Total	210	100

3) *The level of Saudi women's knowledge and practice of the dimensions of digital citizenship:*

In agreement with the values given in Table V, there exist some differences in the percentages of the awareness degree and practice of Saudi women in the dimensions of digital citizenship. With a percentage of 84.762%, the highest knowledge group was given priority, followed by those with an intermediate level of knowledge (9.524%) and those with a low awareness level (8.524%). In general, Saudi women's knowledge of their rights and responsibilities online ranked the highest, then their knowledge of digital security and citizenship, which ranked second, and, lastly, their level of compliance with the rules of proper online etiquette. Generally speaking, the Saudi women's knowledge scored a mean score of 2.79 out of 3 which reflects a high level of knowledge.

4) *The degree of practicing the aspects of digital citizenship by family members*

The values contained in Table VI reveal the distinct percentages of the level of family members' practice of the dimensions of digital citizenship. Among the participants, individuals with a low level of practice constituted the highest percentage, accounting for 54.286% of the sample. They were followed by those with a high level of practice, comprising 25.238% of the sample, while individuals with an average level of practice constituted the remaining percentage. In terms of overall awareness among family members, digital security in the context of digital citizenship ranked first. The second priority was given to children's adherence to the requirements of positive digital etiquette, and, finally, family members' knowledge of digital rights and responsibilities ranked third.

5) *The results of the mean values and standard deviations of the sample responses in light of the responses to the digital transformation and family security questionnaire*

According to the results given in the Table VII, the following can be deduced:

- High relative weights fluctuate between 88.89% and 100% for indicators of the axes measuring how well Saudi women understood and applied the diverse aspects of digital citizenship.
- The degree to which Saudi women understood and applied the dimensions of digital citizenship had high relative weights; the axes ranged from 93.78% to 99.65%. The level of knowledge that Saudi women possessed about their rights and responsibilities in the digital sphere ranked highest, while their understanding of the digital security aspects of digital citizenship ranked second. Saudi women's compliance with the

rules of proper digital etiquette came in last overall.

TABLE V. DISTRIBUTION OF THE RESEARCH SAMPLE BASED ON THE LEVEL OF SAUDI WOMEN'S AWARENESS AND PRACTICE OF THE DIMENSIONS OF DIGITAL CITIZENSHIP, AS WELL AS THE RELATIVE WEIGHT OF EACH AXIS (N = 210)

Dimension	Knowledge level	Number	%	Mean	Weight	Order
Saudi women's practice of positive digital etiquette requirements	The knowledge level is low (11>12)	10	4.762	2.71	90.48	3
	The knowledge level is intermediate (12>14)	40	19.048			
	The knowledge level is high (14 and over)	160	76.190			
	Total	210	100			
Saudi women's knowledge of digital security for digital citizenship	Low awareness level)11>9(12	5.714	2.89	96.19	2
	Intermediate awareness level)13>11(0	0.000			
	High awareness level (20 and over)	198	94.286			
	Total	210	100			
Saudi women's knowledge of digital rights and duties	Low awareness level (15>14)	0	0.000	2.95	98.25	1
	Intermediate awareness level (16<15)	11	5.238			
	High awareness level (16 and over)	199	94.762			
	Total	210	100			
Saudi women's knowledge and practice of the dimensions of digital citizenship (as a whole)	Low awareness level (39 < 41)	12	5.714	2.79	93.02	
	Intermediate awareness level (41>43)	20	9.524			
	High awareness level (43 and over)	178	84.762			
	Total	210	100			

TABLE VI. ALLOCATION OF THE RESEARCH SAMPLE BASED ON THE LEVEL OF FAMILY MEMBERS' PRACTICE OF DIGITAL CITIZENSHIP DIMENSIONS AS WELL AS THE RELATIVE WEIGHT OF EACH AXIS (N = 210)

