



Gender-Based Digital Violence in Higher Education Stage: A Case Study of a Middle Eastern Country

By

Dr. Lama Rashed Abdulaziz Al-Ghofaily

Princess Nourah bint Abdulrahman University
Applied college
Department of Basic Sciences
lralghofaily@pnu.edu.sa

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Abstract:

Cross-sectionally, this study aims at investigating digital gender-based violence among female university students in Saudi Arabia, sampling 620 students from several Saudi universities. The study explored the association between digital violence and a variety of sociodemographic factors. Hence, the study indicated statistically significant disparities in the prevalence of digital gender-based violence in terms of family monthly income and university geographical location. Notably, the study found no statistically significant differences between places of residency, parental educational level, or academic specialization. These findings shed light on the dynamics of digital gender-based violence in Saudi higher education institutions and emphasized the role socioeconomic variables in addressing this issue. Moreover, the study suggested that intervention methods should consider income gaps and regional variations when establishing preventive measures and support systems for digitally-abused female university students. Empirically, this study added to the field of digital safety and gender-based violence, influenced policy-making and institutional responses to safeguard female students in the digital realm.

Keywords: Digital Gender-Based Violence, Female University Students, Saudi Arabia, Higher Education





Introduction

Gender-based violence or violence directed against women is the most widespread type of violence (**United Nations Population Fund, 2021**). Violence against women varies and manifests in several forms, such as harassment, emotional abuse, stalking, etc. (**Crowell and Burgess,1996**). In this regard, technology has provided new forms and manifestations of this violence.

Technology has altered drastically self-expression and human relationships, transcending temporal and geographical boundaries through unlimited communication, interaction, and surveillance. Unfortunately, this has provided new channels and opportunities to expand gender-based violence and other violent manifestations (Harris and Vitis, 2020). Woodlock (2017) highlighted that technology has instilled in victims of gender-based violence a sense of omnipresence, enabling perpetrators to punish and humiliate them. Also, it is noted that survivors believe they are under constant surveillance, even when they are not. This validates Bentham's concept of disciplinary measures in prisons, where a lone guard can keep an eye on inmates without their awareness.

Continuous surveillance, also known as "surveillance capitalism" in technology, instills a sense of self-discipline in even minute details of life, using algorithms to monitor all aspects of our online behaviors. This interprets the presence of an authority similar to the patriarchal system in the traditional conceptualization of gender-based violence, as Michel Foucault previously explained, which leads survivors of digital violence to constantly change their behavior (**Barter and Koulu, 2021**).

In 2015, the United Nations reported that cyber violence has affected three-quarters of women worldwide, with 9 million women in 28 European countries suffering from digital abuse (**Barter and Koulu, 2021**). Such abuse moves women to impose self-censorship on their online posts and sharing, restrict their activities, and sometimes completely cease their digital presence to evade psychological harm (**Council of Europe, n.d.**).

Amnesty International conducted a survey on women who have experienced digital violence, revealing that 42% of women in the





United States and 36% in the United Kingdom perceive a threat to their physical safety. One-fifth of women in the United Kingdom and one-fourth of women in the United States feel that their families' safety is at risk after experiencing violence through digital platforms. Roughly, 208 women reported experiencing stress, anxiety, helplessness, and loss of confidence because of online harassment or abuse (Amnesty International, 2018).

Set an example for confronting digital violence, Saudi Arabia enacted laws regulating digital activity. The Ministry of Information and Communications Technology legislated 16 articles related to internet use and imposed strict penalties for privacy violations (International Telecommunication Union, 2009). Additionally, enhancing digital skills was a government priority within Saudi Vision 2030 through a digital transformation initiative to create a vibrant digital society (Alghamdi et al., 2022).

Accordingly, The Global Digital Competitiveness Report (Schwab and Zahidi, 2020) (Arab News, 2020) ranks Saudi Arabia among the top 10 countries in terms of digital knowledge proficiency. Furthermore, the International Telecommunication Union (ITU) in 2021 showed that 89% of Saudis have basic information and communication technology skills, and all Saudis in the Kingdom (men and women) own mobile phones and have internet connections at home (ITU, 2023). Consequently, Saudi Arabia received the International Telecommunication Union award for its Women in Technology Empowerment Program.

