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Transforming Traditional HR Practices through Digitalization in Academic Boards: The Ziauddin University Examination Board Experience

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Abstract

The research aims to examine how digital revolution is affecting how academic boards handle human resources (HR). This research is mostly on the Ziauddin University Examination Board (ZUEB) in Pakistan. This research looks at how technology alters things like managing performance, communicating to people, and educating workers in the real world. It happens when schools and universities are beginning to employ more technology. The research looks at how individuals utilize digital technologies and how they change the way examinations are given and services are supplied. The research adopted quantitative approach and is based on survey responses from 344 individuals, including students, teachers, and HR professionals. The research is based on a conceptual framework that views developing the corporate culture as a moderator and digital transformation activities as a mediator. There are still a lot of people who aren't ready for digital, notably support personnel and those who live in remote regions. The findings do reveal, nevertheless, that test services have improved in several aspects when it comes to quality and impartiality. The findings reveal that training, backing from legislators, and a culture that is receptive to new ideas are all extremely essential. The report presents useful tips to school administrators and lawmakers who wish to utilize technology to improve the way schools assess kids more modern. These ideas come from looking at the pros and cons of digital revolution in academic human resources.

Keywords: Digital transformation, Human resource practices, Performance Management, Digital communication, Organizational culture.

INTRODUCTION

It is necessary for businesses to reevaluate their conventional business models and procedures in order to effectively undergo digital transformation. This revolution is defined by the incorporation of digital technology into all aspects of business, which ultimately results in changes to the manner in which businesses generate value for their consumers (Shaikh & Shar 2023). In the context of digital transformation, organizational change often entails the reconfiguration of business processes, the enhancement of organizational agility, and the development of new competencies in order to keep up with the ever-changing needs of the market. According to the findings of research, businesses that are experiencing digital transformation frequently encounter issues that are associated with employee resistance, shortages in capabilities, and the requirement for new

leadership techniques (Ahmeda et al., 2024). In addition, the culture of a company is a significant factor in influencing the success of transformational projects related to digital transformation.

In order to overcome reluctance to change and to cultivate an atmosphere that is suitable to digitalization, it is vital to have a digital culture that encourages creativity, cooperation, and a growth mentality (Hemsley-Brown 2023). According to a number of studies, businesses that have cultures that encourage lifelong education and flexibility are in a better position to reach the level of digital maturity.

What is meant by the term "digital transformation" in the field of education is the intentional utilization and incorporation of digital technology, resources, and methods in order to improve the teaching and learning processes. The shift to digital education entails more than simply the utilization of technology; it signifies a substantial revolution in the manner in which education is delivered and perceived by both students and instructors. For the purpose of creating policies that make effective use of technology to improve education throughout the nation, it is essential to conduct a complete analysis of the impact that digital transformation has had on educational accomplishments in Pakistani schools.

A rising number of people in Pakistan are beginning to see the potential of digital technology to close the educational gap, despite the fact that the education system in Pakistan is marked by significant regional disparities (Jamil, 2021). When compared to rural regions, metropolitan cities often have a greater availability of educational resources, especially technological resources. This sort of inequality is a big barrier that must be overcome in order to achieve equitable educational outcomes across the country. A positive trend, on the other hand, is the growing recognition of the potential of digital technology to reduce the educational gap and increase learning performance, particularly in places that are economically challenged.

A range of governmental and commercial endeavors have been initiated to facilitate the incorporation of technology in educational institutions, including the Digital Pakistan Initiative and the implementation of online learning platforms during the COVID-19 epidemic (Qazi et al., 2024). The efficacy of these programs in enhancing educational achievements is a crucial subject of study, namely in comprehending the utilization of digital technologies in various settings within the nation.

In order to encourage the inclusion of technology in educational institutions, a variety of initiatives, both governmental and private, have been established. These initiatives include the Digital Pakistan Initiative and the installation of online learning platforms during the COVID-19 outbreak. The effectiveness of these programs in boosting educational accomplishments is an important topic of research, particularly with regard to gaining an understanding of the application of digital technologies in a variety of contexts across the country.

The purpose of teacher training programs is to provide educators with the information and abilities necessary to properly use technology into their teaching techniques and to educate students (Mohamed Hashim, Tlemsani, & Matthews 2022). The findings of a recent study suggest that providing teachers with thorough training and assistance has the potential to greatly improve

student engagement, motivation, and academic accomplishment through the utilization of digital technology.

Academic boards specifically require HR digital transformation to enhance efficiency, streamline administrative processes, and improve decision-making in higher education institutions. By adopting digital HR solutions, universities can automate routine tasks such as payroll, recruitment, and performance evaluations, freeing up time for strategic academic initiatives. Additionally, digital transformation enables data-driven insights into faculty and staff performance, supporting better talent management and workforce planning. It also ensures compliance with evolving regulations and improves transparency, fostering a more agile and responsive academic environment. Ultimately, HR digital transformation aligns with the broader goals of modernizing education systems, improving operational excellence, and enhancing the overall academic experience for both staff and students.

However, the creation and implementation of policies that support and encourage the incorporation of technology in educational institutions is an essential component of the digital revolution that is taking place in the field of education. It is the responsibility of the government in Pakistan to play a crucial role in the promotion of digital education by creating an environment that is receptive to innovation and overcoming impediments to the integration of technology. It is not just the supply of basic infrastructure and resources that is included in these efforts; it is also the design of regulations that ensure fair and equitable access to digital education in all geographical regions.

LITERATURE REVIEW

Digital Transformation in Education: Opportunities and Necessities

Digital technology could change the way we teach and learn in a big way. To solve difficulties that are still going on in the education sector, developing countries like Pakistan need to use educational technology (Shakir & Khan 2023). Some of these concerns are poor literacy rates, a lack of teachers, and unequal access to good education. The Ziauddin University Examination Board has hurried up the shift to digital education by pushing a number of schools to quickly adopt technology. On the other side, this change has showed big differences in how easy it is to get to digital resources in cities and rural areas. This has raised questions about how fair the effects of digital transformation would be on educational attainment.

Challenges in Implementing Digital Education

A lot of important things affect how well technology is used in schools, according to research done in Pakistan on digital transformation in education. Infrastructure is a very important aspect that has a big impact on the outcome. This includes having access to reliable sources of energy and the internet, which are both things that often need to be improved in remote locations (Zareef & Jabeen 2025). The lack of good infrastructure makes it hard to fully utilize the potential benefits of digital technology. This, in turn, makes the existing educational imbalances worse by creating a digital gap. Also, real-world studies has shown that how well digital transformation works depends a lot on how well teachers can use technology inappropriately in the classroom. Teacher training

programs give teachers the skills and knowledge they need to use digital resources in their teaching. On the other hand, similar programs in Pakistan sometimes don't have enough money or are poorly designed (Shiferaw & Birbirsa 2025).

