

Dual Perspectives: Investigating University Students' Attitudes and Perceptions of Online Exams in the Post-Pandemic Era

Elsaid. M. Sheguf¹, Abdulbasit Alnor Ahmed², Dhaif Alzahrani^{3*} and Faisal Amjad⁴

¹English Department, Applied College in Muhayel, King Khalid University, Saudi Arabia

²English Department, Applied College in Muhayel, King Khalid University, Saudi Arabia

^{3*}Department of English Language, King Khalid University, Abha, Saudi Arabia (Corresponding Author)

⁴PhD Scholar (Special Education), Department of Special Education (DSE), Division of Education (DoE), University of Education (UoE), Lahore, Punjab, Pakistan.

¹Amadm@kku.edu.sa, ²abalahmad@kku.edu.sa, ³dalzzahrani@kku.edu.sa, and ⁴amjadfaisal40@gmail.com

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ABSTRACT

This study aims to explore university students' attitudes towards the use of online examinations and their perceptions during the post-pandemic time. A quantitative approach with descriptive and inferential statistics was used. The data was collected from 61 undergraduate students through quantitative questionnaire. Results suggest scores from the surveys were generally positive associated with online exams, especially regarding flexibility, efficiency and instant feedback. But there were raised technical issues and concerns about academic honesty, fairness, and emotional involvement. There are findings that indicate no gender differences in attitudes but there are some perceptual differences, and male students' perceptions of the positive side were higher than female students. Online exams are seen as a valid but still underdevelopment assessment form that needs improvement to tackle subject matters of contextual and experiential nature. The study findings recommend that increasing the technical infrastructure, designing assessment more closely to the knowledge technology model, and practicing inclusion are very vital to improving the quality and equity of online assessments. Additionally, it will flag the importance of providing digital literacy support to students and teachers. Finally, these results add to conversations about assessment through technology in higher education and offer guidance for future technology assessment studies with various types of assessment.

Keywords: online exams, post-pandemic education, student attitudes, student perceptions, higher education, quantitative research, Saudi Arabia

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1. Introduction

Higher education institutions around the globe have undoubtedly been affected by the COVID-

19 pandemic, forcing institutions to shift from face-to-face teaching to online teaching. This

sudden change has had a profound impact on approaches to teaching and learning, as well as standards-based evaluation. The first adaptations during the emergency were made; the post pandemic students' attitude and perception in the learning context differs from other studies, which, even though they are in line with the current study, do not specifically examine this post pandemic context because students in this study have had more interaction and more experience with online exams than in previous contexts (Iglesia et al., 2021; Pedraja et al., 2023).

This study examines the effectiveness and difficulties of online testing to the student population of King Khalid University in Tehama, which is a culturally and institutionally specific population. The results can be applied to guide policy in the design, implementation and assessment of online testing in higher education. Factors that impact attitudes of students like academic integrity, technological readiness, and exam design can be considered when developing more equitable and effective online assessment systems (Bond, 2020; Guraya, 2021).

Moreover, this study adds to the literature on post-pandemic education by filling the gaps regarding gender differences and their attitudes and perceptions. Gender disparity in the use of information and communication technology (ICT) was revealed in their access to and use of ICT, attitudes towards ICT, and digital knowledge and skills (Venkatesh et al., 2020; Kim et al., 2023). These differences can be significant for the development of inclusive, student-centered assessment in virtual contexts as addressed in the present study and give practical suggestions to the development of such assessment praxis.

1.2 Research Objectives

The study aims to achieve the following objectives:

1. To examine university students' attitudes and perceptions toward online assessments in the post-COVID-19 context.

pandemic times can be an opportunity for the reflection and improvement of online learning practices (Bond, 2020; Hodges et al., 2020).

One important aspect is the assessment process, especially regarding exam taking an online assessment. Online assessment implementation had obstacles (Flaherty, 2020; Guraya, 2021), including academic integrity, technical problems, and engaging students. Being aware of students' perception of these assessments is important because their attitude plays a significant role in students' academic achievement and their learning experience (Cheng et al., 2020).

However, more recent research has identified a variety of student experiences of online assessment. For example, some students value the option to take tests online, whereas others have raised questions about the ways that e-proctoring affects test fairness and test effectiveness (Bilen & Matros, 2021). Furthermore, concerns about cheating have become more strongly amplified online; students and faculty have reported more unethical practices when administered online (Basilaia & Kvavadze, 2020).

