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# The Mediating Role of Gender in ICT Acceptance & Its Impacts on Students' Academic Performance during Covid-19



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# ABSTRACT

The global pandemic raised several social and economic challenges worldwide. Executing lockdown and closure of educational institutions became only options to mitigate these challenges, leading to educational barriers for billions of students worldwide. In such a situation, the acceptance, adoption and integration of ICT informally supported the learning process. However, policymakers, instructors and critics anticipated adverse consequences due to a fast shift from conventional to eLearning system. In this regard, the current research scrutinized the intervening role of gender in acceptance during Covid-19 eLearning outbreak. Additionally, this study also examines the impact of eLearning acceptance on students' academic performance under Media System Dependency Theory. Data was gathered from n=300 participants currently enrolled in n=3 public sector universities in Islamabad, Pakistan. Results from quantitative data analysis indicated moderately significant gender differences concerning eLearning acceptance during the Covid-19. Similarly, findings also revealed a significant positive correlation between female students and conventional learning, male students and eLearning acceptance. Here the inferential statistics also highlighted the positive impacts of eLearning on students' academic performance during Covid-19. The study concludes that gender is moderately hindering eLearning acceptance during the Covid-19 pandemic. Even though eLearning positively influences educational performance, stakeholders need to reconsider the current policies and ensure web-based as equally acceptable for all.

**Key words:** Academic Performance; Covid-19; Conventional learning; Education; eLearning; Gender; Media dependency

# **1. INTRODUCTION**

Education is an important pathway to attain social and economic prosperity. If most individuals are educated, they will be capable of empowering themselves in a better possible way. To further affirm this, Human Capital Theory and Signalling Theory also support the correlation between socioeconomic development and education (1). From this notion, we can also assert education as a basic necessity instead of a commodity. The importance of education is undeniable, whether it is availed from formal or informal means (2). According to (3), education is a basic human strategy to deliver education effectively. These stakeholders also understand that all aspects of one's life regarding social-economic rights are directly or indirectly attributed to education (4). The importance of education can be estimated because Article 13 of the International Covenant on Economic, Social and Cultural Rights also constitutes that all the State Parties are obligated to provide the right of education for all. These states also agree that education will be equally delivered to ensure people's personality building, empowerment and social wellbeing. State Parties further vow that education will enable everyone to equally participate in a free society (5). However, during emergency and conflict situations, the provision of education for all becomes highly questionable. For instance, during the current healthcare emergency (Covid-19) the declaration to close the educational institutions is based on risk-management approach (6). Here the rapid shift from conventional learning to internet-based learning was an only option to sustain the educational activities (7,8) That enables the individuals to empower themselves and strive for the new directions to bring up self-reformation. Especially today, when the world is confronting several changing social and economic trends, education constitutes pathways to overcome the prevailing challenges (9). Here the role of education policymakers and stakeholders is of more significant concern as they design

According to (10), to combat the increasing educational challenges raised by Covid-19, school administrations, local ministries, instructors and students had to be agile towards eLearning adoption. As a result, this transition led to an increased internet dependency for the educational purposes in both developed and developing regions. Likewise, in developing country like Pakistan, educational institutions also converted their conventional learning system into web-based learning (11). As noted by (12), Covid-19 strongly

affected Pakistan's existing educational system. The country is already facing several academic challenges, and Covid-19 also decreased learning opportunities for the students. This shift from traditional to modern learning environment also resulted in learning losses as students' felt unable to cope with ICT integration in education (13). However, several demographical factors are assumed to hinder eLearning acceptance (14). Here the role of gender can be of more significant concern as several previous also witnessed the intervening role of gender regarding eLearning acceptance

(15–17) As noted by (18), gender differences regarding eLearning acceptance moderately exist, yet they are prominent. These differences also exist concerning the sense of duty among male and female students. However, this conclusion needs further investigations (19).

Therefore, by keeping in view the potential gender differences in eLearning acceptance, the current research also examines these discrepancies during the Covid-29 crisis in Pakistan (10,20) The results are based on primary resources with higher relevance and generalizability. Thus, the first section of research will discuss education in broader terms. The second section discussed the relevant literature witnessing the gender differences regarding eLearning acceptance and its overall impacts on students' educational performance. In the third section, the researchers addressed the theory pertinent to provide the study with a strong theoretical background. The fourth section contains the methodology. The fifth section contains data analysis, discussions on results, and conclusions are made accordingly. In this context, the current study involves four primary research questions:

R1: Are there any gender differences regarding eLearning acceptance among male and female students during Covid-19R2: Is there any correlation between female students and conventional learning during Covid-19?