Nonetheless, cases of cyberattacks and cybercrimes keep rising in parallel with the expansion of smartphone usage, which makes it unprecedentedly accessible for attackers to target females, allowing the perpetrators to keep hidden and secretive (**Qahtani et al., 2018**). Women have concerns about their personal security in a technologically-advanced world due to the gender-based violence (**Dunn et al., 2023**). Their anxieties about confidentiality exacerbate the acts of prejudice, thereby intensifying their discomfort (**Fogel and Nehmad, 2009**).





Despite these concerns, it is widely assumed that university students are technologically adept, and today's pupils were among the first to use social media. This group of internet users is more prepared to participate in 21st-century online discussions and generate large amounts of information. An important consideration is whether their traditional digital understanding will foster well-developed digital citizenship acts or have a detrimental impact, potentially exposing children to online abuse and bullying (Macharia, 2019).

Digital gender-based violence (DGBV) has become an increasing issue in higher education, particularly affecting female university students and increasing social gender imbalances. This type of violence, which includes cyberbullying, online harassment, and the non-consensual sharing of personal information or photographs, is ubiquitous on social media and digital platforms (**Jones et al., 2020**). The secrecy and rapid dissemination capabilities of electronic gadgets heighten their impact, creating an environment in which criminal behaviors continue unabated.

The consequences of DGBV extend beyond the digital realm, slowing academic progress and harming victims' mental health, resulting in increased worry, depression, and alienation from campus life (Coffey et al., 2023). These implications foster a fragile environment, limiting female students' educational opportunities and prohibiting them from fully engaging in academic and social life (Orchard and Sangaraganesan, 2022). In regionally different settings, such as Saudi Arabia, the interaction of traditional gender norms and online platforms necessitates customized solutions to DGBV. Angeles et al. (2022) suggest rebuilding digital literacy and self-protection among female students to enhance their resilience against online abuse.

In the digital era, gender-based violence transcends physical limitations, emerging in novel forms within digital environments. Female university students possess distinct vulnerabilities shaped by their academic, social, and economic environments. Comprehending the dynamics of gender-based digital violence necessitates a





comprehensive investigation of how variables such as academic specialization, university location, type of habitation, family financial level, and parental education influence these experiences. The researcher formulated the following research questions to investigate these dimensions and establish the foundation for theoretical framework. This study is significant for decision-making that facilitates data-driven modifications to educational policies and procedures. Hence, the study questions can be formulated as follows:

- 1. Are there statistically significant differences in gender-based digital violence among female university students in Saudi Arabia based on their academic major and residential location (rural-urban)?
- 2. Are there statistically significant differences in university students' exposure to gender-based digital violence based on the geographical location of the university and the family's monthly income level in Saudi Arabia?
- 3. Are there statistically significant differences in university students' exposure to gender-based digital violence in Saudi Arabia based on their parents' educational levels?

Gender-based Digital Violence in Higher Education

Generally, digital violence is as a set of behaviors or actions in which a person manipulates technology, including social networks, text messages, and online publishing, in a way that appears aggressive or threatening to others (**Baldasare et al., 2012**). **Further, Soto and I babe (2022)** redefine it as actions aimed at directly harming others through technology, such as sending threatening or insulting messages via virtual networks.

In other words, gender-based digital violence against women is defined as "any act of violence against a woman that is committed, aided, or exacerbated wholly or partially by means of information and communication technologies, such as mobile phones, smartphones, the internet, social media platforms, or email, which targets a woman because she is a woman or affects women disproportionately" (**United Nations, 2018**).





Many researchers have reported that girls experience more harm and exposure to digital violence than boys, leading to widespread concern regarding the use of technology in human relationships. Multiple studies, including the third gender-based assessment report on youth, suggest that the infringement of personal photos and videos may subject females to more harmful effects than males (**Brown and Hegarty, 2021**).