Impact of Digital Tools on Student Engagement and Performance

One of the main things that modern researchers have been looking into is how digital technology affects how involved and successful pupils are in school. Research has shown that using digital technology in the right way can boost student enthusiasm, make learning more individualized, and, in the end, increase academic performance (Midhat Ali et al. 2021). On the other hand, the size of these benefits depends on how technology is used in each case. Research has shown that kids who go to urban schools, which have better access to digital resources, are more likely to benefit from the use of technology than kids who go to rural schools. This mismatch shows how important it is to make digital education programs that are tailored to the needs and limits of different areas of Pakistan (Khaw et al. 2022). This will help make the school system fairer and more useful.

Government Policies and Initiatives in Digital Education

The government's policies and activities are very essential when it comes to shaping the framework of digital education in Pakistan. The Digital Pakistan Initiative is a program that the Pakistani government has started to encourage the use of technology in several areas, including the education board (Paredes 2020). On the other side, similar efforts often fail because people don't always follow the rules, there isn't enough cooperation amongst stakeholders, and there isn't enough money. Policies that expressly address the digital gap are important because they make sure that rural schools have the tools they need to use technology correctly (Hennessy et al. 2022). This is an important step in closing the digital gap. Public-private partnerships have been seen as a possible way to deal with these issues by encouraging new ideas and giving people the tools they need to learn online.

The study that has been done on digital transformation in education gives a general idea of the pros and cons of using technology in secondary schools in Pakistan (Riofrío-Calderón & Ramírez-Montoya 2022). There are many things that affect how well digital technologies can improve educational outcomes, especially when it comes to getting students interested in school and helping them do well in school (Naveed et al. 2013). These include the availability of infrastructure, the skills of teachers, and the level of government support. To effectively handle the challenges of digital education in Pakistan, it is important to create methods that meet the needs of different areas and ensure that all students have equal access to the benefits of technological progress in education Boards like the Ziauddin University Examination Board. This is the only method to make sure that digital education is run well (Siyal et al. 2020).

Research Questions

The purpose of this study is to investigate the influence that the incorporation of digital technology has on the educational results in Pakistani schools, specifically with relation to Ziauddin University

Examination Board, student involvement, academic performance, and geographical inequalities (Ruben, De Lisi, & Gigliotti 2023).

- What effects has the Ziauddin University Examination Board's adoption of digital technology had on students' academic achievement in various subjects?
- How does student involvement and engagement at Ziauddin University Examination Board change as a result of the usage of digital platforms and tools?
- What obstacles must Ziauddin University Examination Board administration and faculty overcome in order to successfully integrate digital technology into teaching procedures?
- What achievements or favorable results have been noted since the Ziauddin University Examination Board integrated digital technology into its assessment and examination systems?
- What effects do regional differences (such student access in urban vs rural areas) have on Ziauddin University Examination Board's usage of digital technology? How do instructors and students view the advantages and disadvantages of the digital resources utilized in the Ziauddin University Examination Board classroom.

To effectively handle the challenges of digital education in Pakistan, it is important to create methods that meet the needs of different areas and ensure that all students have equal access to the benefits of technological progress in education Boards like the Ziauddin University Examination Board. This is the only method to make sure that digital education is run well (Siyal et al. 2020).

Research Hypotheses

Direct Effects (IVs → DV)

H1: Technology Integration has a significant positive impact on Service Quality in Educational Board Outcomes

H2: Digital Performance Management has a significant positive impact on Educational Board Outcomes

H3: Digital Communication has a significant positive impact on Educational Board Outcomes

H4: Training Module has a significant positive impact on Educational Board Outcomes

Mediating Effect

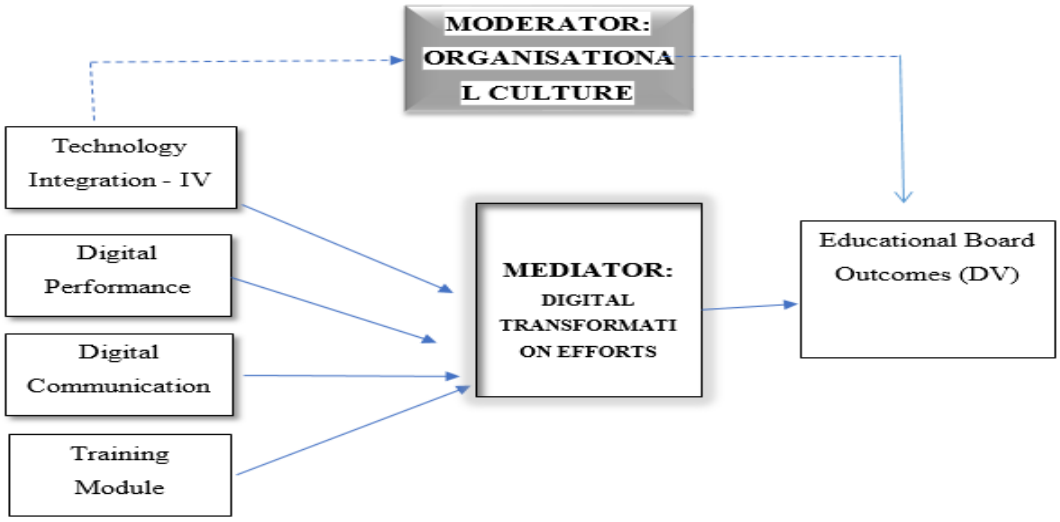
H5: Digital Transformation Efforts significantly mediate the relationship between HR digitalization practices (IV1–IV4) and Educational Board Outcomes.

Moderating Effect

H6: Organizational Culture Readiness moderates the relationship between HR digitalization practices (IV1–IV4) and Educational Board Outcomes, such that the relationship is stronger when Organizational Culture Readiness is high.