**R3:** Is there any correlation between male students and eLearning during Covid-19?

**R4:** Is there any relationship between students' academic performance during Covid-19?

# 2. LITERATURE REVIEW

#### 2.1 eLearning & Gender Differences:

The shift from the traditional learning environment to web-based learning is equally popular in developed and developing regions. However, some demographical characteristics intervene in eLearning acceptance among individuals (17). Here the role of gender, as mediating factor is of greater prominence as several studies witnessed gender difference concerning eLearning acceptance. Those who consider eLearning as cost-effective, available, accessible and offering ease of use are more likely to adopt it. Also, many consider eLearning a substitute for the conventional learning process (16). Further witnessed by (21), they examined the eLearning acceptance among the industrial sector trainees in South Africa. Data gathered from n= 191 study respondents

indicated a robust significant gender difference regarding eLearning acceptance. Thus, the researcher concluded that eLearning acceptance and integration highly differ among male and female trainees, highlighting the gender difference regarding technology adaption. As noted by (22), we consider eLearning a technology-facilitated communication and educational process. Although both male and female students equally consider it essential, gender differences still exist on a moderate level. Users characterize eLearning human-human communication; these gender differences are prominent in many cases. Further validated by (23), they investigated the technology adaption and perceptions of students in Spain. The researcher utilized a cross-sectional study approach and data gathered from n= 184 students. Results showed a moderate level of gender differences. However, the students also revealed that eLearning integration is not much common in their institutions, which is one of the most notable reasons behind existing gender differences regarding eLearning acceptance. Yet efforts to explore the reasons behind existing gender differences regarding technology adoption are still infinite. Recently, a study conducted by (24) also scrutinized the potential gender differences concerning eLearning acceptance in Spain. However, the researchers selected n=222 faculty members as participants from the University of Salamanca, Madrid. Selected faculty members indicated that their perceptions regarding eLearning application differ on the basis of their gender. Despite respondents' familiarity with eLearning, a majority of them had varying opinion regarding eLearning integration and acceptance in their educational system

**H1:** There are significant gender differences regarding eLearning acceptance among male and female students during Covid-19

#### 2.2 Female Students & Conventional Learning:

Although, previous studies extensively witnessed significant gender differences concerning eLearning adoption. However, an immediate switch from conventional learning to eLearning needs further considerations. By understanding these gender differences, both teachers and educational policymakers will search for the solution to alleviate this intervening role of gender (24). Especially during the current outbreak of Covid-19 pandemic, these gender differences should be further investigated to dig out the existing challenges based on students demographical data (25). As noted by (26), educational systems have widely altered their approaches during the current healthcare crisis. Even though this rapid switch was the need of the day, still many students consider conventional learning better than eLearning. However, it is also notable that eLearning is the future of education, and the students should understand the significance of eLearning as a risk management approach.

Here, (27) cited an example of eLearning adaption among the Tanzanian students. The research investigated the types of potential barriers regarding eLearning acceptance in Tanzanian higher educational institutions. Findings revealed several barriers, halting the eLearning acceptance and adoption among the university students. These barriers may include poor educational infrastructure, lack of eLearning awareness, teachers' resistance, demographical characteristics, etc. However, the role of gender was among the prominent as it was mainly intervening technology acceptance. As female students were more likely to support conventional learning as effective and reliable than the eLearning process.

Moreover, the study conducted by (28) also showed the same results, as the n=269 participants from Liberia exhibited the relevant gender differences. Here both female teachers and students revealed that traditional learning is more acceptable than the eLearning. The researchers concluded that gender is a primary barrier behind eLearning acceptance in Liberia. Yet, developing countries like Pakistan can gain maximum benefit from the eLearning adoption. Although female students consider formal learning as comparatively better, the local educational system can improve eLearning implementation, increasing the likelihood of web-based learning (29).