Men benefit from technology and seek to maintain their control over it, leading to the description of many digital environments as hostile to women. This confirms that the relationship between gender and technology is essentially a process of "production and reproduction of the hierarchy between women and men and between masculinity and femininity." Technology makers, most of whom are men, promote a culture of inequality and systemic biases on the internet and search engines. Even when women use technology widely like social media platforms, some argue that they are less able to influence their use (Harris and Vitis, 2022).

Digital victims have reported numerous forms of violence and cyberbullying against female students at the university, classifying them as common due to the frequency of these behaviors. The most common behaviors include online insults, mocking others, receiving harmful threatening messages, and posting embarrassing photos without permission. Other common behaviors include stealing personal information, attempting to access personal emails, hacking personal accounts, and posting personal photos to defame the victims. (**Brack and Caltabiano,2014**).

The Internet Governance Forum (IGF) has published a report on online abuse and gender, detailing the forms of gender-based digital violence as follows (Association for Progressive Communications, 2017):

- Violation of privacy: accessing private data and using or publishing it without the owner's consent through hacking [personal data- passwords- identity theft- using someone else's computer to access user accounts during login].
- Taking photos or videos of women and attempting to access, use, manipulate, or publish them without consent.





- Sharing and publishing private information.
- Doxing which is the act of googling an individual's personal profiles without consent, sometimes with the intent of providing access to women in the real world (for harassment or other purposes).
- Making online offensive comments or posts about women with the intent to defame girls, including slander and libel.
- harassment that may be accompanied by offline harassment for girls.
- Online bullying or repeated harassment through unsolicited messages.
- Internet content always portrays women as sexual objects.
- Using inappropriate images and comics to degrade women.
- Using gender-biased comments.
- Abuse or exposing women for expressing uncommon opinions.
- Providing online advice about suicide or advocating for the killing of females.

Gender-based digital violence utilizes a variety of techniques, such as sending threatening messages or bullying girls via mobile phones, publicizing rumors or audio recordings through social media systems employing the victim's photos or videos, demonstrating their personal information, and stealing their virtual identity (**Garcia et al., 2021**). **Burke et al. (2011)** found that 25% of female students acknowledged the perpetrator's use of threatening messages or links to steal the victim's email, as well as the use of text messages with threatening phrases directed toward girls (**Melander, 2010**).

According to Bourdieu, digital violence and symbolic violence are alike, both are used to decipher the underlying reasons for persistent male dominance. He defines it as a subtle and invisible violence to its victims, often exercised through symbolic channels of communication, perception, or recognition (**chakraborty**, **2021**).

According to Pierre Bourdieu, symbolic violence refers to the use of minor non-physical power, such as harm. Instead, there are subtle variations on symbolic violence, which may not be perceived as "violence" (**Suyoga and Dwijendra, 2020**). The present study redefines it as analogous to digital violence perpetrated against





female undergraduates. **Bourdieu** (1992) stated that symbolic violence combines numerous manifestations:

- (1) Belittlement: This behavior is marked by arrogance and discrimination, leading to a degenerating of the value, status, and dignity of others. This behavior is characterized by arrogance, disdain, and social ostracism.
- (2) Value denial: which includes a denial of individuals' abilities and skills to exert control over them, suppress and restrict their abilities.
- (3) Deprivation and psychological alienation: which means the usurpation of individuals' rights and their professional and social benefits, as well as the denial of their opportunity to express their viewpoints.
- (4) Symbols, linguistic signals, and physical actions that indicate the aggressor's influence, rejection, and claim of social power over others are indicators of overt aggressive expression.

Methodology and Tools Study Sample

To disseminate the questionnaire among the participants, the researcher distributed the survey's Google form in Arabic throughout several social media websites. The introductory page included a brief statement that informed participants about the study's organization, the confidentiality of their data, and their entitlement to withdraw from the analysis at any stage. Upon their consent, the participants respond to the online questionnaire. By the end of the questionnaire, the participants received a debriefing. The questionnaire process, which included reading the short and debriefing, endure 15 minutes.

Table 1 presents the size of the study sample, which consisted of university female students in the Kingdom of Saudi Arabia, summing 620 students. In terms of representation, 317 students (51.1%) specialized in theoretical majors, while 303 students (48.9%) specialized in practical applied majors. According to the variable of university location within Saudi universities, the number of female students in the capital was 146 girls (23.5%); the number of female students in the eastern region of the kingdom was 147



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girls (23.7%); the number of female students in the northern region was 195 girls (31.5%); and the number of female students in the southern region was 132 girls (21.3%).