Conceptual Framework

Figure 1: Conceptual Framework



- **EBO**= Educational Board Outcomes (DV)
- **TI** = Technology Integration (IV1)
- **DPM** = Digital Performance Management (IV2)
- **DCOM** = Digital Communication (IV3)
- **TM**= Training Module (IV4)
- **DTE** = Digital Transformation Efforts (Mediator)
- **OCR** = Organizational Culture Readiness (Moderator)

$$\mathbf{EBO\ (Y) = \beta 0 + \beta 1 TI + \beta 2 DPM + \beta 3 DCOM + \beta 4 TM + \beta 5 DTE + \beta 6 (IV \times OCR) + \varepsilon}$$

Where:

- IV×OCR represents interaction terms between each IV and the moderator.

RESEARCH METHODOLOGY

This study employed a quantitative research design to examine the impact of Human Resources (HR) practices and educational board results with focus on Ziauddin University Examination Board. The data was collected through a structured, self-influenced questionnaire, designed to

directly involve or collect reactions from affected stakeholders by HR digitization in academic settings. The questionnaire was developed using valid scales before relevant literature, with a slight relevant adjustment for relevance to academic boards in Pakistan. The device included five major segments, each of the following constructions targets one of the following constructions: technology integration, digital performance management, digital communication, staff training and educational board results. Additional constructions consisted of digital transformation effort (as a mediator) and organizational culture readiness (as a moderator).

From "strong disagree (1)" to "5) to a 5-point liquid scale was used to measure the agreement of participants with each item. The questionnaire was distributed both physically and digital, which included HR professionals, faculties, coordinators, administrative staff and management representatives to reach a wide range of respondents. A total of 344 valid reactions were collected, ensuring sufficient sample size for reliability and regression-based statistical analysis. The data collection spread over six weeks, during which the respondents were informed about the educational objective of the study, and assured their oblivion and privacy. The reactions were then coded and analyzed using SPSS , reliability test Cronbach's Alpha (), focusing on regression analysis.

Research design

The study is intended for professionals working at the Ziauddin University Examination Board and perform the administrative, educational or human resources work. These people are involved in the effort of digital innovations that affect human resources processes such as testing, training, communication and performance management. To ensure the collected data was useful, several criteria were applied. The people who wanted to enter had to work at Ziauddin University Examination Board now. The on -line exam site, HR automatic tools and digital communication platforms were available only to those who used or saw the board's digital system in person. In addition, people who participate need to be part or know the institution's procedures that are affected by digital developments, especially when it comes to managing human resources and providing services within the board. People who offered to participate did so well and knew that the research would be confidential and useful. The study included the opinions and feelings of people with normal infections because it had a clear plan to include them. This strategy made the results more accurate and beneficial for a specific case, which was an Educational Examination Council in Pakistan.

Sample and Sampling Technique

The study employed an objective sampling technique to select participants, which are directly connected or affected by digital HR practices in the Ziauddin University Examination Board. This non-cut sampling method was chosen to ensure that the digital transformation processes of the board consisted of relevant knowledge, experience and associated individuals. These participants were selected on the basis of their roles based on their roles based on examination related work, use of digital systems and their roles based on performance management, communication equipment and digital initiatives of the board. The sample was deliberately structured to occupy insight from various hierarchical levels and functional departments so that digital HR practices

were affecting the results of the academic board. The purposeful sampling strategy allowed the researcher to focus on individuals who could provide informed response to the digital change process. This approach increased the relevance and depth of the data, which supports the interpretation of relations between the variables such as meaningful statistical analysis and technology integration, digital communication and organizational culture's readiness.

Statistical Technique

The study employed a series of statistical techniques to analyze data and test proposed hypotheses. Descriptive figures such as mean, standard deviations and frequency distribution were used earlier to summarize the demographic characteristics of respondents and provide observation of reactions in various constructions. To assess the reliability of the scales of measurement, Cronbach's Alpha () was calculated for each construction, which ensures the internal stability of the objects used in the questionnaire. All constructions met the acceptable reliability range (α) 0.70), confirming that the means was suitable for further analysis.

The inferior statistical techniques were then implemented to examine the relationship between the variables. Many regressions analysis was used to test the direct effect of independent variables - technology integration, digital performance management, digital communication and training modules - dependent variables, academic board results. This allowed the study to determine the strength and importance of each prophet.

Reliability and Validity

To ensure stability and accuracy of the data collected, the reliability and validity of research equipment was tested using the SPSS. The reliability was assessed using the Cronbach's Alpha (), which is a common statistical measure to determine the internal stability of the scale-based objects. All the variables used in the study -technical integration, digital performance management, digital communication, training modules, digital change efforts, readiness of organizational culture, and academic board results reflect the alpha value of more than 0.70, indicating that the items within each scale were significant. For example, in the manufacture of educational board results, the Cronbach's Alpha () was 0.91, which demonstrated excellent internal stability. Additionally, it has confirmed that no item needs to be removed, as each item has made positive contribution to the overall reliability of the scale. For validity, the search factor analysis (EFA) was conducted in SPSS using the motivational analysis function. The Kaiser-Mire-Olkin (KMO) measure was above 0.70, confirming that the sample size was sufficient for factor analysis. The testing of the sphericalness of Bartelle was important at $P < 0.001$, indicating that correlation matrix was not an identity matrix and the factor analysis was suitable. The loading factor for each item was above 0.60, which supported the construction validity of the equipment. The factors were well aligned with theoretical structure and confirmed that the questionnaire accurately measured the desired constructions. These results verified that research equipment was both reliable and valid for use in analyzing the impact of digital changes on HR practices in terms of academic.

Table 1: Instrument for Measuring Key Variables Transforming Traditional HR Practices

INDEPENDENT VARIABLES	**INSTRUMENT/SCALE**	**NO. OF ITEM**	**REFERENCE**
Technology Integration	HR Automation Practices Scale	5	(Tariq et al. 2025)
Digital Performance Management	Digital Performance Management Assessment Tool	5	(Bhutto et al. 2025)
Digital Communication	Digital Communication Effectiveness Scale	5	(Gull, Parveen, and Sridadi 2024)
Training Module	Employee Digital Skills and Competency Survey	5	(Taher 2023)
DEPENDENT VARIABLES	**INSTRUMENT/SCALE**	**NO. OF ITEM**	**REFERENCE**
Educational Board Outcomes	Digital Examination Systems outcome	8	(Sain et al. 2024)
MEDIATOR	**INSTRUMENT/SCALE**	**NO. OF ITEM**	**REFERENCE**
Digital Transformation Efforts (DTS)	Efforts in Digital Transformation Scale	-	(Aslam et al. 2021)
MODERATOR:	**INSTRUMENT/SCALE**	**NO. OF ITEM**	**REFERENCE**
Organizational Culture Readiness (OCR)	Organizational Culture Readiness for Digital Change	-	(Rahi et al. 2022)