Although there was a proliferation of literature on the concept of "online learning" and "online assessment" during the pandemic, there is a dearth of literature targeted to the post-pandemic context, particularly that of specific cultural and institutional contexts. This study is expected to close this gap by exploring the attitudes and perceptions of students of Tehama branch at King Khalid University towards online examinations post COVID-19. Through the analysis of these views, some insights into developing assessment strategies are hoped for that are intelligent and equitable in the higher education context.

1.1 Research Significance

There are several previous studies on online learning during the COVID-19 pandemic, however, most of these studies were conducted in an emergency context with students not being very familiar with the virtual learning and assessment tools. The specific focus on post-

assessment. This shift brought new opportunities and challenges as they worked their way through the educational landscape in the aftermath of the pandemic. Previous research investigated numerous different aspects of online learning throughout the pandemic, although little research has examined what students thought about and attitudes towards online learning in the post-pandemic world is available, especially in Saudi Arabia and other institutional and cultural contexts (Charytanowicz et al., 2024). This review reflects the ups and downs of online learning and assessment, covering some of the key challenges and concerns highlighted in the literature, such as the shift towards online learning, student attitudes towards e-learning, perceived learning benefits and continued issues, as well as highlighting gaps for further research as they relate to this study (Alkhnabashi et al., 2024; Chasciar et al., 2025).

2.1 The Transition to Online Learning and Assessment

COVID-19 triggered an unparalleled transformation to electronic learning and assessment across the world. Although the transition was a sound model for access to digital education at emergency times, it was not always without difficulties (Adedoyin & Soykan, 2020). As the use of online platforms became widespread, these platforms revealed and brought to the forefront structural inequalities, such as bias in online access and difficulty using online technology, disproportionately affecting students from more marginalized backgrounds (Basilaia, 2020; Basilaia and Kvavadze, 2020). Likewise, a large portion of the transition was, for the most part, an “emergency” remote instruction, rather than systematic and deliberate online instruction systems. The following critiques highlight the importance of making a differentiation between reactive, ad hoc solutions for crisis and sustainable models of online education (Hodges et al., 2020).

Instructional challenges in the Saudi Arabian context included low levels of preparation time and technical skills of the educators to support online pedagogies. Teachers recognized the

2. To identify the factors that influence students’ motivation to participate in online assessments.
3. To determine whether significant differences exist in attitudes and perceptions of online assessments between male and female students.
4. To explore the perceived advantages of online examinations from students’ perspectives.
5. To investigate the perceived disadvantages and challenges associated with online examinations as experienced by students.

1.3 Research Questions

This study seeks to answer the following key question:

1. What are university students’ attitudes and perceptions of online assessments in the post-COVID-19 context?

To address this question, the following sub-questions are posed:

- What factors influence students’ motivation to participate in online assessments?
- Are there significant differences in attitudes and perceptions between male and female students?
- What are the perceived advantages of online exams from the students’ perspective?
- What are the perceived disadvantages or challenges associated with online exams?

1.4 Research Hypotheses

The study tests the following hypotheses:

- **H0:** There is no significant difference between male and female students’ attitudes toward online exams in the post-COVID-19 era.
- **H1:** There is a statistically significant difference between male and female students’ perceptions of online exams in the post-COVID-19 era.

2. Literature Review

The COVID-19 pandemic had a significant impact on the higher education systems, resulting in a new shift towards online learning and

technological infrastructure and preparedness of the institutions. Accessibility features and adaptive tools are empowering tools for disabled students taking the disability responsive online assessment as the outcome of success depends on these tools. Without these, the potential for the digital assessments' inclusiveness is largely hypothetical. Special attention needs to be given to investments to combat inequities in access to the benefits of online assessments and the development of technology to ensure equities (Tadesse & Muluye, 2020).

