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Investigation of Educational Managers Readiness for Integration of Chat GPT at Higher Education Level

Sadaf Suhail Zaidi[1], Dr. Muhammad Zafar Iqbal[2]

[1] MPhil Educational Planning and Management, Allama Iqbal Open University, Islamabad, Email: zaidisadaf800@gmail.com

[2] Assistant Professor, Allama Iqbal Open University Islamabad, Email: mzafar.iqbal@aiou.edu.pk

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Abstract

This study investigated the educational managers' readiness at higher education institutions to integrate ChatGPT, leading AI tool, into administrative and academic functions in Lahore. A descriptive research design with cross-sectional survey method was employed. The population of the study was 156 managers including deans and heads of departments across social sciences faculties in public and private universities. Responses received from 79 managers using a structured questionnaire adapted from the Technology Readiness Index (TRI), measuring optimism, innovativeness, discomfort, and insecurity on a six-point semantic differential scale. The t-tests and ANOVA were employed to assess group mean score differences based on gender, academic qualification, university type, and teaching experience. Results indicated high levels of optimism and innovativeness, coupled with moderate discomfort and insecurity. No significant differences were found by gender, qualification, or experience, although public university managers demonstrated marginally higher readiness than their private sector counterparts. The findings suggested that educational managers are broadly prepared for ChatGPT integration yet highlight the need for structured institutional support to address underlying concerns. This study contributes to understanding AI adoption dynamics within developing country contexts and offers practical insights for higher education leadership aiming to implement AI-driven solutions.

Keywords

ChatGPT Integration, Higher Education Management, Technology Readiness Index, AI Adoption, Educational Leadership, Pakistan, Semantic Differential Scale

Introduction

Higher education institutions (HEIs) are vital to societal development, serving as incubators of specialized knowledge, critical thinking, and socio-economic innovation (Mladenova, 2022). Through teaching, research, and community engagement, universities foster global citizenship, technological advancement, and cultural integration. In this rapidly evolving landscape, educational managers particularly Deans and Heads of Departments play a strategic role in ensuring that institutions remain responsive to emerging challenges. Their leadership in curriculum development, academic quality assurance, and institutional planning directly impacts an institution's ability to adapt and thrive (Kim & Kim, 2022; Neumann, Rauschenberger, & Schön, 2023).

Today, one of the most transformative forces reshaping higher education is artificial intelligence (AI). Tools such as ChatGPT, based on advanced natural language processing and machine learning techniques, are revolutionizing administrative efficiency, academic advising, student engagement, and learning support (Klimova et al., 2023; Sandu, Gide, & Elkhodr, 2024). The integration of AI promises significant gains in personalization, operational streamlining, and innovation. However, such integration also presents ethical concerns related to data privacy, academic integrity, and responsible use, making the role of educational managers even more critical. It is not merely technological infrastructure that ensures successful AI adoption but the strategic readiness, mindset, and adaptability of managers themselves (Perkins, 2023).

In Pakistan, particularly in cities like Lahore renowned as cultural and educational hubs the question of managerial readiness for AI adoption becomes increasingly urgent. Lahore's diverse ecosystem of public and private universities offers an ideal context for investigating how institutional leadership engages with technological transformation. Despite its educational prominence, Lahore faces challenges common to developing regions, including resource disparities, uneven digital infrastructure, and varying attitudes toward innovation. Thus, educational managers' readiness for integrating AI tools like ChatGPT carries profound implications for institutional competitiveness, academic quality, and long-term sustainability (Mutongoza & Olawale, 2022).

The evolution of AI, from rule-based systems to sophisticated deep learning models, has enabled the development of powerful conversational agents such as ChatGPT (Bisen, Arslan, Yildirim, & Yildirim, 2021). These tools can simulate human-like interactions, assist in administrative workflows, and enhance student services. Yet, they also introduce complexities related to ethical deployment, trust, and user adaptation. Given these dual potentials, the readiness of educational managers encompasses multiple dimensions: optimism about AI benefits, innovativeness in adoption, discomfort in managing unfamiliar technologies, and insecurity about reliability and ethical implications (Parasuraman & Colby, 2014).

Despite increasing scholarly attention to AI in education, empirical research examining the psychological and strategic readiness of educational managers remains scarce. Existing studies have largely focused on faculty perceptions, student engagement, or infrastructural challenges (Qadir, 2022; Tilili et al., 2023; Al-Worafi et al., 2023). This scarcity of empirical evidence on educational managers' readiness to integrate AI tools like ChatGPT represents a critical blind spot in current higher education research, potentially undermining efforts for sustainable digital transformation.