DATA ANALYSIS

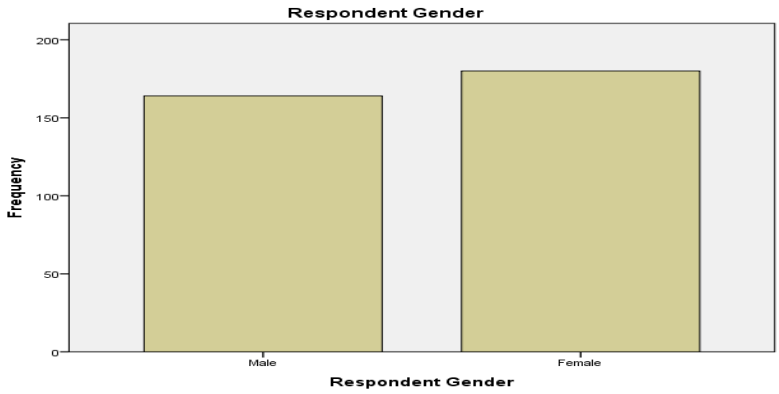
Demographic Profile

Respondent Gender

A total of 344 individuals participated in the survey, including 164 males (47.7%) and 180 females (52.3%). According to this, the percentage of females who participated in the study sample was slightly greater than the percentage of males who did so. The distribution seems to be balanced, which ensures that both opinions from both genders are reflected.

Table 2. Respondent Gender

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	164	47.7	47.7	47.7
	Female	180	52.3	52.3	100.0
	Total	344	100.0	100.0	

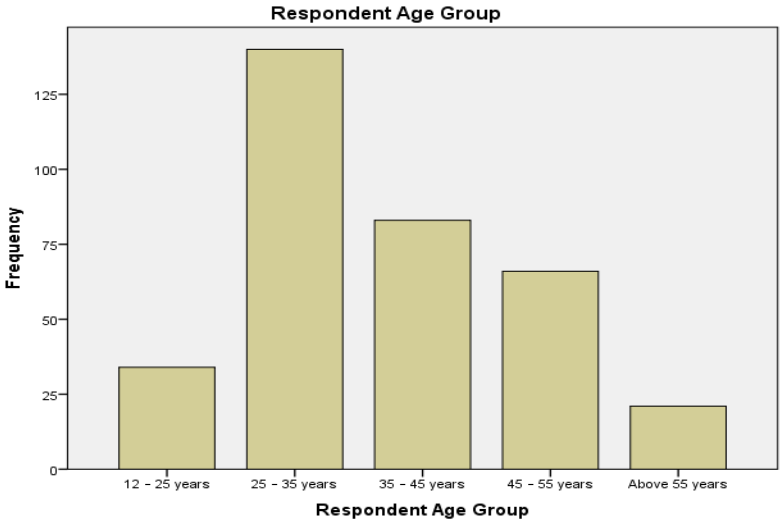


Respondent Age Group

There were 344 people who filled out the questionnaire. The age group that answered the most was 25–35 years old (40.7%), followed by 35–45 years old (24.1%), and then 45–55 years old (19.2%). Only 9.9% of people who answered were between the ages of 12 and 25, and only 6.1% were older than 55. This shows that most of the people who took part were professionals in their middle years of their employment. This is a mature and experienced group that is very relevant to the school board scenario.

Table 3. Respondent Age Group

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	12 – 25 years	34	9.9	9.9	9.9
	25 – 35 years	140	40.7	40.7	50.6
	35 – 45 years	83	24.1	24.1	74.7
	45 – 55 years	66	19.2	19.2	93.9
	Above 55 years	21	6.1	6.1	100.0
	Total	344	100.0	100.0	

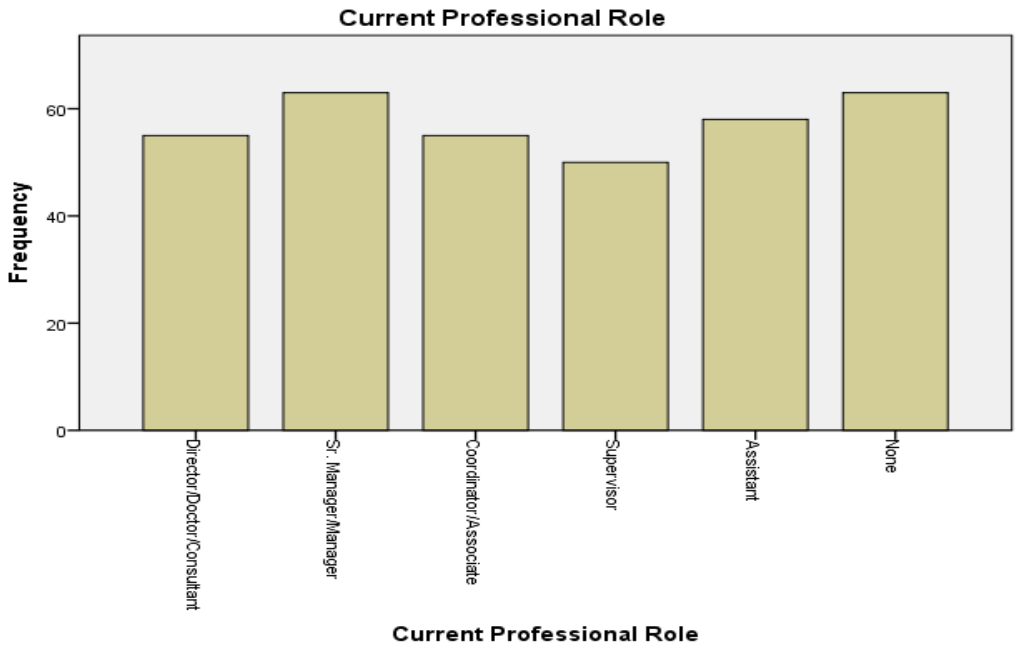


Current Professional Role

The people who answered had a wide range of jobs. The Sr. Manager/Manager and None groups were the biggest groupings in the sample, making about 18.3 percent of it. The next most common positions were Assistant (16.9%), Director/Doctor/Consultant (16.0%), Coordinator/ Associate (16.0%), and Supervisors (14.5%). The distribution shows that there is a fair representation at all levels of the hierarchy. It includes the views of both administrative and operational staff members who work for school boards.