Table 1: The Demographic Characteristics of the Study Sample

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Variable			Percent (%)
Specialization	Theoretical	317	51.1
	Practical	303	48.9
University Region	Capital	146	23.5
	East	147	23.7
	North	195	31.5
	South	132	21.3
Residence Type	Village	212	34.2
	City	408	65.8
Income Level	Low	90	14.5
	Medium	514	82.9
	High	16	2.6
Mother's Education Level	Illiterate	61	9.8
	Medium Qualification	358	57.7
	High Qualification	201	32.4
Father's Education Level	Illiterate	27	4.4
	Basic education	356	57.4
	University education	237	38.2
Most of the people who have	Known Individuals	119	19.2%
subjected me to violence through	Colleagues	132	21.3%
social media	Relatives	45	7.3%
	Strangers	324	52.3%
The most common means through	Facebook	324	52.3%
which you have been subjected to	WhatsApp	156	25.2%
digital abuse	Other	5	0.8%
	Twitter	125	20.2%
	YouTube	1	0.2%
	Email	6	1.0%
	Instagram	3	0.5%
The number of times you have	Once	324	52.3%
been subjected to cyberbullying	Twice	103	16.6%
on social media	Thrice	44	7.1%
	More than thrice	149	24.0%
Your reaction to cyberbullying	Ignoring	237	38.2%
	Changing Account	30	4.8%
	Deleting Bad Messages	45	7.3%
	Blocking Friendship	148	23.9%





	Privacy Settings	38	6.1%
	Informing Parents	28	4.5%
	Blocking Unknown Messages	42	6.8%
	Other Responses	52	8.4%
The average hours you spend on	Less than 1 hour per day	38	6.1%
social media daily	1-3 hours per day	165	26.6%
	3 or more hours per day	417	67.3%
TOTAL		620	100%

As for the place of residence, the number of students living in cities was 408 (65.8%), while the number of students living in villages was 212 students (34.2%). According to the monthly family income level, the number of students from low-income families was 90 students (14.5%); those from middle-income families were 514 students (82.9%); and those from high-income families were 16 students (2.6%).

Regarding the mother's education level, 61 students (6.1%) were illiterate. Those with a medium level of education numbered 358 students (57.7%), and those with a university degree numbered 201 students (32.4%).

Regarding the father's educational level, 27 students (4.4%) had illiterate fathers; 356 students (57.4%) had middle-class fathers; and 237 students (38.2%) had university-level fathers.

Unidentified strangers accounted for (52.3%) of the digital abuse that female students experienced, then peers (21.3%), those with whom they had a previous relationship (19.2%), and finally relatives (7.3%). Facebook was the most popular social media site for this type of violence, accounting for 52.3%, followed by WhatsApp (25.2%), Twitter (20.2%), and email (1%). Yet, people used other social media channels, albeit in small amounts.

University students reported encountering digital violence once (52.3%), twice (16.6%), and more than three times (24%), respectively. In response to digital abuse, students used a variety of rejection strategies, including ignoring the abuse (38.2%), blocking individuals (23.9%), deleting harmful messages (7.3%), preventing





unknown messages (6.8%), adjusting privacy settings (6.1%), and informing a parent (4.5%). Students also employed other strategies to express their opposition to digital violence. Most of the female students participating in the survey spend more than three hours daily on social media, at a rate of 67.3%.

Alpha Cronbach reliability coefficient amounted to 0,818, which revealed that the questionnaire showed a high level of internal consistency. Upon analysis, it is evident that each item in the questionnaire has intricate connections and evaluates the same fundamental concept. Furthermore, each dimension exhibited outstanding reliability, as Alpha Cronbach coefficients ranging from 0.729 to 0.809. In detail, the item of "Declared Hostile Expression" demonstrated the highest level of reliability as coefficient ratio was 0.809. For "Belittlement" and "Value Denial" the coefficients were 0.795, and 0.735, respectively. The Psychological Alienation dimension has the lowest level of reliability at a value of $\alpha = 0.729$. According to **Hair et al. (2012)**, Alpha Cronbach score of more than 0.7 indicates significant reliability. According to **Table 2**, Alpha Cronbach values for all variables are greater than 0.7, which confirms the reliability of the study instrument.