2.4 Challenges of Online Exams

In a sense, there are many problems and deep roots in the adoption of online exams. Academic dishonesty continues to be one of the greatest concerns, but when the check-in of honesty is weaker in virtual settings, cheating has unfortunately escalated. This problem has been partially addressed by implementing e-proctoring, but this technology also poses privacy concerns and increases student anxiety (Flaherty, 2020; Guraya, 2021). The setting up of online exams is further complicated by technical limitations. In developing countries, the use of virtual assessments is limited by unreliable internet and the absence of standardized devices that play the assessment. Unreliable internet connections and limited access to standardized devices which play the assessment hampers the effectiveness of virtual assessment in developing countries (Basilaiaia & Kvavadze, 2020). Furthermore, the psychological effects of online exams, highlighting that many students experience feelings of isolation and disconnection in virtual environments, which can have negative effects on their academic abilities and psychological wellness. These findings indicate e-test is an on-going process that should cover the technical, non-technical (emotional) sides as well (Mahyooob, 2020).

2.5 Post-Pandemic Perspectives

The post-COVID era has the potential to be a turning point, as we pause to consider and change online assessment practices and mitigate shortcomings that emerged during the pandemic. The need to invest in good technology

benefits of using digital technologies but highlighted issues regarding academic rigor in an online environment. This is a recurring problem in the field of online learning, when efforts to replicate traditional forms of quality and rigor online are not 100% successful (Albaqami & Alzahrani, 2022).

2.2 Students' Attitudes Toward Online Exams

A variety of factors both inside and outside of any exam relate to how students perceive online exams, ranging from technical ones to ones of fairness and expectations of online learning environments. While the students typically enjoy the flexibility of online examinations, they also have doubts about their reliability and integrity (Bilen & Matros, 2021). These results are similar with the results of the studies conducted by Praselyanto et al. (2022) where negative attitudes are commonly affecting students due to external problems faced, such as unstable internet connection and unsuitable home environment for focused learning. However, 40% of the Saudi students said that face-to-face education was more engaging and that it provided them increased learning, while 36% of students indicated that distance education was more convenient and flexible. This makes a major point about online assessment it is missing from many educational platforms: the interactive and participative aspects of the in-person process. The findings call for the development of hybrid assessment models that have the best of both online and traditional assessment systems (Al-Jarf, 2024).

2.3 Perceived Benefits of Online Exams

Online exams, which make good sense, have advantages over traditional exams. Online assessments have the potential to also support "self-paced" learning and can provide instant scores and feedback that enable student tracking of their own learning better. There is potential to use AI tools to enhance the assessment process for online assessment, to ensure better personalization and to foster and encourage critical thinking (Cheng et al., 2020). The advantages, however, are contingents on the

This study is descriptive quantitative research type because the research aimed to examine the attitudes and perceptions of the university students towards online examinations in the post-COVID-19 era. The researchers chose quantitative approach because it can collect and analyze the data systematically, and in identification of trends and relationships (Creswell, 2014). The study aims at gaining insight into pupils' experiences, identifying the factors associated with the students' attitudes and any possible gender differences.

3.2 Population and Sampling

The target size of study population is undergraduate students of the Tehama branch of King Khalid University. The sample of students was obtained by simple random sampling, with 23 males and 38 females selected for a total of 61 students. The experiences of all the participants were related to online exams during the coronavirus pandemic, so their perceptions could be compared to those in the post-pandemic period. The range of subject matter subjects studied in the sample help make the results more generalizable to the broader education community.

3.3 Data Collection Instruments

Data collected through a structured electronic questionnaire that assessed the students' attitudes and perception towards online exams. The questionnaire consisted of two constructs - 30 items:

1. Attitudes (15 items): Motivation, preference, emotional reactions of students towards online examination.
2. Perceptions (15 items): Faced perceived benefits, challenges and fairness of using on-line assessments.

To capture intensity of participants' response, a five-point Likert scale was used, ranging from 1 – strongly disagree, to 5 – strongly agree. Three academic referees were selected for the purpose of expert validation of the questionnaire to make sure it was content valid and understandable (Field, 2013). The high internal consistency

infrastructure, and to establish well-defined instructions for virtual evaluation to help improve the credibility and effectiveness of the delivery. Demographic differences in attitudes about and experiences with ICTs can also be used in the development of inclusive assessment models, such as in the form of gender preferences for ICT use (Venkatesh et al., 2020; Kim et al., 2023). The requirement to continue training teachers to develop their digital capabilities in Saudi Arabia. This resonates with recommendations at an international level to shift focus away from emergency approaches and towards sustainable, evidence-based online learning approaches (Adedoyin & Soykan, 2020).