This research addresses this critical gap by evaluating how educational managers in Lahore's higher education sector perceive their readiness for ChatGPT adoption across demographic variables such as gender, academic qualification, institutional type, and teaching experience. Understanding managers' readiness is vital for several reasons. First, it enables institutions to design targeted professional development programs that build digital leadership capacities. Second, it informs policy frameworks aimed at responsible AI integration, ensuring that adoption is guided by ethical considerations and strategic alignment. Third, it helps identify barriers such as lack of training, skepticism, or resource constraints that may hinder successful technology diffusion (Neumann et al., 2023; Tajik, 2024).

This study thus seeks to investigate the degree of educational managers' readiness to integrate ChatGPT at the higher education level, with a focus on the four constructs derived from the Technology Readiness Index 2.0 model: optimism, innovativeness, discomfort, and insecurity. It examines whether significant differences exist across demographic variables and explores how these insights can guide institutional strategies for fostering AI-enabled educational environments. This study was carried out to achieve the following objectives

1. To investigate educational managers' readiness for integration of ChatGPT at higher education.
2. To compare educational managers' readiness for integrating ChatGPT by gender and qualification.
3. To compare private and public university educational managers' readiness for using ChatGPT.

Research Questions

1. What is the degree of educational mangers' readiness to adopt ChatGPT at higher education?
2. What is the degree of educational managers' Optimism for ChatGPT at higher education?
3. What is the degree of educational managers' Innovativeness for ChatGPT at higher education?
4. What is the degree of educational managers' Discomfort for ChatGPT at higher education?
5. What is the degree of educational managers' Insecurities for ChatGPT at higher education?

Null Hypotheses of the Study

H_{01}: There is no significant difference between male and female educational managers' readiness for integrating ChatGPT at higher education.

H_{02}: There is no significant difference among educational managers' readiness by qualification for ChatGPT integration at higher education.

H_{03}: There is no significant difference between public and private sector university's educational managers' readiness for ChatGPT integration at higher education.

H_{04}: There is no significant difference among educational managers' readiness by experience for ChatGPT integration at higher education

Literature Review

Artificial Intelligence (AI) continues to reshape the landscape of higher education, offering new possibilities for administrative efficiency, personalized learning, and research innovation. In particular, the emergence of ChatGPT, a generative AI tool, represents a major shift in educational management and delivery (Neumann, Rauschenberger, & Schön, 2023). Educational managers now face both opportunities and challenges in deploying such technologies within university settings. While AI's integration promises enhanced operational functionality and learning support, it also raises questions about ethical standards, academic integrity, and the preservation of human-centered education (Klimova, Pikhart, & Kacetl, 2023).

Qualitative investigations into educational managers' readiness for AI and ChatGPT integration reveal a complex blend of optimism and apprehension. Some studies indicate positive attitudes toward AI's capacity to improve learning experiences, administrative functions, and decision-making (Aithal & Aithal, 2023; Sallam et al., 2023). Yet, these perspectives are tempered by concerns regarding assessment authenticity, data privacy, and the possible erosion of critical thinking skills. Research in fields like pharmacy and engineering education highlights cautious enthusiasm, suggesting that while ChatGPT offers substantial promise, its implementation demands careful ethical oversight and contextual adaptation (Rahman et al., 2022; Romero, 2024).

Educational managers' roles extend beyond administration to strategic leadership and policy innovation. They are instrumental in defining institutional visions, fostering interdisciplinary collaboration, and shaping academic culture (Raza, 2023). Their readiness to embrace AI technologies is crucial for aligning technological adoption with institutional missions. Recent studies highlight that managers must balance promoting innovation with maintaining academic rigor and equity in AI-driven environments (Bennett & Abusalem, 2024).The potential of AI in higher education is vast. Technologies like ChatGPT facilitate personalized feedback, streamline administrative processes, and enhance student engagement (Xu, 2024; Karimi & Zade, 2024). AI systems can create data-driven learning environments tailored to individual student needs, increasing success rates and operational efficiencies (Hashim et al., 2022). However, scholars

emphasize the necessity of algorithmic vigilance to mitigate risks such as algorithmic bias, ethical breaches, and over-reliance on automation (Klimova et al., 2023; Abdelfattah et al., 2024). Thus, educational managers must champion not only the adoption of AI but also the ethical frameworks that govern its responsible use.