Table 2: Reliability Results

Dimension	NO. of Items	Alpha Cronbach
Minimization or Belittlement	6	0.79
Value Denial	6	0.73
Psychological Alienation	6	0.72
Declared Hostile Expression	5	0.80
Total Scale	23	0.81

Tool

The present study used a standardized questionnaire divided into three sections. The respondents` were female university students in Saudi Arabia. The first section described the study objectives and the demographic data, including academic discipline, university region, the family location (rural or urban), domestic socioeconomic standard, and parental level of education. The second section comprised the study evaluation scale, which evaluated four dimensions: belittlement, value denial, psychological alienation, and





overt hostile expression. These dimensions were measured using a three-point Likert scale, combining responses of "agree," "agree to somewhat," and "disagree." The final section examined the origins of digital violence, emphasizing the role of both human perpetrators and cyberspace as crucial factors. Furthermore, it documented the students' emotional responses and coping mechanisms about digital violence.

Statistical Methods

The study employed a variety of statistical methods to analyze the questionnaire responses from the study sample members. These methods included the use of descriptive and inferential statistics, percentages to calculate frequencies, and T- tests for two independent samples to determine any differences in the sample members' responses to the questionnaire items based demographic variables like place of residence and scientific specialization. Additionally, one-way ANOVA was employed to identify any statistically significant differences of less than 05. The study used one-way ANOVA to identify statistically significant differences among the sample members based on university location, family monthly income, and parental educational level. the researcher used LSD for two-dimensional comparison, Pearson's correlation coefficient for determining the significance of the study axes' association, and regression analysis for testing statistical hypotheses and assessing the influence of independent variables on dependent variables.

Results

In table 3, the descriptive statistics reveal the prevalence and consistency of four psychological variables among 620 participants. The item "Minimization or Belittlement" exhibits the highest mean score (M = 2.57, SD = 0.458), suggesting that this psychological response is the most typically reported. Consequently, "Declared Hostile Expression" exhibits a significant mean (M = 2.29, SD = 0.590), indicating that explicit hostile responses are relatively common among individuals. Conversely, "psychological alienation"





(M = 2.24, SD = 0.634) and "value denial" (M = 2.10, SD = 0.643) demonstrate somewhat lower mean values, indicating reduced but still significant degrees of alienation and value denial experiences.

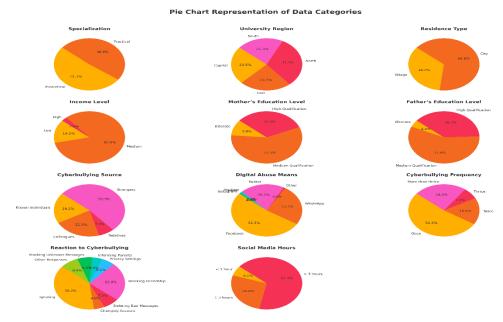


Figure 1: Proportional Distribution of Survey Responses Across Key Categories

Table 3: Descriptive Statistics for Individual Survey Items

Item	Mean	Standard Deviation	N
Minimization or	2.57	0.458	
Belittlement			
Value Denial	2.10	0.643	
Psychological	2.24	0.634	620
Alienation			
Declared Hostile	2.29	0.590	
Expression			

There are strong relationships between the psychological factors (minimization or belittlement, value denial, psychological alienation, and declared hostile expression) as shown **in Table 4**. These relationships are statistically significant at the p < 0.01 level. Value denial and psychological alienation have the most significant connection (r = 0.796), indicating a considerable association. This





suggests that individuals who experience a denial of personal value are also susceptible to feelings of alienation. This strong correlation suggests that value denial may directly lead to or intensify feelings of psychological alienation from others.