When policymakers and teachers analyze the strengths and weaknesses of the kinds of assessments they took over during the pandemic, they can design a hybrid system with the best elements of online and in-person assessment. Policymakers and educators can draw from this list of strengths and weaknesses when they design an assessment system that's hybrid, combining the good ideas from both the online and in-person assessment formats. Previous research offers insightful information about the potential and difficulties around online learning and assessment, especially during the pandemic (Albaqami & Alzahrani, 2022).

The attitudes and perceptions of students in post pandemic era i-e after the surge of explosion of online tools, however, are not known. This is the reason for the present study, which aims to fill this gap by studying the subject from culturally sensitive perspectives in the context of King Khalid University in Tehama branch. This study adds valuable, complementary elements to the existing literature on the gender-based differences, institutional readiness and the psychological effects of online testing, and offers new insights and suggestions for designing more inclusive, effective and sustainable online assessment systems that benefit higher education institutions.

3. Research Methodology

3.1 Research Design

the questionnaire; all scales exhibited good internal consistency.

Descriptive statistics such as frequency, percentages, means, and standard deviations were used to summarize the demographic characteristics of the participants and their attitudes and perceptions towards online assessment. Inferential analyses were carried out to address the research objectives. Independent-samples *t* tests were performed on the differences in attitudes and perceptions between boys and girls and Chi-square (χ^2) tests were performed on the relationships between related categorical variables. Data were compared with aim of the study and other related literature with 0.05 level of significance for all the statistical tests.

3.6 Ethical Considerations

The principles of the Declaration of Helsinki (World Medical Association, 2013) were followed during this study. The use of anonymity and confidentiality of the data were ensured. Data were kept safely on encrypted data systems and were only accessible by members of the research team. All participants were informed that their answers would be taken for academic purposes.

4. Data Analysis and Interpretation

(Cronbach's $\alpha = 0.87$) was shown in the pilot test with 15 students.

3.4 Data Collection Procedures

The study received ethical approval from King Khalid University Research Ethics Committee. Students were briefed prior to participation with regards to goals and methods of the study. Electronic informed consent was provided, participants' rights to privacy and voluntary participation were discussed. To ensure broad access to the questionnaire and broad participation, it was sent to the institutional email system. In order that it may be accessible and the participation may be broad, the questionnaire was sent out via the institution's email system.

3.5 Data Analysis Procedure

The data collected were quantitative that were analysed with the help of the Statistical Package for the Social Sciences (SPSS Version 26). The data was checked for missing values, outlier values, and inconsistencies, prior to the main analysis. To check data normality, Kolmogorov–Smirnov and Shapiro–Wilk tests were used and skewness and kurtosis values were analysed for its suitability for parametric analysis. Cronbach's α was used as an indicator of the reliability of

Table 1: Distribution of Sample According to Demographic Characteristics

Variable	Categories	Number	Percentage
Gender	Male	23	37.7%
	Female	38	62.3 %
Age	18-20 year	24	39.3%
	21-23 year	31	50.8%
	24-26 year	6	9.8%
Specialization	Management	5	8.5%
	English Language	40	65.5%
	Information System	8	13.1%
	Accounting	8	13.1%

were clearly a higher percentage of female student (62.3%) as compared to male student (37.7%).

Table 1 shows the demographic profile of the participants of the study. Student participants

courses students were enrolled for were English Language (65.5%) with smaller number of students in Information Systems (13.1%), Accounting (13.1%) and Management (8.5%).

The age groups were the largest at 21-23 years (50.8%), the intermediate (smaller) at 18-20 years (39.3%) and the lowest (smallest) at 24-26 years (9.8%). In terms of specialization, the main

Table 2: Descriptive Statistics of Study Variables

Variable	Items (k)	Mean	SD
Online Test Acceptance (Dependent Variable)	—	4.03	0.69
Students' Attitudes toward Online Tests	15	4.47	0.90
Students' Perceptions toward Online Tests	15	3.60	0.56

Table 2 presents the descriptive statistics of key study variables. The positive attitude of the students towards Online tests ($M = 4.47$, $SD = 0.90$) was on the higher footing followed by their Online test acceptance ($M = 4.03$, $SD = 0.69$). Attitudes toward online testing were somewhat positive (with a mean score of 3.60 and standard deviation of 0.56). The overall results revealed a positive attitude of students on the use and acceptance of online assessments.