**H2:** Female students are more likely to adopt conventional learning methods during Covid-19

# 2.3 Male Students & eLearning:

The acceptance and integration of ICT in education widely enhanced the students' learning experiences. Unfortunately, despite eLearning distinct features, gender as a main demographical variable determines eLearning acceptance among students worldwide. For example, Jordanian students consider eLearning an important part of their education. Still, male students are more likely to adopt eLearning than female students (30). Here (19) also witnessed gender discrepancies concerning eLearning acceptance. As noted, male and female students diversely accept and utilize eLearning in their educational journey. Male students are more prone to eLearning than female students who show less interest in ICT in education. Similarly, a study conducted by (31) also validated the perceived gender differences and interest of male students towards eLearning adoption. As the researcher selected individuals from n=137 universities in China. All the respondents indicated Mobile Learning as an important part of their learning experiences. Here, the findings also indicated that male students perceive Mobile Learning as more efficient, effective, and useful than female students.

(32), also investigated any potential gender differences regarding Learning Management System among Korean students. Data gathered from n= 443 university-level students indicated that male students are more likely to prefer eLearning than female students. The results showed the eLearning acceptance among male students in the general Korean educational context. Thus, the researchers concluded that the government should educate all the students concerning the importance of eLearning to accelerate Korea's educational system further. (33) also consider male students

as more accepting and integrating eLearning in their education. As he stated, an increased shift towards eLearning shows male students' dynamic approach to bring modifications in schooling during the Covid-19 outbreak. eLearning acceptance among students also shows a sustainable development of education; however, female students should also take an interest in ICT to avail maximum academic benefits. As the traditional learning system requires a formal classroom, with a professor giving a lecture in a face-to-face communication process, it does not involve any risk management strategy, especially during emergencies. The earlier traditional environment was an essential part of the educational system, but today, the rise of several healthcare challenges has dramatically altered the existing learning system worldwide (Al-fadhli, 2008; Khalid & Ali, 2020).

**H3:** Male students are more likely to adopt eLearning methods during Covid-19





Today, eLearning is widely affecting the students' academic performance. Particularly, during the Covid-19 outbreak, students are relying on ICT to resume their educational activities. Young students rely on different online platforms for their education as institutions are closed, creating several challenges for the local government (36,37) As noted by (38), accepting web-based technology in education enhances learning, modifies collaboration, facilitates communication among teachers and students, and improves students' creative skills. If both teachers and students start considering the positive sides of ICT integration into education, they will realize its true importance and contribution to today's world. To further affirm the role and impact of eLearning in education, (39) scrutinized the eLearning acceptance among teachers of higher education institutions in Pakistan. The researchers selected n=30 university teachers and found that respondents consider eLearning an important part of education and attribute it to an effective crisis management system during the Covid-19. As a result, students are also improving their critical thinking and academic grades.

According to (38), one of the fundamental reason behind a wider eLearning acceptance is it offers ease of access, useful outcomes and greater accessibility. Without these properties, students would not consider eLearning as a part of their educational journey. As a result, they enjoy better learning

opportunities and modified creative skills that ensure brighter prospects in their future lives. One of the fundamental reason for eLearning acceptance and integration is also a modified educational system. Today institutions want more creativity and critical thinking among their students. As these students are ambassadors of their educational institutions, enhancing their performance and learning skills primarily benefits the institution. Here, eLearning's role is essential, as both students and teachers directly correlate eLearning with modified skills and improved academic grades (40). An institution depends on its students to gain sustainable growth, development, name, compatibility, recognition and acceptance in educational arenas. Consequently, they integrate eLearning, which brings out fruitful results as it helps to improve their academic grades and critical thinking capabilities (41).

**H4:** eLearning is positively affecting students' academic performance during Covid-19

# **3. THEORETICAL BACKGROUND:**

Media Dependency Theory, known initially as Media System Dependency Theory, supports the current research's primary propositions. Media System Dependency Theory was proposed by Sandra Ball-Rokeach and Melvin DeFluer during 1970, highlighting media reliance to fulfil specific social and psychological needs (42). According to (43), people intentionally depend upon media for entertainment, education, information and communication purposes. Media System Dependency Theory's primary hypothesis assumes that more a person relies on media; the media will become more critical in his/ her life. As a result, media effects will be more subtle and profound on one's psychosocial life (17.44) Likewise, social media usage and students' dependency also indicates the same phenomenon (45). Especially during the crisis like Covid-19, students are more dependent on web-based technology to gratify their educational and informational needs (46,47). Internet facilitates students' academic activities by providing them ease of access to the information and material they need. Moreover, it also provides them with extra study material and improves their critical thinking, enhancing their academic performance (39,48)