Table 4. Current Professional Role

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Director/Doctor/Consultant	55	16.0	16.0	16.0
	Sr. Manager/Manager	63	18.3	18.3	34.3
	Coordinator/Associate	55	16.0	16.0	50.3
	Supervisor	50	14.5	14.5	64.8
	Assistant	58	16.9	16.9	81.7
	None	63	18.3	18.3	100.0
	Total	344	100.0	100.0	



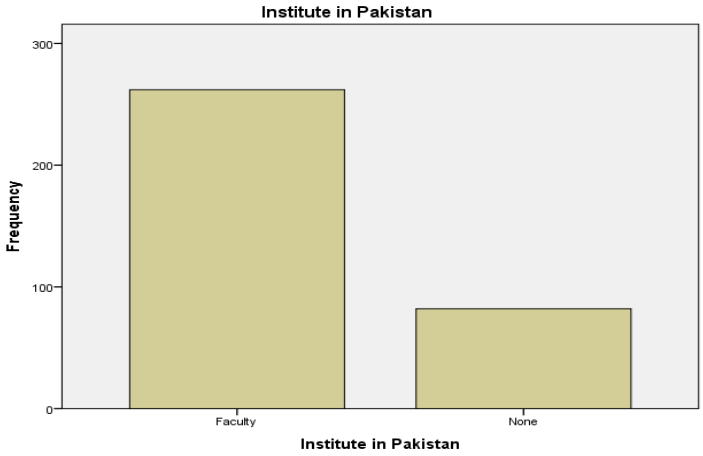
Institutes in Pakistan

On the other hand, 23.8% of respondents said they had no ties to any schools in Pakistan, while 76.2% said they were connected to faculties at schools in Pakistan. Because of this, it looks like

most of the people in the sample are experts in either the academic or institutional fields. This is a good time to look at how digital HR practices affect the results of school boards.

Table 5. Institute in Pakistan

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Faculty	262	76.2	76.2	76.2
	None	82	23.8	23.8	100.0
	Total	344	100.0	100.0	



Descriptive Analysis

A descriptive analysis was used to look at the central tendency and dispersion of the variables being studied. The results, which are based on 344 real responses, show that all of the variables had mean values between 3.85 and 3.89 on a Likert scale. This means that most people who answered the question had a positive opinion of the topic. The Educational Board Outcomes (EBO) had the highest mean (M = 3.89, SD = 0.586), which shows that people were very happy with the quality of service and digital improvements at the board level. Digital Communication (M = 3.88, SD = 0.593) and Digital Performance Management (M = 3.86, SD = 0.584) were close behind. All of these showed that people thought communication and performance monitoring were working well. The Technology Integration (M = 3.86, SD = 0.605) and Training Module (M = 3.85, SD = 0.615) both got good ratings, however the evaluations were much more spread out.

Table 6. Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Technology Integration	344	2.38	5.00	3.8621	.60450
Digital Communication	344	2.40	5.00	3.8791	.59348
Training Module	344	2.00	5.00	3.8500	.61549
Digital Performance Management	344	2.00	5.00	3.8634	.58379
Educational Board Outcomes	344	2.00	5.00	3.8862	.58622
Valid N (listwise)	344				

Reliability Analysis

The next chapter shows the results of the reliability analysis for each of the major study variables. This analysis was done using Cronbach's Alpha. Values of Cronbach's Alpha that are higher than 0.70 are considered acceptable. Values that are higher than 0.80 and 0.90, on the other hand, show levels of dependability that are good and exceptional, respectively.

Table 7: Summary of Cronbach's Alpha for Constructs

Construct	Cronbach's Alpha	No of Items	Reliability Level
Educational Board Outcomes	0.936	8	Excellent
Technology Integration	0.887	5	Good
Digital Performance Management	0.872	5	Good
Digital Communication	0.897	5	Good
Training Module	0.897	5	Good

The table above shows that all of the constructs have a high level of internal consistency. The Educational Board Outcomes were quite reliable, with a coefficient of determination (α) of 0.936. The other constructions, on the other hand, such as Technology Integration, Digital Performance Management, Digital Communication, and Training Module, had a good level of dependability, with Cronbach's Alpha values between 0.872 and 0.897. Based on these results, the items used to evaluate each construct are not just statistically trustworthy.

Educational Board Outcomes

Table 8a: Case Processing Summary

		N	%
Cases	Valid	344	100.0
	Excluded[a]	0	.0
	Total	344	100.0

a. Listwise deletion based on all variables in the procedure.

Table 8b: Reliability Statistics

Cronbach's Alpha	N of Items
.936	8

Table 8c: Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
The examination process is efficient and timely	27.08	18.351	.767	.928
Result publication is prompt and transparent	27.13	17.846	.783	.927
Students are satisfied with the exam-related services	27.07	18.459	.760	.929
Exam records and materials are accurate and well-managed	27.11	18.402	.778	.928
The board provides fair and unbiased examination services	27.12	17.922	.778	.928

Digital systems have improved overall board performance	27.08	17.944	.783	.927
Support for students during exams has improved due to digital tools	27.15	18.177	.786	.927
Overall, the exam services meet high-quality standards	27.10	18.099	.769	.928

Technology Integration

Table 9a: Case Processing Summary

		N	%
Cases	Valid	344	100.0
	Excluded[a]	0	.0
	Total	344	100.0

a. Listwise deletion based on all variables in the procedure.

Table 9b: Reliability Statistics

Cronbach's Alpha	N of Items
.887	5

Table 9c: Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Digital systems reduce delays in exam management	15.47	5.609	.742	.859
Technology ensures accurate and timely result compilation	15.49	5.668	.725	.863
The online portal simplifies exam registration and communication	15.50	5.843	.707	.867
Automated systems help streamline the exam process	15.48	5.772	.710	.866
Digital tools support efficient exam-related decision-making	15.53	5.410	.748	.858

Digital Performance Management

Table 10a: Case Processing Summary

		N	%
Cases	Valid	344	100.0
	Excluded[a]	0	.0
	Total	344	100.0

a. Listwise deletion based on all variables in the procedure.

Table 10b: Reliability Statistics

Cronbach's Alpha	N of Items
.872	5

Table 10c: Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Digital evaluations improve the accountability of exam staff	15.51	5.242	.707	.843
Staff performance monitoring supports better exam operations	15.49	5.440	.655	.855
Digitally managed KPIs ensure exam tasks are completed on time	15.51	5.119	.738	.835
Performance data helps improve the accuracy of exam services	15.55	5.123	.693	.847
Digital performance feedback helps address service issues quickly	15.47	5.235	.702	.844

Digital Communication

Table 11a: Case Processing Summary

		N	%
Cases	Valid	344	100.0
	Excluded[a]	0	.0
	Total	344	100.0

a. list wise deletion based on all variables in the procedure.