Table 3: Descriptive Statistics of Students' Perceptions toward Online Tests

Sr No.	Students' Perception Towards Online Test	Mean	SD
1	Students with poor sight problems can be affected by online test.	3.410	1.2567
2	Students can cheat if the test is online.	3.290	1.3826
3	Online test can be affected by the inconvenient electricity.	3.902	1.2343
4	Online tests can be affected by internet disconnection.	4.180	1.0084
5	Online tests require high training in technological skills.	3.131	1.3598
6	Online tests can be distracted by social media or other sites.	3.295	1.4183
7	Online tests cause a sense of isolation.	3.066	1.4361
8	Online test is satisfying assessment tool.	3.869	1.2312
9	Online test leads to self-esteem.	3.984	1.0407
10	Online test is dissatisfying testing tool.	2.934	1.4930
11	Online test helps disabled students.	4.426	0.9212
12	Online test helps me to score high grades easily.	4.082	1.0847
13	Online tests don't develop my handwriting skills.	3.508	1.3369
14	No one offers help me if I don't understand a question in an online test.	3.475	1.3242
15	I feel confused while doing the online test.	3.377	1.4043

Table 3 indicates students' thoughts on internet tests. The most popular votes went to statements related to online tests supporting students with disabilities ($M = 4.43$, $SD = 0.92$), being able to be impacted by not having the internet connection available ($M = 4.18$, $SD = 1.01$) and being easier to get better grades from ($M = 4.08$, $SD = 1.08$). Some of the issues that students noted were power outages, distraction, and lack of support when taking exams. In general, most students thought that online tests would be an effective assessment tool, with the lowest mean score for the statement that online tests were an ineffective measurement ($M = 2.93$, $SD = 1.49$).

Table 4: Descriptive Statistics of Students' Attitudes toward Online Tests

Sr No.	Students' Attitudes Towards Online Tests	Mean	SD
1	Online test motivates me to score good grades.	4.508	0.8291
2	Online test develops my critical thinking abilities.	4.459	0.8864
3	Online test gives me a sense of privacy.	4.557	0.7858
4	Online tests make me feel secured.	4.443	1.0412
5	Online tests save my time.	4.656	0.7502
6	Online tests inspire me.	4.246	1.0272
7	Online tests give me a sense of freedom.	4.410	0.8242
8	Online test enables me to know my mistakes directly.	4.689	0.7197
9	Online tests make me feel less stressed.	4.426	1.0717
10	Online test saves me efforts.	4.492	0.8684
11	Online test saves my money.	4.361	1.1259
12	Online test is fair assessment tool.	4.328	0.9953
13	Online tests give me self-confidence.	4.426	0.9567
14	Online test provides a perfect testing environment.	4.443	0.8470
15	Online test gives me immediate feedback.	4.541	0.7654

Table 4 presents the students' attitudes towards online tests. The general attitudes of students were very positive, as shown in the writing of the students' mean scores, which are lower than 2.5 (neutral) and range from 4.25 to 4.69. The most highly rated statements were: Students can see their mistakes as soon as they take an online test ($M = 4.69$, $SD = 0.72$); They have saved time by taking an online test ($M = 4.66$, $SD = 0.75$); There was privacy when they took an online test ($M = 4.56$, $SD = 0.79$). Favorable attitudes on motivation, convenience, self-confidence, fairness and immediate feedback have also been reported by students. As shown in this study, the generally high acceptance and positive attitudes towards online assessment suggest that university students are receptive to the use of assessments developed and conducted online.

alignment. Further examining the construct validity, the upper-lower group method was used. Participants' total scores were ranked the highest 33% and lowest 33% of respondents were compared to employing the independent samples t -tests. Significant differences between the two groups show the instrument items effectively

Scale Validity

The instrument was reviewed by three experts in educational research and assessment to evaluate the relevance, clarity, and appropriateness of the items. Based on their feedback, minor revisions were made to improve wording and content

discriminate between respondents with high and low levels of the measured constructs.