#### **4 RESEARCH METHODOLOGY:**

The current research involves cross-sectional design as it helps to examine the relevant phenomenon in a shorter period with the generalizable results (Taherdoost, 2018; Habes et al., 2020). The data is obtained using structured questionnaires based on a five-point Likert scale having n=23 relevant questions (n=3 demographical, n=20 variables) (51). The scales to measure the proposed gender differences are adopted from the study (17). Similarly, the scale regarding academic performance is adapted from the cross-sectional investigation (Alhumaid et al., 2020). To further affirm the validity and reliability of items in the research tool, the researcher conducted Intercoder Reliability and Bivariate Pearson Correlation Analyses (49). As seen the Cronbach Alpha Value among all the variables ranges from .898 to .908, all the constructs in the research instrument are intensely reliable (52). Furthermore, the Pearson correlation value ranges from .943\*\* to 1.000\*\*\*, which also shows that the research instrument is strongly validated and the results will be generalizable (53). **Table 1** and **Table 2** below summarize the outcome of validity and reliability assessments:

Table 1: Intercoder Reliability Analysis								
S/R	Hypothesis	Cronbach Alpha Value	Correlatio n	Status				
H1	EL>GD	.898	.000	Reliabl e				
H2	FS>CL	.899	.000	Reliabl e				
Н3	MS>EL	.901	.000	Reliabl e				
H4	EL>AP	.908	.000	Reliabl e				

Note: EA is eLearning Adoption, AP is Academic Performance, FS is Female Students, MS is male students, CI is Conventional Learning

Table 2: Bivariate Pearson Correlation Assessment

	EL	FS	MS	AP
EL				
FS	$.985^{**}$			
MS	.985**	$1.000^{**}$		
AP	.950**	.943**	.943**	

Note: EA is eLearning Adoption, AP is Academic Performance, FS is Female Students, MS is male students, CI is Conventional Learning

#### 4.1 Study Universe & Sampling Technique:

The universe of current study constitutes higher education institutions currently working in Pakistan. However, due to certain limitations, the researchers randomly selected a sample of n= 300 students from n= 3 public sector universities in Islamabad (National University of Modern Languages, Allama Iqbal Open University, Quaid-e-Azam University). Here simple random sampling supported the selection process it involved zero percent researchers' own bias and the sample was selected in a favourable manner (54).

#### 4.2 Demographical Data:

Frequency and percentage calculation are the two most preferred approaches to determine how frequently a certain variable's value may occur (55). In this context, the current research also involves frequency and percentage calculation of demographical characteristics. **Table 3** summarizes the results of the frequency calculation. According to the data, n= 151 or 40.3% of respondents were males, and n= 149 or

39.7% were females. Similarly, n=172 or 45.9% of participants were between 18-22 years old, n=85 or 22.7% were from 23-26 years of age, n=23 or 7.6% of respondents were 31 or above, and n=20 (5.3%) individuals were 27-30 years of age. Moreover, n=146 or 38.9% respondents were undergraduate students, n=145 or 38.7% were graduate-level students, and n=9 or 2.4% of participants were post-graduation level students.

 
 Table 3: Frequency Calculation of Demographical Characteristics:

Variable	Construct	f	%
Gender	Male	150	50.0%
	Female	150	50.0%
	18-22	172	45.9%
Age	23-26	85	22.7%
_	27-30	20	5.3%
	31 or Above	23	7.6%
	Undergraduate	146	38.9%
Education	Graduate	145	38.7%
	Postgraduate	9	2.4%

#### 5. STUDY RESULTS & DISCUSSION

Although the participants were free to withdraw from the survey proceedings, the response rate was 100%. In this regard, the n=154 or 41.1% of participants indicated varying perceptions regarding eLearning acceptance and usage among male and female students. Here n=146 or 38.9% also agreed that female students are more likely to rely on conventional learning methods; however, n=153 or 40.8% also indicated that male students prefer eLearning as the most effective learning pathway. Thus., a total of n=147 or 39.2% also agreed that eLearning is a useful tool of sustaining educational activities in crises. These results are consistent with the study conducted by (Arenas-Gaitán et al., 2010), as they also validated the potential gender differences regarding eLearning acceptance in general.