Table 11b: Reliability Statistics

Cronbach's Alpha	N of Items
.897	5

Table 11c: Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Digital communication keeps students informed about exam updates	15.40	6.084	.771	.869
Important announcements are delivered quickly via digital channels	15.46	6.121	.740	.876
Digital platforms reduce confusion about exam-related information	15.45	6.318	.723	.880

Communication tools help staff coordinate exam tasks effectively	15.42	6.402	.723	.880
Students receive timely updates through digital notifications	15.45	5.980	.775	.868

Training Module

Table 12 a: Case Processing Summary

		N	%
Cases	Valid	344	100.0
	Excluded[a]	0	.0
	Total	344	100.0

Table 12b: Reliability Statistics

Cronbach's Alpha	N of Items
.897	5

Table 12c: Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Staff are confident in using digital systems for exam processes	15.44	6.143	.758	.872
Training helps staff effectively manage the digital exam portal	15.41	6.219	.742	.875
Digital training improves the accuracy of service delivery	15.44	6.072	.738	.876
Staff quickly adapt to new digital systems due to training	15.48	5.848	.753	.873
Ongoing digital training enhances overall board performance	15.41	5.957	.740	.876

Inferential Statistics

Regression

An analysis of multiple linear regression was carried out by us in order to ascertain the degree to which the outcomes of the educational board were impacted by the training modules, digital performance management, technological integration, and digital communication options. This research was conducted with the intention of determining whether or not an effect of this kind genuinely occurs.

After doing statistical analysis, it was determined that the model was statistically significant at a significance level of $p < .001$ and $F(4, 339) = 22.308$. Additionally, the model had a coefficient of determination of.208, which implies that it was able to account for about 20.8% of the variances in Educational Board Outcomes discrepancies. This is an indication that the model was successful in explaining the differences. In light of this, it is clear that the implementation of computerized systems for the administration of human resources has a substantial impact on the academic performance of students.

It was discovered that the Training Module had the most significant and significant beneficial effect on the outcomes ($\beta = .246$, $p < .001$), when all the parameters that were evaluated were taken into consideration. This conclusion emphasizes how important it is to continue collecting

knowledge regarding the breakthroughs that have been made in technology. In addition, the achievement of favorable outcomes was influenced by digital performance management (β =.128, p =.017) and technological integration (β =.207, p <.001), both of which had a substantial impact on the outcome. This indicates how important it is to have efficient procedures in place and to pay attention to how things are progressing. The fact that this is the case demonstrates how critical it is. On the other hand, it is of the utmost importance to take into consideration the fact that Digital Communication did not appear to be a reliable predictor (β =.081, p =.118). It is probable that communication technologies will not have a direct impact on the measurements of outcomes unless they are used in conjunction with other approaches that are more comprehensive. This is because of the reasons stated above.

The results of the regression analysis indicate that certain digital tools, such as the exploitation of technology and training, have the ability to aid school boards in more successfully accomplishing their responsibilities. This is the conclusion that can be drawn from all of the data. This is exactly what will take place so long as the performance systems and the behaviors that are linked with them are able to adjust to the changes that are taking place.

Table 13a: Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	Training Module, Technology Integration, Digital Communication , Digital Performance Management[b]	.	Enter

a. Dependent Variable: Educational Board Outcomes
b. All requested variables entered.

Table 13b :Model Summary

					Change Statistics				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	F Change	df1	df2	Sig. F Change
1	.456[a]	.208	.199	.52465	.208	22.308	4	339	.000

a. Predictors: (Constant), Training Module, Technology Integration, Digital Communication, Digital Performance Management

Table 13c : ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	24.561	4	6.140	22.308	.000[b]
	Residual	93.311	339	.275		
	Total	117.872	343			

a. Dependent Variable: Educational Board Outcomes
b. Predictors: (Constant), Training Module, Technology Integration, Digital Communication, Digital Performance Management

Table 13d : Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.403	.273		5.140	.000
	Technology Integration	.200	.051	.207	3.927	.000
	Digital Performance Management	.129	.054	.128	2.394	.017
	Digital Communication	.080	.051	.081	1.565	.118
	Training Module	.234	.049	.246	4.772	.000

a. Dependent Variable: Educational Board Outcomes

Mediation Analysis

This section shows the results of a mediation analysis that was done using PROCESS macro-Model 4. The goal of this study was to find out if Digital Transformation Efforts (DTE) are a link between Technology Integration (TI) and Educational Board Outcomes (EBO). Adding technology to educational board outcomes had a statistically significant effect overall (b =.316, p <.001). From this, we might guess that educational boards do better when they use more technology. Even after taking into consideration the effects of Digital Transformation Efforts, Technology Integration still had a big effect on Educational Board Outcomes (b =.316, p <.001). There was no significant link between Technology Integration and Digital Transformation Efforts (b =.011, p =.855), and there was also no significant link between Digital Transformation Efforts and Educational Board Outcomes (b =.029, p =.529). Neither of these ties was important. Since the confidence range includes zero, we can say that the indirect effect of Technology Integration on Educational Board Outcomes through Digital Transformation Efforts did not meet the requirements for statistical significance (indirect effect =.000, 95% confidence interval [−.006,.006]). The mediation study's results do not support the idea that Digital Transformation Efforts mediate the association between Technology Integration and Educational Board Outcomes. There is a positive association between Technology Integration and Educational Board Outcomes, but it doesn't seem like Digital Transformation Efforts have any effect on this link in the sample that is currently being looked at.

```
**************************************************************************
Model  : 4
  Y  : EBO_Mean
  X  : TI_Mean
  M  : DTE_Mean

Sample
Size:  344
**************************************************************************
OUTCOME VARIABLE:
 DTE_Mean
Model Summary
       R      R-sq       MSE         F       df1       df2         p
    .010      .000      .415      .033     1.000   342.000      .855

Model
          coeff        se         t         p      LLCI      ULCI
constant  3.860      .225    17.158      .000     3.418     4.303
TI_Mean    .011      .058     .183      .855     -.103      .124
**************************************************************************
```