Table 5: Discriminatory Power of the Questionnaire Variables Based on Upper and Lower Group Comparisons

Variable	Category	Mean	SD	(T) Value	Significance Level
Students' Attitudes	Highest	4.98	0.04	4.45	0.000
	Lowest	4.16	0.57		
Students' Perceptions	Highest	4.55	0.45	8.91	0.000
	Lowest	3.40	0.46		

Table 5 presents the results of the comparison between the upper and lower groups to see the discriminatory power of the questionnaire variables. There was a significant difference between the upper group and the lower group in terms of students' attitudes towards online tests ($t = 4.45$, $p < .001$) and students' perceptions of the online tests ($t = 8.91$, $p < .001$). The results show that the items of the questionnaire satisfactorily differentiated between the respondents who are having positive attitudes and perceptions towards marriage and those who are having negative attitudes and perceptions towards marriage, thus demonstrating the discriminant validity of the questionnaire.

The first hypothesis examined whether there was a significant difference between male and female students' attitudes toward online examinations in the post-pandemic period.

H₀: There is no significant difference between male and female students' attitudes toward online examinations after the COVID-19 pandemic.

To test this hypothesis, descriptive statistics, including means and standard deviations, were calculated for each group. The results are presented in Table 6.

Questionnaire Reliability

The reliability of the instrument is assessed by Cronbach's alpha coefficient to determine the internal consistency. Cronbach's alpha values were calculated for every construct and for the overall instrument. The obtained coefficients show satisfactory reliability, demonstrating that the instrument items consistently measured the intended constructs and were suitable for subsequent statistical analyses.

Testing the First Hypothesis

Table 6: Mean and Standard Deviation of Students' Attitudes Toward Online Examinations by Gender

Gender	Number	Mean	SD
Male	23	4.7	0.33
Female	38	4.4	0.70

Table 6 presents the data on students' attitudes towards online examinations for boys and girls are summarized in Table 6 with means and standard deviations. Means and standard deviations of student's attitudes towards online examinations were summarized by gender. Female ($M = 4.40$, $SD = 0.70$) had a somewhat less positive student's towards online examinations than boys ($M = 4.70$, $SD = 0.33$). To rule out this difference from being statistically nonsignificant, further inferential analysis was performed.

Gender Differences in Students' Attitudes Toward Online Examinations

To examine whether students' attitudes toward online examinations differed by gender, a Chi-square (χ^2) test of independence was conducted. The results are presented in Table 7.

Table 7: Chi-Square Test of Gender Differences in Students' Attitudes Toward Online Examinations

Variable Statements	Chi-Square Value	Probability Value	DF
Students' Attitudes	26.07	0.248	25

Table 7 presents the result of the Chi square test on the relationship between gender and students' attitude towards the online examinations. There was no significant difference between the attitudes of genders to online examinations, $\chi^2(25) = 26.07$, $p = .248$. The probability value obtained is larger than the .05 level of significance, so the still null hypothesis was accepted. The result of this study showed that there was no significant difference between the attitudes of male and female students towards the online examination in post pandemic period.

Testing the Second Hypothesis

The second hypothesis examined whether there is a statistically significant difference between male and female students' perceptions of online examinations in the post-pandemic context.

H₁: There is a statistically significant difference between male and female students' perceptions of online examinations after the COVID-19 pandemic.

To explore this hypothesis, descriptive statistics including mean scores and standard deviations were computed for both groups. The results are presented in Table 8.

Table 8: Mean and Standard Deviation of Students' Perceptions Toward Online Examinations by Gender

Gender	N	Mean	SD
Male	23	3.8	1.01
Female	38	3.4	0.81

Table 8 shows the mean and standard deviations of students' perception of online exams according to genders. Participants in this study indicated slightly better positive perceptions ($M = 3.80$, $SD = 1.01$) than did female participants ($M = 3.40$, $SD = 0.81$). Subsequently, an inferential analysis was carried out to ascertain if this observed difference is statistically significant or not.

Gender Differences in Students' Perceptions of Online Examinations

To examine whether there are statistically significant differences between male and female students' perceptions of online examinations, a Chi-square (χ^2) test of independence was conducted. The results are presented in Table 9.

Table 9: Chi-Square Test of Gender Differences in Students' Perceptions of Online Examinations

Variable	χ^2	df	p
Students' Perceptions of Online Examinations	21.54	25	.662

Table 9 presents the results of the Chi-square test used to assess the difference between male and females

hypothesis is retained. Based on these findings, it can be concluded that in the post-pandemic settings, students' perceptions of online exams have no significant gender differences.