Dimension	The level of family members practicing the dimensions of digital citizenship	Number	%	Mean	Weight	Order
Children's practice of positive digital etiquette requirement.	Low level (7>11)	113	53.810	1.67	55.56	2
	Intermediate level (11>14)	54	25.714			
	High level (14 and over)	43	20.476			
	Total	210	100			
Family members' awareness of digital security for digital citizenship	Low level (3 < 5)	104	49.524	1.85	61.75	1
	Intermediate level (5>7)	33	15.714			
	High level (7 and over)	73	34.762			
	Total	210	100			
Family members' knowledge of digital rights and duties	Low level (3 < 5)	135	64.286	1.56	52.06	3
	Intermediate level (5>7)	32	15.238			
	High level (7 and over)	43	20.476			
	Total	210	100			
Family members' practice of dimensions of digital citizenship (as a whole)	Low level (13<21)	114	54.286	1.71	56.98	
	Intermediate level (21>28)	43	20.476			
	High level (28 and over)	53	25.238			
	Total	210	100			

TABLE VII. FREQUENCIES, PERCENTAGES, CHI-SQUARE, AND ITS STATISTICAL SIGNIFICANCE ON THE DEGREE OF SAUDI WOMEN’S KNOWLEDGE AND PRACTICE OF THE DIMENSIONS OF DIGITAL CITIZENSHIP

Indicators	Arithmetic mean	Standard deviation	Relative weight	Order
1.1 I respect the opinions of others in the digital environment.	2.85	0.36	94.92	3
1.2 I am sensitive to the feelings of others in the digital environment.	2.85	0.35	95.08	2
1.3 I express my feelings rationally when I feel unhappy or uncomfortable in the digital environment.	2.67	0.56	88.89	5
1.4 I check the information before republishing it in the digital environment.	2.95	0.21	98.41	1
1.5 I choose the appropriate time when communicating with others through the digital environment.	2.75	0.43	91.59	4
The degree to which Saudi women practice positive digital etiquette requirements	14.07	1.10	93.78	3
2.1 I know that there are laws to punish those who commit crimes on the Internet.	2.95	0.22	98.25	2
2.2 I respect the copyrights of others within the digital environment and do not attribute them to myself.	3.00	0.00	100.00	1
2.3 I do not open any questionable messages on the Internet.	2.84	0.50	94.60	4
2.4 I do not seek to spread viruses and spam on the Internet.	2.89	0.46	96.19	3
2.5 I do not impersonate others online.	2.89	0.46	96.19	3
The degree of knowledge of Saudi women about digital security for digital citizenship	14.56	1.40	97.05	2
3.1 Digital citizens must accept accountability for their online behavior.	3.00	0.00	100	1
3.2 One of my duties on the Internet is to respect the rights of others.	3.00	0.00	100	1
3.3 It is the responsibility of the digital citizen not to exchange immoral content.	3.00	0.00	100	1
3.4 It is the responsibility of the digital citizen not to use hacking programs or steal the identity of others.	3.00	0.00	100	1
3.5 Digital citizens must refrain from sharing copyrighted digital content with third parties.	2.95	0.22	98.25	2
The degree of Saudi women’s knowledge of digital rights and duties	14.95	0.22	99.65	1
The degree of Saudi women’s knowledge and practice of the dimensions of digital citizenship (as a whole)	43.57	1.53	96.83	

6) *the degree to which family members practice the dimensions of digital citizenship:*

In agreement with Table VIII’s outcomes, family members' levels of practicing the assorted facets of digital citizenship varied widely in terms of their relative weights, from 45.08% to 70.32%. The relative weights of the axes of the degree of family members’ practice of the dimensions of digital citizenship fluctuated from 52.01% to 64.34%. Also, it was found that the family members’ awareness of the digital security of digital citizenship ranked first, followed by children’s practice of positive digital etiquette requirements, and finally came family members’ knowledge of digital rights and duties.

VI. SUMMARY OF THE STUDY RESULTS, DISCUSSION AND RECOMMENDATIONS

Based on the previously set questions, the results of the study can be summarized as follows:

1) The daily use of the Internet by Saudi women in Ha’il: From the researcher's perspective, the results supported the widespread use of the Internet and its integration into disparate facets of life, as most of the study sample

participants reported using it for more than five hours daily. This further reinforced the importance of the current investigation.