OUTCOME VARIABLE:
EBO_Mean

Model Summary

R	R-sq	MSE	F	df1	df2	p
.328	.107	.309	20.497	2.000	341.000	.000

Model

	coeff	se	t	p	LLCI	ULCI
constant	2.552	.265	9.645	.000	2.032	3.072
TI_Mean	.316	.050	6.365	.000	.218	.413
DTE_Mean	.029	.047	.630	.529	-.062	.121

********** TOTAL EFFECT MODEL **********
OUTCOME VARIABLE:
EBO_Mean

Model Summary

R	R-sq	MSE	F	df1	df2	p
.326	.106	.308	40.669	1.000	342.000	.000

Model

	coeff	se	t	p	LLCI	ULCI
constant	2.665	.194	13.754	.000	2.284	3.046
TI_Mean	.316	.050	6.377	.000	.219	.414

********** TOTAL, DIRECT, AND INDIRECT EFFECTS OF X ON Y **********

Total effect of X on Y

Effect	se	t	p	LLCI	ULCI
.316	.050	6.377	.000	.219	.414

Direct effect of X on Y

Effect	se	t	p	LLCI	ULCI
.316	.050	6.365	.000	.218	.413

Indirect effect(s) of X on Y:

	Effect	BootSE	BootLLCI	BootULCI
DTE_Mean	.000	.003	-.006	.006

Moderator Analysis

The results of a moderation analysis that was carried out with the PROCESS macro-Model 1 are reported in this portion of the report. This research was conducted with the intention of determining whether or not Organizational Culture Readiness (OCR) plays a moderating role in the relationship between Technology Integration (TI) and Educational Board Outcomes (EBO).

Given that the F(3, 340) value was 15.887, the p-value was less than 0.001, and the R2 value was.123, it can be concluded that the entire model displayed statistical significance. Due to the fact that it is able to explain the data, this indicates that the model is responsible for approximately 12.3% of the variance in Educational Board Outcomes.

The results of the statistical analysis revealed that the interaction term between Technology Integration and Organizational Culture Readiness was determined to be statistically significant (b =.192, p =.012). This was the conclusion reached by the researchers. This shows that the influence that Technology Integration has on Educational Board Outcomes is moderated by the readiness of the organization's culture to support the implementation of technology.

When the OCR levels were low (−1 standard deviation = 3.15), it was discovered that the influence of TI on EBO was substantial (b =.169, p =.027). This was the case when the OCR levels were low. At the typical levels of optical character recognition (OCR), the effect was more apparent (mean = 3.92), with a b-value of 0.317 and a p-value of less than 0.001. When the optical character recognition (OCR) was at a high level (with a standard deviation of 4.68), the effect was significantly more pronounced (b =.462, p <.001). When the readiness of the organization's culture is higher, it appears that the inclusion of technology has a more significant and favorable impact on the outcomes of educational boards. This is based on the pattern that has been seen.

This hypothesis, which asserts that the readiness of the organizational culture contributes to the enhancement of the good influence that technology integration has on the outcomes of educational boards, is supported by the results of the moderation analysis, which provide support for the hypothesis. When it comes to reaping the benefits of digital transformation being applied in examination systems, institutions that have a culture that is more adaptable and encouraging are in a better position to do so.

```
**************************************************************************
Model  : 1
   Y  : EBO_Mean
   X  : TI_Mean
   W  : OCR_Mean
Sample
Size:  344
**************************************************************************
OUTCOME VARIABLE:
 EBO_Mean

Model Summary
       R      R-sq       MSE         F       df1       df2         p
    .351      .123      .304    15.887     3.000   340.000      .000

Model
              coeff       se         t         p      LLCI      ULCI
constant      5.509    1.174     4.692      .000     3.200     7.818
TI_Mean       -.435     .301    -1.444      .150    -1.027      .157
OCR_Mean      -.725     .295    -2.461      .014    -1.305     -.146
Int_1          .192     .076     2.531      .012     .043      .341

Product terms key:
 Int_1    :       TI_Mean  x       OCR_Mean

Test(s) of highest order unconditional interaction(s):
      R2-chng        F        df1        df2         p
X*W      .017     6.406      1.000    340.000      .012
----------
   Focal predict: TI_Mean  (X)
       Mod var: OCR_Mean (W)
Conditional effects of the focal predictor at values of the moderator(s):
   OCR_Mean     Effect        se         t         p      LLCI      ULCI
     3.150        .169      .076     2.217      .027      .019      .320
     3.918        .317      .049     6.417      .000      .220      .414
     4.678        .462      .076     6.103      .000      .313      .611
Data for visualizing the conditional effect of the focal predictor:
Paste text below into a SPSS syntax window and execute to produce plot.

DATA LIST FREE/
  TI_Mean    OCR_Mean   EBO_Mean   .
```

```
BEGIN DATA.
    3.200    3.150    3.767
    4.000    3.150    3.902
    4.400    3.150    3.970
    3.200    3.918    3.681
    4.000    3.918    3.934
    4.400    3.918    4.061
    3.200    4.678    3.596
    4.000    4.678    3.966
    4.400    4.678    4.151
END DATA.
GRAPH/SCATTERPLOT=

 TI_Mean  WITH     EBO_Mean BY       OCR_Mean .
```

Analysis of Hypotheses:

This report gives a summary of the data obtained from testing the hypothesis based on multiple linear regression, mediation analysis (Model 4), and moderation analysis (Model 1) accordingly. The summary is provided by using the PROCESS macro in SPSS. During the process of analyzing each hypothesis, both the statistical significance of the effect and the direction in which it is occurring are taken into consideration.

H1: Technology Integration has a significant positive impact on Service Quality in Educational Board Outcomes

According to the first hypothesis, the incorporation of technology is a significant factor in determining the outcomes of educational boards. Through the utilization of regression analysis, it was demonstrated that the incorporation of technology had a significant and favorable impact on the outcomes of educational boards (β =.207, p <.001).

H2: Digital Performance Management has a significant positive impact on Educational Board Outcomes

According to the second hypothesis, the outcomes of educational boards can be predicted with a significant degree of accuracy by using digital performance management. The results of the regression model showed that Digital Performance Management was a significant predictor, with a beta coefficient of.128 and a p-value of.017 that indicated its significance.

H3: Digital Communication has a significant positive impact on Educational Board Outcomes

There is a significant relationship between the outcomes of educational boards and the use of digital communication. According to the findings of an investigation into the influence of digital communication on the outcomes of educational boards, it was discovered that the impact did not demonstrate statistical significance (β =.081, p =.118).