Table 4: Correlation Matrix for Item Interrelationships

Minimization	Value	Psychological	Declared
or Belittlement	Denial	Alienation	Hostile
			Expression
1.000	0.466**	0.477**	0.576**
0.466**	1.000	0.796**	0.437**
0.477**	0.796**	1.000	0.445**
0.576**	0.437**	0.445**	1.000
	0.466** 0.477**	or Belittlement Denial 1.000 0.466** 0.466** 1.000 0.477** 0.796**	or Belittlement Denial Alienation 1.000 0.466** 0.477** 0.466** 1.000 0.796** 0.477** 0.796** 1.000

Note: p < 0.01.

Moreover, minimization or belittlement exhibits a moderate relationship with declared hostility expression (r = 0.576), indicating that persons who experience minimization are also inclined to express hostility. This link may indicate defensive or reactive aggression as a reaction to feelings of belittlement. Minimization or belittlement exhibits a moderate correlation with both value denial (r = 0.466) and psychological alienation (r = 0.477), highlighting the interconnectedness of these negative self-perceptions and emotional responses.

Conversely, the items exhibit negligible relationship with external factors, including sources of digital violence and specialization, with all values falling below 0.1 and deemed statistically insignificant. The correlation between declared hostility expression and sources of digital violence is -0.070, signifying an almost nonexistent relationship. The low correlation indicates that these psychosocial variables are predominantly intrinsic and minimally affected by external situational circumstances, such as exposure to digital violence or vocational specialization, emphasizing the scale's concentration on internal psychological states. The results show that the psychological categories are cohesively interdependent on each other while being relatively independent on external factors. This





proves the scale's reliability and adequacy for measuring the intrinsic psychosocial qualities.

Statistically, "Minimization or Belittlement" scored the most significant mean score (M = 2.57, SD = 0.458), then came "Declared Hostile Expression" (M = 2.29, SD = 0.590). The higher scores suggest that individuals show greater degrees of minimization and hostility compared to other types of emotional denial and alienation. Low variability (standard deviations below 1.1) across every variable signifies consistency in participants' experiences and viewpoints.

Table 5 shows a statistical analysis of income levels (low, medium, and high) using the LSD technique for four behavioral variables: minimization or belittlement, value denial, psychological alienation, and declared hostile expression. Significant differences were observed between low and medium income levels in minimization (mean difference = -0.23289, p = 0.000), value denial (-0.23286, p = 0.002), psychological alienation (-0.29437, p = 0.000), and declared hostile expression (-0.16056, p = 0.017). Most variables exhibited no statistically significant differences between low and high income levels, nor between medium and high income levels. The results show that individuals with low income are more prone to exhibit negative behaviors than those with medium income, likely because of economic pressures. The absence of notable differences between medium and high income groups underscores certain behavioral similarities between these groups. These results highlight the necessity of social policies developed to improve conditions for lowincome populations to address these behavioral patterns.





Table 5: Income Levels Across Variables: A Statistical Analysis Using the LSD Method

Dependent Variable	Income Levels	Mean	Std.	Sig.
1	(I vs J)	Difference	Error	6
		(I-J)		
Minimization or Belittlement	Low vs Medium	-0.232	0.051	0
	Low vs High	-0.234	0.122	0.056
	Medium vs High	-0.002	0.114	0.986
	Low vs Medium	-0.232	0.073	0.002
Value Denial	Low vs High	-0.213	0.173	0.218
	Medium vs High	0.018	0.162	0.907
Psychological Alienation	Low vs Medium	-0.294	0.071	0
	Low vs High	-0.278	0.170	0.102
	Medium vs High	0.016	0.159	0.919
Declared Hostile Expression	Low vs Medium	-0.160	0.067	0.017
	Low vs High	-0.236	0.159	0.139
	Medium vs High	-0.075	0.149	0.612