In examining demographic variables, several studies explore how gender, experience, university type, and qualification affect technology readiness. Research remains divided: some findings show minimal gender-based differences in AI adoption (Strzelecki, 2024; Sok & Heng, 2024), while others note nuanced differences in cognitive readiness and technical confidence (Çalışkan, 2023). Similarly, work experience correlates more strongly with technological adaptability than chronological age, indicating that expertise, rather than mere exposure, fosters AI readiness (Chiu & Cho, 2021; Balanyà Rebollo & Minelli de Oliveira, 2024).

Qualification also emerges as a pivotal factor. Higher degrees often correlate with greater readiness, reflecting the complex interplay between educational background, exposure to technology, and openness to innovation (Oktadini et al., 2022). Additionally, disparities between public and private university managers suggest that institutional culture significantly impacts readiness levels (Z. Abdullah, Ismail, & Aziz, 2024; Tang et al., 2024). Private institutions often demonstrate more agile responses to technological shifts, while public institutions may face bureaucratic constraints.

The choice of the Technology Readiness Index (TRI 2.0) as the theoretical framework for this study is deliberate. Unlike broader indices like the Network Readiness Index (NRI 2024), TRI 2.0 specifically measures individual psychological readiness, focusing on optimism, innovativeness, discomfort, and insecurity (Parasuraman & Colby, 2014). These dimensions are crucial for understanding how educational managers perceive and react to the integration of disruptive technologies like ChatGPT.

The literature highlights a landscape rich with potential yet fraught with complexity. While there is optimism regarding AI's transformative power, persistent concerns regarding ethics, equity, and human-centered education remain unresolved. The readiness of educational managers emerges not merely as a technical competence but as a composite of attitudes, experiences, institutional cultures, and ethical sensitivities. As AI technologies like ChatGPT continue to evolve, it becomes imperative for future research to explore longitudinal impacts, assess cross-cultural variations, and develop frameworks that balance innovation with safeguarding academic integrity.

Research Methodology

This study employed a descriptive research design with cross-sectional survey method within a quantitative framework to assess the readiness of educational managers in Lahore's higher education institutions toward integrating ChatGPT technology. A descriptive design was deemed appropriate as it facilitates systematic collection, analysis, and interpretation of data related to existing conditions, opinions, and attitudes (Apostolopoulos, Psychalis, & Liargovas, 2022).

The population for the study consisted of 156 educational managers, including Deans and Heads of Departments, from the Social Sciences faculties of public and private universities in Lahore (HEC, 2022). Considering practical limitations in terms of time and access, stratified random sampling was employed to ensure fair representation across both public and private university sectors (Saldaña, 2021). From the total population, a sample of 110 participants was selected for participation. Eventually, data were successfully collected from 79 educational managers who responded to the survey. Stratification was done based on university type but not on gender or designation, thereby balancing simplicity and diversity in sample selection.

Table 1
Population and Sample Characteristics

Group	Population (N)	Pilot Study (n)	sample (n)	Response Received
Educational Managers	156	31	110	79

Instrumentation

Data were collected using a structured, self-developed questionnaire adapted from the Technology Readiness Index (TRI) model by Parasuraman and Colby (2014). The instrument included 23 items categorized under four constructs: Optimism, Innovativeness, Discomfort, and Insecurity. Responses were recorded on a six-point semantic differential scale ranging from "Low" (1) to "High" (6).

To ensure the validity and reliability of the instrument, a pilot study was conducted with 31 educational managers from public and private universities in Lahore. Participants were requested to complete the adapted questionnaire and provide feedback regarding the clarity and relevance of each item. Using SPSS software, the internal consistency of the 23-item instrument was assessed through Cronbach's Alpha. The overall reliability coefficient was found to be 0.790, indicating high reliability. Sub-constructs also demonstrated satisfactory reliability with Cronbach's Alpha values of 0.797 for Optimism, 0.782 for Innovativeness, 0.759 for Discomfort, and 0.819 for Insecurity, all exceeding the 0.70 benchmark considered acceptable for social science research (Whitehead et al., 2015; Samad et al., 2023).

Table 2
Reliability Analysis

Construct	No. of Items	Cronbach's Alpha
Optimism	7	0.797
Innovativeness	6	0.782
Discomfort	5	0.759
Insecurity	5	0.819
Overall Readiness	23	0.790

Based on pilot feedback, minor language adjustments were made to enhance item clarity and precision. The results confirmed the instrument's appropriateness for main data collection without necessitating major revisions.