- 2) The degree of awareness among Saudi women regarding the three aspects of digital citizenship (i.e., positive digital etiquette requirements, knowledge of digital security, and digital rights and duties): The study's outcomes demonstrated a high degree of familiarity with the study sample and their application of the sundry facets of digital citizenship, with a high rate running from 88.89 to 100. This emphasized the spread of the culture of digital citizenship among the study sample of women. The study's findings were explained by the sample's high educational attainment, which incorporated a range of bachelor's, master's, and doctoral degrees. The Saudi women's knowledge of their rights and responsibilities online was found to be the highest.
- 3) The level of family members’ practice of the dimensions of digital citizenship in three dimensions (the children’s practice of positive digital etiquette requirements, family members’ awareness of digital security dimension of digital citizenship, and family members’ knowledge of

digital rights and duties): Despite the high level of awareness of the study sample members of knowledge and practices of the values of digital citizenship at a high level, the degree of family members' practice of the dimensions of digital citizenship was found to at a medium degree.

- 4) The effect of Saudi women's degree of understanding and application of the values of digital citizenship by family members: The research's outcomes exposed a statistically significant direct correlation between the degree of Saudi women's awareness and application of the dimensions of digital citizenship (as a whole) and at each dimension of digital citizenship, where "R" value reached its statistical significance at the level of 0.01. A statistically significant

positive correlation was detected between the extent of family members engaging in disparate aspects of digital citizenship as a whole and each specific dimension of digital citizenship. Moreover, there was a statistically significant direct correlation found between the extent to which family members practiced the principles of digital citizenship and the knowledge and application of these principles among Saudi women in general. Hence, this entailed that the relationship between the dimensions of the study, whether at the secondary or macro level, expressed the link between the role of women and the practice of family members.

TABLE VIII. FREQUENCIES, PERCENTAGES, CHI-SQUARE, AND ITS STATISTICAL SIGNIFICANCE ON THE DEGREE OF FAMILY MEMBERS PRACTICING THE DIMENSIONS OF DIGITAL CITIZENSHIP

Indicators	Arithmetic mean	Standard deviation	Relative weight	Order
It has been observed that my children's online conversations with their classmates sometimes involved arguments and instances of disrespect.	1.89	0.70	63.02	4
In the past, a family member posted misleading information on social media, which greatly embarrassed us.	1.76	0.83	58.57	6
Without waiting for the right moment, my kids talk to their friends whenever they want, day or night.	1.80	0.75	59.84	5
An observable trend is that children exhibit a reluctance to eat, often attributed to their obsession with Internet usage.	2.01	0.63	66.98	3
My kids' prolonged Internet browsing has caused them to experience physical issues.	2.02	0.83	67.30	2
My children sometimes suffer from constant distraction as a result of focusing on surfing the Internet.	2.11	0.70	70.32	1
The degree of children's practice of positive digital etiquette requirements	11.58	3.42	64.34	1
A family member was exposed to a cybercrime problem.	1.96	0.92	65.40	1
Once, a family member shared electronic content without identifying its source and claimed authorship of it.	1.65	0.72	55.08	2
Malware and viruses spread among computers and our cell phones.	1.60	0.73	53.33	3
Degree of family members' awareness of digital security for digital citizenship	5.21	2.09	57.94	2
When problems occur as a result of the use of social networking sites, the family member's denial and lack of recognition of responsibility are observed.	1.61	0.80	53.81	2
Sometimes, I noticed that a family member unintentionally published immoral content.	1.35	0.65	45.08	3
Sometimes, a family member falls prey to electronic piracy programs.	1.71	0.78	57.14	1
Degree of family members' knowledge of digital rights and duties	4.68	2.05	52.01	3
The degree of practicing the dimensions of digital citizenship by family members (as a whole)	21.48	7.07	59.66	

VII. CONCLUSION

The study findings unveiled that the degree of Saudi women's knowledge and practice of digital citizenship, both as a whole and within each component, significantly predicted the level of family members' engagement in digital citizenship practices. Thus, the results obtained concur with the outcomes of the studies, [5], [6], [7]. Contrary to the findings of the study [8], regarding the role of teachers or schools in promoting digital citizenship values, the current study highlights the role of Saudi women, albeit to a moderate extent, in elevating these values among their family members. It is important to consider and incorporate these contrasting results into the existing body of literature on digital citizenship promotion.

