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THE MEDIATING ROLE OF ARTIFICIAL INTELLIGENCE IN PROMOTING DIGITAL SUSTAINABILITY AND STUDENT SATISFACTION IN HIGHER EDUCATION COUNSELLING: EVIDENCE FROM SEM ANALYSIS

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ABSTRACT

Artificial intelligence is a growing intervention in the services of higher education, although there is still little evidence regarding its use in university counselling, especially in Arab universities, where there are governance and privacy limitations that influence its use. This paper hypothesised the mediating role of AI to determine the relationships between institutional conditions and counselling outcomes in Jadara University. The study measured four main constructs: digital and administrative readiness, institutional support and ethical framework, AI adoption, and counselling outcomes, which comprised digital sustainability and student satisfaction, through a cross-sectional survey of 220 students. AI human integration was treated separately as an additional preference measure rather than as a core construct. The reliability ($\alpha = 0.94$; subscales $\alpha = 0.85$-0.90) was good, and the sampling adequacy was favorable to factor analysis (KMO = 0.91; Bartlett $p < .001$). The bootstrap mediation-based covariance-based SEM has been estimated using CB-SEM through AMOS; the model fit was acceptable ($\chi^2/df = 2.41$, CFI = 0.94, TLI = 0.92, RMSEA = 0.062). The scale scores of readiness, adoption, and AI human integration were high (M = 3.71, M = 3.84, and M = 3.92). Regression indicated readiness ($b = 0.54$, $p < .001$), institutional support ($b = 0.38$, $p < .001$) explained 45% of the variability in adoption ($R^2 = 0.45$). In SEM, readiness had a significant influence on adoption ($b = 0.51$, $p < .001$) and institutional support had a significant influence on adoption ($b=0.36$, $p<.001$). The impact of AI on digital sustainability ($b = 0.68$, $p < .001$) had the most significant effect on student satisfaction ($b = 0.57$, $p < .001$). The indirect effects were also considerable, such as readiness-adoption-sustainability (0.35; 95% CI 0.24-0.49) and sequential readiness adaptation satisfaction (0.22; 95% CI 0.13-0.31). Ethical support and institutional preparedness enhance the results of counselling by adopting AI, which encourages a hybrid approach, where analytics may be used together with counsellor judgment, as well as investment in infrastructure, ethical policy, and staff training.

KEYWORDS: Artificial Intelligence, Digital Sustainability, Student Satisfaction, University Counselling, Structural Analysis

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1. INTRODUCTION

Higher education is being transformed due to the rapid development of artificial intelligence (AI). The application of AI in universities is growing both in instruction and assessment, as well as in student support and psychological counselling. With its capacity to analyze massive amounts of data, offer instant personalized assistance, and improve evidence-based institutional decision-making, AI is playing a pivotal role in elevating the standard of educational services (Garzón, Patiño & Marulanda, 2025). Recent literature has noted an explosion in interest in the artificial intelligence of psychological therapy due to the growing academic and social pressure on students. AI has also shown the ability to evaluate the actions, predict possible psychological risks, and provide recommendations to support early treatment (Zhang et al., 2024; Hao et al., 2025).

Despite these improvements, professional and ethical issues of data protection, the transparency of AI algorithms, and the accountability of the counsellor remain regarding the use of AI in therapy. There are indicators that a balanced approach is reached when analytical opportunities offered by AI are combined with human experience of counsellors, which would allow reaching the balance between technical accuracy and emotional support (Palmer et al., 2025; Roy et al., 2026). There is a growing demand for research on Arab universities' preparedness to incorporate AI into counselling. The Arab universities can be considered a topical context since most of the institutions in the area are actively increasing digital services and working in specific cultural demands, organization systems, and information security conditions. Nevertheless, the empirical research on Arab higher education is rare, and it is not clear how the digital readiness, institutional support, and ethical governance influence AI adoption in counselling in relation to better-researched situations (Molina-Carmona & García-Peñalvo, 2024; Sova et al., 2024).

There has been little use of AI in mental health counselling, despite the fact that colleges have increased their usage of numerous digital technologies. The majority of research has ignored the connection between digital preparedness, institutional backing, ethical frameworks, and the adoption of AI in counselling in favour of studying how to educate and learn. Digital infrastructure, human skills, and ethical policies governing technology usage are crucial to digital transformation, according to the literature (Baigabylov et al., 2025). In addition, there is a dearth of studies that use sophisticated structural modelling techniques like SEM to examine the relationship between digital sustainability and counselling service quality (Sayaf et al., 2021; Kline, 2023). This emphasizes the significance of developing a model that delineates the relationship between digital preparedness, institutional backing, and ethical standards as they pertain to adoption, and how the latter impacts digital sustainability and student happiness.