Content validity of the instrument was verified through expert reviews. Three subject-matter specialists in education and technology reviewed the items for relevance, clarity, and comprehensiveness (Bougie & Sekaran, 2019; Röding, Birgel, & Walter, 2024). Based on their feedback, necessary modifications were made. The Content Validity Index (CVI) for the final instrument was computed to be 0.797, indicating satisfactory content validity.

Data Analysis

Inferential statistics, including independent sample t-tests and ANOVA, Normality of the data distribution was assessed through skewness and kurtosis, both falling within acceptable limits of -2 to +2 (George & Mallery, 2010), validating the use of parametric tests.

While analyzing data collected from 79 respondents, it was found that all 79 participants (Deans and Heads of Departments) had successfully completed the questionnaire regarding their readiness for ChatGPT integration. Therefore, the complete sample was retained for analysis. Data were analyzed using SPSS software. Descriptive statistics were first applied to summarize the demographic characteristics, and readiness levels, followed by normality testing to ensure the suitability of parametric tests. Readiness levels were assessed across four sub-constructs i.e., optimism, innovativeness, discomfort, and insecurity. Inferential statistical tests, including independent samples t-tests and one-way ANOVA, were then conducted to examine differences in readiness based on gender, academic qualification, type of university, and teaching experience.

Results

Table 3
Descriptive Statistics for Readiness Constructs for ChatGPT Integration

Construct	Mean	SD
Optimism (OPT)	4.98	0.59
Innovativeness (INO)	4.89	0.61
Discomfort (DIS)	3.27	0.88
Insecurity (INS)	2.72	0.90
Overall Readiness	4.09	0.34

*Responses were 79

High levels of optimism and innovativeness were observed among the respondents, alongside moderate levels of discomfort and insecurity.

Table 4
Readiness for the integration of ChatGPT at higher education by Gender

Construct	t-value	p-value
OPT	0.775	0.441
INO	0.816	0.417
DIS	0.485	0.629
INS	0.501	0.618
Readiness	0.819	0.416

No significant gender differences were found across all constructs as $p > 0.05$. Thus, H_{01} is accepted.

Table 5
Readiness for the integration of ChatGPT at higher education by Qualification

Construct	t-value	p-value
OPT	0.918	0.362
INO	0.843	0.402
DIS	1.598	0.114
INS	0.349	0.728
Readiness	0.210	0.834

Qualification did not significantly influence readiness scores as $p > 0.05$. Thus, H_{02} is accepted.

Table 6
Readiness for the integration of ChatGPT at higher education by University Type

Construct	t-value	p-value
OPT	0.302	0.763
INO	0.014	0.989
DIS	1.895	0.062
INS	1.396	0.167
Readiness	2.066	0.042*

H_{03} is rejected as p value i.e., $0.042<0.05$. Thus, there exist significant difference between public and private universities educational managers' readiness to integrate ChatGPT at higher education.

Table 7
Readiness for the integration of ChatGPT at higher education by Teaching Experience

Construct	F-value	p-value
OPT	0.558	0.575
INO	1.358	0.263
DIS	0.667	0.516
INS	0.384	0.682
Readiness	0.026	0.974

No significant differences were found in readiness based on years of teaching experience as $p > 0.05$. Thus, H_{04} is accepted.

Discussion

The elevated levels of optimism and innovativeness resonate with the Technology Readiness Index (TRI 2.0) framework articulated by Parasuraman and Colby (2015), affirming that enthusiasm for emerging technologies remains a key driver of adoption. These results mirror those of Lo (2024) and Akpan et al. (2024), who found that educational leaders globally are increasingly viewing AI as a catalyst for administrative efficiency and instructional quality enhancement.

Despite the general positivity, moderate levels of discomfort and insecurity were evident among respondents. These concerns align with the arguments of Klimova, Pikhart, and Kacetl (2023) and Abdelfattah et al. (2024), emphasizing ethical, operational, and data governance anxieties inherent in AI deployment. This echoes the "algorithmic vigilance" framework proposed by Klimova et al., advocating for proactive and anticipatory governance mechanisms in educational institutions.

The absence of gender-based disparities in readiness corroborates prior work by Teo et al. (2015) and more recent findings by Çalışkan (2023), suggesting that technological adoption tendencies have become increasingly gender-neutral within academic leadership contexts. Similarly, qualification-neutral readiness supports the conclusions of Abdullah and Ward (2016) and Pozas et al. (2022), underscoring that receptivity to technological innovation is increasingly decoupled from conventional academic hierarchies.