Using the LSD method in **Table 6**, the statistical analysis shows that there are significant differences between universities in the following dependent variables: value denial, psychological alienation, declared hostile expression, and minimization. The capital region significantly exhibited lower minimization levels compared to the eastern region (mean difference = -0.170, sig = 0.001) and the northern region (mean difference = -0.155, sig = 0.002), while the southern region showed no significant difference (sig = 0.248). For value denial, the Northern region indicated significantly higher levels than the Capital (average variance = -0.140, sig = 0.04), with little variance across other regions (sig > 0.05). The Northern region demonstrated the highest levels of psychological alienation, illustrating significant variance from the Capital (mean difference = -0.15752, p = 0.023) and the Southern region (average variance = -0.189, p = 0.008). The comparisons with the Eastern region did not result in significant findings (p > 0.05). Regarding declared hostile expression, the capital had significantly lower levels than the eastern (mean difference = -0.235, sig = 0.001) and northern regions (mean difference = -0.157, sig = 0.014), while





differences in the southern region were insignificant. These results reveal an increased negative behavioral expression in the Northern region, particularly in psychological alienation, and consistently lower levels in the Capital. This manifests how regional factors affect students` performance in university.

Table 6: Statistical Comparisons Across Regions (LSD Method)

Table of Statis	ucai Comparisons Across	Regions (LSD Method)
Dependent Variable	Significant Comparisons	Key Findings
Minimization	Capital vs East Region (-0.170, p = 0.001)	The Capital exhibited significantly lower minimization levels compared to the East and North regions. No difference with South (p = 0.248).
	Capital vs North Region (- 0.155 , p = 0.002)	
Value Denial	Capital vs North Region (- 0.140, p = 0.047)	The Northern region displayed significantly higher value denial compared to the Capital. No notable differences across other regions.
Psychological Alienation	Capital vs North Region (- 0.157, p = 0.023)	The Northern region showed the highest levels of psychological alienation, differing significantly from the Capital and South.
	South vs North Region (-0.189, $p = 0.008$)	-
Declared Hostile Expression	Capital vs East Region (-0.235, p = 0.001)	The Capital had significantly lower hostile expression levels compared to the East and North regions. Differences with the South were insignificant.
	Capital vs North Region (- 0.157 , p = 0.014)	





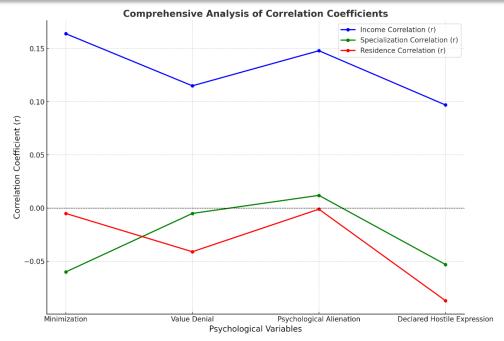


Figure 2: Correlation Analysis of Demographic Factors and Psychological Variables

In Figure 2, The chart illustrates the correlation coefficients (r) between demographic variables (income, specialization, university, residence, mother's and father's education) and psychological factors (minimization, value denial, psychological alienation, and hostile expression). Income has the strongest positive relationships, particularly with minimization (r = 0.164) and psychological estrangement (r = 0.148), which are both statistically significant. Residence, on the other hand, has a modest negative relationship with hostile expression (r = -0.087), but specialization, university, and parental education have little impact, with correlation coefficients ranging from zero to slightly negative. These results show that wealth has the most significant effect on psychological traits, while other demographic factors have the least noticeable effect. This suggests that contextual and environmental factors should be included to get a better understanding.





Discussion

A great deal of literature indicated that university female students have already possess some knowledge and concepts about gender-based violence, but their strategies to stop this type of violence are underdeveloped. Yet, this discipline secures little academic attention (Donoso Vázquez et al., 2022, 2019; Henry & Powell, 2016, 2018; Villar Varela et al., 2021; Crooks et al., 2019).

Therefore, training on preventing digital gender-based violence and other forms of support like media awareness and websites in educational environments such as universities can help female students resist such violence (Díaz Aguda, 2016; Donoso Vázquez et al., 2022, 2019; Gámez-Guadix et al., 2022). A plethora of studies have manifested that a significant number of female students have become victims of digital violence through their mobile phones.

Smith et al. in (2008) and Duran & Pecino (2015) highlighted that many female students have fallen prey to digital violence via mobile phones. Some scholars revealed that female students experiencing digital abuse are more prone to alcohol consumption and exhibit poor peer cooperation (Bennett et al., 2011; Pecino et al., 2019; Antoniadou et al., 2019).