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REFERENCES

- [1] E. A.-W. H. Sayed, "The school's role in inculcating the values of digital citizenship, department of research and scientific publishing," *Faculty of Education, Assiut University*, vol. 37, no. 10, 2021.
- [2] G. A. K. Al-Dahshan, "Digital citizenship as an introduction to helping our children live in the digital age," *Journal of the Faculty of Education, Menoufia University*, pp. 1–42, 2015.
- [3] A. A.-R. M. Ismail, *The Smart City is an Arab ideological ambition, a strategy to support - digital transformation and smart infrastructure management for the countries of the region in achieving prosperity and quality of life towards advanced societies*. Cairo: Dar Rawabet Publishing and Distribution, 2018.
- [4] A. A. A.-S. Al-Banna and G. F. Hashem, "The role of the family in facing the risks of digital transformation among general secondary education students," *Journal of the Faculty of Education, Faculty of Education, Assiut University*, vol. 4, no. 2, pp. 166–189, 2022.
- [5] A. A.-R. S. Al-Rashidi, "The role of social studies teachers in promoting the values of digital citizenship from their point of view," *Specific Education Research Journal, Faculty of Specific Education, Mansoura University*, vol. 61, pp. 53–73, 2021.
- [6] H. A. I. Al-Ateeq, "The role of Saudi secondary schools in promoting digital citizenship for their students," *Journal of the College of Education, Mansoura University*, no. 10, 2020.
- [7] M. bin A. M. A.-A. Al-Zahrani, "The school's contribution to achieving digital citizenship among its students in light of contemporary challenges," *Educational Journal, Sohag University, Faculty of Education*, vol. 68, p. 4, 2019.
- [8] A. M. Al-Waqqad, "The role of teachers of national and civic education in promoting the values of digital citizenship among their students from the point of view of teachers," *The Journal of the Islamic University for Educational and Psychological Studies*, vol. 28, no. 4, pp. 258–276, 2020.
- [9] Z. Gazi, "Internalization of digital citizenship for the future of all levels of education," *Eğitim ve Bilim*, vol. 41, no. 186, pp. 137–148, Jul. 2016, doi: 10.15390/EB.2016.4533.
- [10] E. Simsek and A. Simsek, "New literacies for digital citizenship," *Contemporary Educational Technology*, vol. 4, no. 2, pp. 126–137, Jun. 2013, doi: 10.30935/cedtech/6097.
- [11] H. Tawalbeh, "Digital citizenship in national and civic education books - an analytical study," *The Jordanian Journal of Educational Sciences*, vol. 13, no. 3, pp. 291–308, 2017.
- [12] M. Ribble, *Digital Citizenship in School. International Society for Technology in Education*, 2nd Edition. Oregon, Washington: Eugene, 2006.
- [13] H. A.-Q. Al-Agha, "The role of cultural stereotyping in shaping the value system among adolescent students in the governorates of Gaza and a proposed vision to control that role," *Al-Quds Open Journal for Educational and Psychological Research and Studies*, vol. 8, pp. 121–139, 2018.
- [14] A. Al Selimi, "The concept of values and its importance in the educational process and its behavioral applications from the Islamic perspective", *Journal of Educational and Psychological Sciences*, vol. 3, pp. 79–94, Jan. 2019, doi: 10.26389/AJSRP.A160918.
- [15] M. Al-Qayed, "The concept of digital citizenship." Accessed: Feb. 18, 2024. [Online]. Available: <https://www.new-educ.com/definition-of-digital-citizenship>
- [16] H. A. H. Shaqura, "The role of secondary school teachers in the governorates of Gaza in promoting digital citizenship to confront the phenomenon of cultural pollution among students and ways to activate it," Unpublished master's thesis, College of Education, Islamic University, Gaza, 2017.
- [17] M. Ribble, "Digital citizenship for educational change," *Kappa Delta Pi Record*, vol. 48, no. 4, pp. 148–151, Oct. 2012, doi: 10.1080/00228958.2012.734015.
- [18] A. Couros and K. Hildebrandt, *Digital Citizenship Education in Saskatchewan Schools*. CA: Saskatchewan Ministry of Education, 2015.
- [19] T. A.-M. Al-Mallah, *Digital Citizenship (Challenges and Hopes)*. Cairo: Dar Al-Sahab for Publishing and Distribution, 2017.

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