The slight edge in readiness among public university managers corresponds with the findings of Romero (2024) and Bolliger and Halupa (2022), who argued that public institutions often experience greater strategic imperatives for AI integration, particularly due to government-driven modernization policies. Nevertheless, the small magnitude of the difference suggests that private universities are not fundamentally lagging but may require targeted support strategies to close minor readiness gaps.

The finding that managerial experience does not significantly impact readiness is consistent with research by Tajik (2024) and Mbwambo and Kaaya (2024), who argue that the rapid pace of technological evolution has flattened traditional experiential hierarchies, making adaptability and openness more critical than tenure in determining readiness for AI integration.

Taking collectively, these results affirm a cautiously progressive stance toward AI integration among educational managers. Enthusiasm for ChatGPT is tempered by pragmatic concerns around ethical and operational risks. Similar dynamics were observed by Al-Worafi (2024) in Middle Eastern higher education contexts and by Sreeram, Nair, and Rahman (2024) across South Asian institutions, underscoring the global resonance of these patterns. This reflects a broader trend where optimism about AI's transformative potential is moderated by a growing awareness of its complex implications for governance, pedagogy, and institutional identity.

Conclusions

This study revealed that educational managers in Lahore's higher education sector exhibit a strong level of readiness for ChatGPT integration, characterized by high optimism and innovativeness. Readiness was found to be largely unaffected by demographic factors such as gender, qualification, and teaching experience, reflecting a broad-based acceptance of technological advancement across different managerial profiles.

Although managers from public universities demonstrated slightly greater readiness compared to their counterparts in private institutions, the difference was modest. This suggests that institutional type may influence readiness to a limited extent, but overall receptivity to AI integration is widely shared.

Despite the generally positive outlook, moderate levels of discomfort and insecurity were recorded, pointing towards underlying concerns regarding the ethical use, operational challenges,

and data governance issues associated with AI deployment. These findings indicate that, while enthusiasm is high, structured frameworks addressing ethical considerations, user trust, and operational protocols are necessary to facilitate smooth implementation.

The findings suggest that higher education institutions are strategically positioned to embrace ChatGPT and similar AI technologies. However, to maximize the benefits of AI integration, it is essential to systematically embed critical thinking about AI ethics, digital literacy, and operational readiness into institutional training programs. As Helpern (2014) emphasized in the context of critical thinking, the successful adoption of innovations requires explicit and targeted efforts. By integrating structured AI preparedness initiatives into managerial development, universities can further enhance both trust and efficacy in technological adoption.

Ultimately, the strategic alignment of optimism with institutional support mechanisms can ensure that the adoption of ChatGPT contributes meaningfully to the administrative and educational advancement of Pakistan's higher education sector.

Limitations and Directions for Future Research

While the study achieved its objectives, several limitations must be acknowledged. The cross-sectional nature of the research provides only a temporal snapshot of readiness for ChatGPT integration; longitudinal studies would better capture changes over time. Additionally, the use of purely quantitative methods may have restricted deeper exploration of nuanced attitudes and hidden concerns, suggesting the need for qualitative approaches in future research. Finally, while this study contributes valuable local insights, international comparative studies could provide a broader understanding of contextual factors influencing AI adoption across educational systems.

Recommendations

Based on the findings and discussion of this research study, the following recommendations are proposed:

- Institutions should prioritize awareness-building initiatives by conducting regular workshops, seminars, and training sessions on the effective and ethical use of ChatGPT in higher education environments.
- It is recommended that universities develop comprehensive AI integration frameworks, including clear operational guidelines, data privacy protocols, and academic integrity safeguards, to ensure responsible adoption.
- Special support programs should be offered to private universities, including mentorship initiatives and targeted funding opportunities, to bridge minor readiness gaps identified in this study.
- Leadership development programs for academic managers should incorporate specialized modules focused on the practical use and governance of ChatGPT and similar AI tools.
- Longitudinal research is recommended to monitor how perceptions, practices, and operational uses of ChatGPT evolve among educational managers over multiple academic years.
- Further studies should be conducted to investigate the psychological and organizational roots of discomfort and insecurity towards AI adoption, offering deeper insights for intervention strategies.
- Readiness assessments across different academic disciplines beyond the Social Sciences are advised to identify and address unique integration challenges faced by faculties such as STEM, Business, and Health Sciences.
- Policy-oriented research should be encouraged to examine how national and institutional AI policies shape managerial attitudes and adoption behaviors, offering a foundation for evidence-based policy adjustments.

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