H4: Training Module has a significant positive impact on Educational Board Outcomes

According to Hypothesis 4, the Training Module functions as a substantial predictor of the outcomes of the Educational Board members. It was discovered that the Training Module was a predictor that exhibited statistical significance (β =.246, p <.001).

H5: Digital Transformation Efforts significantly mediate the relationship between HR digitalization practices (IV1–IV4) and Educational Board Outcomes.

This contact is mediated by digital transformation efforts, which operate as a mediator between the integration of technology and the outcomes of educational boards. There is a relationship between the two. Not a single support exists. The overall and direct effects of Technology Integration on Educational Board Outcomes were found to be statistically significant (b =.316, p <.001). However, the indirect effect through Digital Transformation Efforts was not found to be significant (indirect effect =.000, 95% confidence interval [−.006,.006]). This meant that the indirect effect was not found to be significant.

H6: Organizational Culture Readiness moderates the relationship between HR digitalization practices (IV1–IV4) and Educational Board Outcomes, such that the relationship is stronger when Organizational Culture Readiness is high.

There is a hypothesis that suggests that the readiness of the organizational culture acts as a moderator in the relationship between the adoption of technology and the outcomes of educational boards. Support has been provided. It was shown that there was a statistically significant connection between the incorporation of technology and the readiness of the culture of the organization (b =.192, p =.012). A straightforward slope analysis was performed, and the findings revealed that the influence of incorporating technology into educational board outcomes was more pronounced at higher degrees of organizational culture preparation. This was determined as a result of the findings of the analysis.

Table 14: A Brief Summary of the Results Obtained from the Hypothesis

Hypothesis	Ultimate Outcome	Supported
H1	This change of TI into EBO (β =.207, p <.001) is a significant one.	Yes
H2	The equation can be represented as DPM → EBO (β =.128, p =.017) by using the equation.	Yes
H3	In the statistical study, the DCOM was found to be a good predictor of EBO (β =.081, p =.118).	No
H4	The expression of EBO is a result of TM (β =.246, p <.001)	Yes
H5	0.000 is the value of the indirect effect, and the confidence interval for this value is from -.006 to.006	No
H6	The relationship between TI and OCR (b =.192, p =.012) between the two	Yes

RESULT AND DISCUSSION

The goal of this study was to find out if there is a link between Educational Board Outcomes (EBO) and the use of digital transformation methods including Technology Integration, Digital Performance Management, Digital Communication, and Training Modules. This study looked into both the moderating influence of Organizational Culture Readiness (OCR) and the mediating role of Digital Transformation Efforts (DTE). The study also looked into the connection between the two. SPSS and the PROCESS macro were used to do a thorough statistical analysis to see if the study's hypotheses were correct.

The results of the multiple linear regression analysis showed that Technology Integration ($\beta = .207$, $p < .001$), Digital Performance Management ($\beta = .128$, $p = .017$), and Training Modules ($\beta = .246$, $p < .001$) had a big effect on Educational Board Outcomes. These results support the idea that using digital technologies in a planned way, keeping track of performance, and training staff all play a big role in making exam management and service quality much better. Still, it's important to note that Digital Communication was not a strong predictor ($\beta = .081$, $p = .118$). This means that improvements in communication may not have big effects on their own unless they are part of larger transformation efforts.

According to the mediation analysis we did with PROCESS Model 4, we found that technology integration did not have a substantial indirect effect on EBO through digital transformation activities. The direct and total effects of Technology Integration on EBO were statistically significant ($b = .316$, $p < .001$), while the indirect effect was not (indirect effect $= .000$, 95% confidence range $[-.006, .006]$). This means that DTE, as it was used in this study, might not be the main way that technology affects results. This means that we need to look into other ways to get things done, including getting users involved or making sure that policies are in line with each other.

The moderation analysis (PROCESS Model 1) found that there is a strong link between the organization's culture being ready for technology and the technology being used ($b = .192$, $p = .012$). The conditional effects study found that the link between EBO and Technology Integration got stronger as the level of Organizational Culture Readiness rose. Because of this, it is very important to create a culture that is open to change, stimulates creativity, and gives people the mental safety they need for digital transformation to work.

In conclusion, the results show that while digital infrastructure and training are important for improving the performance of school boards, they work much better when they are combined with a supportive corporate culture. These insights can help policymakers and institutional leaders come up with strategic measures that will help digital transformation last.

CONCLUSION

The goal of this study was to look into the effects that digital transformation methods, especially Technology Integration, Digital Performance Management, Digital Communication, and Training Modules, have on the results of the Ziauddin University Examination Board (Faridi & Shaheen n.d.). The results of a full quantitative analysis of data from 344 participants show beyond a doubt that putting digitalization into academic boards makes services related to exams much better, fairer, and more efficient. This was proven by looking at the data (Uddin & Kabir 2024). When you look at all of this, it seems that the success of digital transformation activities depends not only on the technology infrastructure but also on how skilled and ready the staff members are (Ma

2023). Digital performance management was a big component of making real-time monitoring, staff responsibility, and quick feedback possible, as well as predicting good results. Digital performance management plays a big part in this (Purwanto et al. 2023). All of these possible outcomes were possible because digital performance management was put into place. Digital communication didn't have a statistically significant direct effect since it wasn't part of an integrated digital system, even though it was a big factor. Even though it was an important part that helped, this happened (Mohamed Hashim et al. 2022).

The researchers looked at mediation and decided that Digital Transformation Efforts (DTE) did not have a big effect on the link between Technology Integration and Educational Board End Results. This conclusion was reached after looking at the results of the research (Kuzior, Kettler, and Rąb 2021). On the other side, it was shown that Organizational Culture Readiness (OCR) was a strong mediator that made technology have a bigger effect on board performance (García-Peñalvo 2021). This was definitely an important find. This study shows that these are very important factors for the success of digital reforms. It is important to stress how important organizational support, leadership, and a culture that is open to change are. The study shows that these are very important factors. This study shows with real-world evidence that adopting new technology is not the only thing that makes academic testing boards successfully go digital. The study shows the results of this examination throughout. In the end, our study backs up these claims (Akour and Alenezi 2022). It is also a result of training workers, creating a culture that is open to change, and making sure that strategy alignment is kept up. These are all significant things. People who want to improve testing procedures by using long-lasting digital innovation can use the results since they give them ideas that they can employ. This includes those who work in schools, make decisions on policies, and plan how to use technology in schools (Poba-Nzaou, Galani, & Tchibozo 2020).

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