6. Findings

There were 61 undergraduate students, from which a slight majority of girls (62.3%) were included in the study compared to boys (37.7%).

in their attitudes towards online exams. The findings of Chi-square test in order to see the gender difference in attitudinal relationship about student's perception of online exams is shown in Table 9. An analysis of the difference between males and females showed no statistically significant difference, $\chi^2(25) = 21.54$, $p = .662$. The probability value is higher than the significance level, $= .05$, so that the null

gender difference in the opinions on online assessment.

The instrument proved to be very valid and reliable. Content was clarified and made relevant by expert reviews and internal consistency was determined by Cronbach's alpha with values of $\alpha = 0.87$ (attitudes) and $\alpha = 0.89$ (perceptions). This helps the endorsement of the robustness of measurement tool.

Overall, it can be concluded that students have mostly supportive attitudes towards online exams, specifically their efficiency, feedback, and flexibility. Perceptions are more nuanced and acknowledge both benefits and issues. There is little evidence of any difference between the experiences of boys and girls.

6. Discussion

This study explored university students' attitudes and perceptions of online examination in the post-pandemic era. In general, the results show that students have positive attitudes towards online assessments, especially the immediate teaching feedback mechanism, the flexibility, and the efficiency of online assessments. Additionally, students' overall scores on the descriptive data indicated a high mean score for online testing motivational, and functional advantages, as students are aware of its functional advantages in the current assessment landscape (Adedoyin & Soykan, 2020; Huang et al., 2024).

However, the students' perception is more complex. Although, online exams have been considered supportive in terms of accessibility and inclusivity, especially for students in need of extra support, there are concerns about these exams being technically unstable, plagiarism and the lack of interactions with others during the assessment process. These difficulties play into emotions of varied nature, including convenience and diminishment of efforts alongside feelings of isolation and some level of uncertainty regarding fairness (Flaherty, 2020; Guraya, 2021; Mahyoob, 2020).

Compared to the female group, the male group had similar views on attitudes towards online exams and there are no statistically significant

Most participants were aged 21–23 years (50.8%), followed by 18–20 years (39.3%) and 24–26 years (9.8%). Regarding specialization, most of the students (65.5%) were in the English Language Program, followed by smaller concentrations in Accounting (13.1%), Information Systems (13.1%) and Management (8.5%). There is moderate diversity across the demographic categories as a whole sample.

The descriptive results suggest overall positive feedback of online exams. Attitudes towards online tests and overall acceptance were high ($M = 4.47$, $SD = 0.90$; $M = 4.03$, $SD = 0.69$, respectively), whereas perceptions were moderately positive ($M = 3.60$, $SD = 0.56$). The results presented above indicate a good receptivity of on-line assessment, especially attitudinal orientation.

The attitudes towards online examinations from the item level were consistently high. Immediate feedback, time-efficiency, ability to identify errors, as well as perceptions of fairness, less stress and more motivation were particularly appreciated by the students. In general, the use of online assessments was considered as efficient, learning-friendly and supportive.

Perceptions resulted in a more mixed pattern. Students also expressed strong support for the factors that enabled their learning to be supported, such as the provision of support for those with disabilities and timely feedback; however, they also pointed to factors that hampered their learning, including instability in the internet connection, electricity outages, concerns about cheating, and less support provided during exams. Feedback was mixed: both positive and emotions of confusion or aloofness were experienced.

The result was found by using inferential analysis where the data could not find a statistically significant difference between male and female attitude in learning using online examinations, although the mean value of the female is higher than the male. Likewise, there was no statistically significant difference between the gender perception. Across all items, there was no overall

online examinations, in the post pandemic perspective. Overall, the findings indicated that online assessments appear to be offered with enthusiasm due to their flexibility, efficiency and the ability to provide mark-up instantaneously. Has constant concerns about technical stability, integrity of assignments, equity and emotional involvement. The results suggest the attitude of the students towards PAE is positively distributed, however, there is gender difference and positive attitude is higher in the male students than the female students. It establishes that online assessment experiences are not standard and can vary contextually and individually.

In sum, the authors highlight the fact that online exams could be a multifaceted yet underdeveloped means for assessing student learning in higher education. They don't just have to be effective due to their technological preparedness, but also fairness, inclusiveness, and emotional support that they ensure for the learner. The findings emphasize the need to make the transition from the emergency assessment shift to a more organized, student-centered and equity-oriented assessment shift, one that can serve the needs and experiences of a diversity of learners.