Moreover, n=146 or 38.9% of respondents agreed that they prefer conventional learning even during the Covid-19 outbreak. As according to n=164 or 43/7% of participants believe that traditional learning is better than eLearning. For n=148 or 39.5% of participants, conventional learning is suitable for them as (n = 147 or 39.5%) it provides more effective learning opportunities even during Covid-19 outbreak.

According to (56), eLearning acceptance and integration during Covid-19 facilitate the educational process at all levels. It helps the students stay connected with the instructors and classmates, continue their classes, and get extra study material. Thus, in the current study n=150 or 40.0% of participants indicated that they strongly prefer eLearning during Covid-19 as n=146 or 38.9% consider eLearning as comparatively a better choice than conventional learning. The common perception behind eLearning acceptance during

Covid-19 is that n= 147 or 39.2% think that eLearning suits their study schedule.

Likewise, n=155 or 41.3% of participants agreed that eLearning suits with their schedule. For the respondents (n=147 or 39.2%), eLearning adoption (n=151 or 40.3%) is the best decision to sustain the educational activities, and it is better than the conventional learning patterns. Here n=149 or 39.7% of respondents also expressed that they consider eLearning more reliable and ensure positive impacts on educational activities. The learning also provides several learning and critical thinking ability building to the n=170 or 45.3% of participants.

Furthermore, the impacts of eLearning on academic performance is an inevitable phenomenon. Several studies ( (11,57-59) also affirmed substantial positive impacts of eLearning on students' academic grades. Therefore, in this study n=162 or 43.2% of respondents consider eLearning to improve their academic performance during the Covid-19 pandemic. As for n=162 or 48.9% of them, eLearning helps them develop critical learning and thinking skills. Besides, n=48 or 39.5% also consider eLearning as an influential source of getting extra study material which is leading them (n=147 or 39.2%) to attain improved academic grades

#### 5.1 Analysis of Variances (ANOVA):

Table 4:	Test of Hor	mogeneity of	Variances:
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Variable	Constructs	Levene Statistics	f	Sig n
Gender	Male Female	1361.359 a	3.021	.011
Age	18-22 23-26 27-30 31 or Above	1283 <sup>b</sup>	1.356	.241
Educatio n	Undergraduat e Graduate Postgraduate	1.060 <sup>c</sup>	858.47 9	.000

The current research also involves One-Way Analysis of Variance to scrutinize any potential mean differences regarding demographical differences and eLearning. **Table 4** summarizes the results of the One-Way Analysis of Variance (ANOVA). Results indicated no possible mean differences based on gender ( $p \ge .011$ ) and educational level ( $p \ge .000$ ) of the participants. However, with the  $p \ge .241$ , we found substantial mean differences based on respondents' age level.

#### 5.2 Hypotheses Testing:

To test the first research hypothesis "There are significant gender differences regarding eLearning acceptance among male and female students during Covid-19", the current study involved Independent Sample T-Test. According to (60), Independent Samples t-test helps to examine the mean differences in two sets of independent variables. The increased mean differences indicate an increased significance level. **Table 5** summarizes the results of Independent Sample T-Test. Thus, with the significance level of  $p \ge .061$ , the results revealed moderately significant gender difference regarding eLearning acceptance and integration among the male and female students.

 Table 5: Independent Samples T-Test

Variable	Mean	SD	t	f	Sign
Male	1.57	.527			
Female	1.55	.551	.362	3.543	.061**

#### 5.3 Correlation & Regression Analysis:

According to (61), we prefer applying Simple Linear Regression when there is only one independent variable in a model. Here independent variables are fully controlled by the experimenter, and the test examines the strength of relationships between variables. Thus, Linear Regression in the current research also helped assess the proposed relationship between one independent (EL) and one dependent variable (AP). **Table 6 and Table 7** summarize the results of the Pearson Correlation and Simple Linear Regression Analysis. As visible, all the relationships are strongly validated by our analysis, and there is a strong, positive correlation found in **H2**, **H3** and **H4**. ( $r=1.000^{**}$ , p≥ .000) (r=.919,  $p\ge .000$ ) (B=.115 p≥ .000). Therefore, we affirm that all the study hypotheses are well accepted and validated by inferential statistics.