Cripps and Stermac (2018) Jenaro, Flores and Fras (2021) reached that female students subjected to gender-based digital violence experienced more symptoms of depression, anxiety, and stress, which negatively impacted their emotional well-being. According to Cesur, Nur, and PI, (2016), they also felt more lonely, which could often lead to suicidal behaviors (Bauman et al., 2013; Srivastava et al., 2022). Abuse perpetrators against female students were more aggressive and had poor cooperation with their peers (Antoniadou et al., 2019), which impacted their university studies and exposure to academic problems (Hinduja and Patchin, 2008).

Hence, the patriarchal culture in some Arab societies is largely due to the exposure of female university students to gender-based digital violence. These women often opt not to report violence due to various social reasons, such as fear of further violence, blame, fear





of punishment or lack of trust in others (Wali et al. 2020, Al Dosary et al. 2016, Kisa et al. 2023). Therefore, many females require training to resist gender-based digital violence (Baumgartner et al., 2010; Gámez-Guadix et al., 2022; Huiskes et al., 2022; Pedersen et al., 2022; Powell et al., 2020; Vergés Bosch & Gil-Juarez, 2021).

Theoretical implications

Gender-based violence (GBV) in universities is a significant global problem requiring meticulous investigation (Jones et al., 2020). The recent development of symbolic and electronic forms of violence increases the significance of investigating the topic, because it shows itself through virtual texts, images, and visualizations (Olivares, 2024). The conceptual framework enhances the comprehension of gender-based digital violence, facilitating the development of comprehensive theoretical models. This practice involves investigating how damaging masculinity and cultural factors contribute to the perpetuation of violence in educational settings (Orchard and Sangaraganesan, 2022).

Practical significance

Gender-based violence has a significant influence on students' academic progress and well-being, resulting in ongoing anxiety, stress, and difficulties meeting their educational goals (Coffey et al., 2023). To successfully address these concerns, universities must adopt flexible guidelines and regulations. In terms of prevention, the study realizes dangerously high levels of gender-based violence in universities, with prevalence rates up to 57.8% among female students (Mutinta, 2022). Recognizing digital manifestations of such pattern of violence is critical to establishing effective preventative efforts. Considering institutional reactions, universities play a significant role in enacting structural adjustments to prevent major catastrophes. Research in the field helps institutions build successful intervention programs and support programs (Ángeles et al. 2022).





Limitations and Future Research

This study investigates digital gender-based violence among female university students, but a significant limitation results from the small number of participants, potentially limiting the generalizability of findings to other contexts or demographics. In addition, the utilization of self-reported measures increases the possibility of prejudice, caused by fears of societal judgment or a lack of knowledge about experiences of digital violence. However, the study offers novel possibilities for exploring the effect on social and technological variables that produce such a phenomenon. It advocates the use of multidisciplinary approaches that incorporate sociology, psychology, and artificial intelligence techniques to more thorough evaluation of digital data. Furthermore, it highlights the significance of evidence-based preventive measures and university policies focused on addressing these increasing issues while establishing safer and more accessible learning environments for female students.

Conclusion

In higher education, digital gender-based violence is a key issue that necessitates additional support and preventative measures. The study underscores the imperative for holistic solutions that consider the enduring impacts on the academic and emotional lives of students subjected to traditional and digital forms of attack. Digital genderbased violence in Saudi institutions is a critical dilemma that highlights the intersection of technology and social inequities. As digital platforms become increasingly important for social and academic relationships, the risk of exploitation and harm increases, particularly for female students. Addressing this issue requires a comprehensive strategy that encompasses extensive investigation, culturally sensitive policies, and proactive measures. Universities must prioritize the establishment of secure digital and physical environments implementing comprehensive regulations, by awareness efforts, and support systems targeted to the needs of female students. Additionally, establishing a culture of respect and digital responsibility within educational organizations is crucial for minimizing these dangers. By tackling digital gender-based





violence, Saudi universities could demonstrate the advancement of equality, safety, and power in higher education, thereby keeping up with international requirements for fostering inclusive and respectful educational environments.





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