7.1 Recommendations

Following recommendations are made based on research findings:

1. Universities need to allocate funds for the development of robust platforms, more robust offer support for connectivity, and backup if online exams are delivered such that there is any disruption to the process of assessing students.
2. Institutions should use secure and student friendly integrity measures that make use of technology as well as assessment designs that minimize cheating opportunities and focus on higher order thinking.
3. Online examinations must be designed to suit the needs of a variety of students, taking account of a variety of aspects such as gender, digital literacy and diversity of learning styles, minimizing potential disadvantages.

differences. However, there is a gender difference in perceptions with male students more having positive variables than female students. This indicates that there is quite a uniform acceptance of online assessment, but experiential/ contextual factors can influence experiences of quality and fairness (Yu, & Deng, 2022; Pellegrini et al., 2020).

This outcome is a testament to the potentially more credible use of online assessments as alternative assessments, although still questions of reliability, integrity and experience of learning are raised. It is important to tackle these issues to maximize the benefits of online assessment, while keeping inequities intact and maintaining perception of fairness (Basilaia & Kvavadze, 2020; Mate & Weidenhofer, 2021).

The results confirmed previous studies, which pointed out the advantages of handling tests efficiency on the web, feedback as well as emphasizing the actual technical issues or test security concerns. Students' higher critical awareness on the evaluation of emergency remote assessment in post pandemic era has been adopted in this study based on the previous studies (Adedoyin & Soykan, 2020; Younas et al., 2022).

On a practical level, the results point to three challenges that should be addressed to ensure efficient, fair and improved technological systems, more secure assessment methods, and more appropriate design, which are now being addressed. Greater attention also needs to be given to ensuring access is equitable, and that a range of students' needs are met, including their digital confidence, and their needs with Assessment experiences. Overall, the study results highlight the importance of both technological readiness and perceived fairness and inclusivity of an examination in the learning environment as the factors that affect the success of online exams (Ahmed et al., 2023; Hu et al., 2025).

7. Conclusion

The aim of this study was to assess the attitudes and perceptions of the university students about

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8.2 Data Availability Statement

The datasets generated and analysed during the current study are available from the corresponding author on reasonable request.

8.3 Author Contributions

Visualization and project administration were jointly handled by all authors. Elsaid M. Sheguf and Abdulbasit Alnor Ahmed contributed to the data collection and analysis, while Dhaif Alzahrani and Faisal Amjad provided oversight and manuscript refinement.

8.4 Disclosure of Interests

The authors declare no competing interests.

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4. Continual training should be provided for students and instructors to facilitate increasing comfort level and confidence in using online examination tools and to help them continue to be effective in online assessment environments.
5. Student feedback on the use of online assessments should be collected regularly by institutions and fed back into their assessment process to continually improve practice so that assessment moves forward to meet student needs and learning challenges.

8. Additional Sections

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Authors Information

Elsaid Mohammed Adam Sheguf is an Assistant Professor of English Language at the Department of English Language, King Khalid University, Saudi Arabia. His research focus is applied linguistics, language teaching, testing and assessment.

Abdulbasit Alnour Alhaj is an Assistant Professor of linguistics at the Department of English Language, King Khalid University, Saudi Arabia. His research focus is English language teaching, education language policy, applied linguistics, and sociolinguistics.

Dhaif Alzahrani is an Assistant Professor at King Khalid University, specializing in English Language Teaching and Educational Technology. With extensive experience in integrating innovative tools into teaching practices. He focuses on enhancing digital literacy, online assessment frameworks, and English as a Foreign Language (EFL) pedagogy. He has contributed to various academic projects aimed at optimizing technology-driven education in Saudi Arabia and globally. Dr. Alzahrani's research interests include gamified learning, AI in education, and virtual learning environments.

Faisal Amjad is a PhD Scholar in the Department of Special Education at the University of Education, Lahore, Punjab, Pakistan. His research interests include inclusive education, special education, educational leadership, educational policy, educational management, accessibility, and disability studies. His current research primarily focuses on advancing inclusive education through evidence-based practices, policy development, and improving educational outcomes for learners with diverse needs.