Table 6:	Pearson	Correlation	Analysis

	<b>Conventional Learning</b>
Female Students	$1.000^{**}$
Sign.	.000
	eLearning
Male Students	.910**
Sign	.000

Table 7: Linear Regression Analysis	ssion Analysis	egression	Reg	Linear	7:	Table	
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S/R	Hypothesi s	f	t	B	<i>p</i> -value
H4	EL>AP	2721.23	4.03	.11	.000**
		6	3	5	*

Note: EA is eLearning Adoption & AP is Academic Performance

According to (10), during the Covid-19 outbreak, the governments are concerned about saving the lives. Here, State Parties' responsibility to provide educational facilities to all is

hampered by the steps taken to counteract the Covid-19 spread (Muedini & Muedini, 2015; Shetty et al., 2020). Nevertheless, the primary efforts to save the lives adversely affected everyday life activities, it greatly hindered the virus transmission process. However, the loss of knowledge acquisition and extra educational stress negatively influenced the young students. Likewise, Covid-19 will also wipe out efforts made during the past few years. Especially in terms of learning and education, all the development in conventional learning is challenged, demanding new and robust techniques to cope with the current challenges (63). The recent research also highlights the eLearning acceptance, integration, and adaption in educational arenas in this context. However, the intervening role of gender in eLearning acceptance is a through-provoking phenomenon. As noted by (64), despite ICT usage and integration is much popular today, advantages cannot be attained if users are not inclined to use eLearning.



Consequently, the gender gap concerning eLearning acceptance, even during the current healthcare crisis is an undisputed matter. Although previous studies also witnessed a decisive mediating role of gender in eLearning acceptance, this potential difference still exists during the Covid-19 outbreak (11,65). Dependency on eLearning to mitigate the educational crisis during Covid-19 is an essential factor highlighting the role of ICT. The fact is male students have always been the dominant users of Internet Technology. They are more likely to adopt technology and apply eLearning as an essential part of their educational journey (66). In the current analysis, Learning acceptance among men and conventional learning adaption among female students demands more efforts to reinforce ICT use in education (17).

As Pakistan is a developing country where technology acceptance and adaption follow a comparatively a gradual process. This gradual process hinders the efforts to sustain educational activities due to lockdown and curfew situation (67). According to (68), switch to eLearning was the only option to cope with the educational challenges during the Covid-19 outbreak. Students have to obligate their educational policies and shift to eLearning to resume their academic journey. If these students aim to keep pace with the briskly changing educational trends, eLearning provides them with greater opportunities and prospects (69,70)

Furthermore, the positive impacts of eLearning on educational performance also highlight the significance of ICT in education (71,72). As observed, eLearning is

significantly influencing students' academic performance  $(p \ge 000)$ . These results are strongly compatible with the study conducted by (39) where the researchers also found positive impacts of eLearning on students' academic performance during Covid-19. One of the primary reasons behind eLearning's positive effects during Covid-19 is the briskly changing role of technology in educational fields. As compared to earlier times, technology is more likely to motivate and allowing students to achieve and accelerate their academic performance even during the Covid-19 pandemic (73). As a result, despite Covid-19 disrupted educational activities, eLearning acceptance and adaption became a vital component of the risk management system (74).

# 5.4 Summary & Conclusion:

This study examined the mediating role of gender in ICT acceptance and eLearning impacts on academic performance during the Covid-19 pandemic. Quantitative data gathered from close-ended questionnaires exhibited moderately significant gender differences regarding eLearning acceptance during Covid-19. It is also notable that the female respondents showed more support for conventional learning, whereas male students primarily supported eLearning to sustain educational activities in Pakistan. Findings highlight gender as an intervening factor; it also demands educating the students regarding the benefits of eLearning.

# **Recommendations & Limitations:**

Although this study involves assessing gender as an intervening factor during Covid19, there are some limitations as well. First, the researchers only selected gender as the mediating variables, when there could be other more factors intervening he eLearning acceptance among students. Another limitation is using a simple linear regression, where the use of *Structural Equation Modelling* could have further validated the outcomes. However, the current study also recommends more investigations on other demographical factors regarding eLearning acceptance, especially during the Covid-19 outbreak. As such studies will address the potential intervening factors and highlight the policy-driven outcomes for the educational policymakers and stakeholders in Pakistan.

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