There is a lack of clear institutional policies guiding the ethical use of smart technologies, inadequate counsellor training, and gaps in technical readiness, which contribute to the underutilization of AI in counselling compared to its potential (Hao et al., 2025; Florea & Florea, 2020). Despite the numerous institutions that have made investment on digital infrastructure, technical capacity is not enough. In a number of instances, the institutional support is minimal, and the ethical provisions are not clearly laid down to inhibit a safe and consistent application of smart technologies in counselling services. As a result, studies are required to determine the effects of AI adoption on digital sustainability and student happiness, as well as the role that institutional support, digital preparation, and ethical frameworks play in this process.

In light of previous research (Garzón, Patiño & Marulanda, 2025; Sova et al., 2024; Algerafi et al., 2023), the current study intends to do the following: analyze the current state of digital readiness and infrastructure; investigate the kind of institutional support and ethical frameworks that govern smart systems; measure the extent to which counselors and students have adopted AI; and finally, determine the impact of this adoption on digital sustainability and student satisfaction. In addition to answering questions about digital readiness, institutional support, AI adoption, its effects on sustainability and service quality, and the mediating role of adoption between digital sustainability and student satisfaction, this study aims to develop a structural model illustrating the relationships among these variables using structural equation modelling (SEM) (Kline, 2023; Molina-Carmona & García-Peñalvo, 2024).

2. LITERATURE REVIEW

2.1. Sustainable Digital Transformation in Higher Education

According to recent studies, sustainable digital transformation in higher education is a process within an institution, rather than merely the provision of new technologies (Garzón, Patiño &

Marulanda, 2025; Sova et al., 2024). It includes the development of digital infrastructure, the enhancement of human potential, and the creation of clear legal and ethical models. According to Mohamed Hashim et al. (2022), successful digital projects require institutional management with a high level of change management and leadership competencies in relation to staff development, as weak training leads to the emergence of a gap between potential and actual technology implementation. Molina-Carmona & García-Peñalvo (2024) emphasize the crucial role of digital governance and ethical schemes in supporting sustainable digital change because the absence of clear legislation on data protection and transparency limits the successful and safe use of new technology. However, as much as these studies explain the institutional drivers of digital transformation, they pay little attention to the counselling services of universities. Specifically, they fail to provide a clear indication as to how governance, staff competence, and infrastructure determine AI utilisation in counselling or impact service delivery outcomes.

2.2. Artificial Intelligence in Tertiary Education

Artificial Intelligence has often been discussed in terms of its involvement in educational support, academic decision-making enhancement, and service quality improvement. Salas-Pilco & Yang (2022) suggested that AI-based student data analysis positively influences the prediction of academic achievement and supports the implementation of more personalized educational interventions. Bhatia et al. (2024) found that intelligent systems may provide the first automated assistance, helping students to quickly access the appropriate support resources, in particular, in cases when they are utilized as an addition to human consultants, but not as substitutes for them. As pointed out by Molina-Carmona & García-Peñalvo (2024), there is a need to specifically establish policies under which the use of AI is to be applied, particularly to the protection of student data, its transparency, and responsibility. Regardless of the growing interest, the academic and administrative applications of AI have been the most studied. The application of AI in psychological and counselling services is limited, partly due to increased privacy threats, ethical implications, and the lack of institutional policies governing accountability and safe application. Because of this, it has not often been studied as a mediating process in which institutional preparedness is transformed into the outcome of counselling service quality.

2.3. Artificial Intelligence in University Counselling

Investigations into AI applications within university counselling are novel yet expanding. Zhang et al. (2024) demonstrated that intelligent algorithms can assess students' written and spoken language to identify early indicators of psychological stress, hence facilitating preventive interventions. Roy et al. (2026) defined digital psychological monitoring systems that were based on AI and helped to improve service continuity and increase student happiness. Ethical considerations dominate this environment. Ping (2024) note that strict ethical standards are required to ensure proper use of AI in counselling, given the confidentiality that personal information has, and the trust that is attached to psychological services. According to Palmer et al. (2025), hybrid counselling models that combine intelligent analysis with human emotional support are more effective than relying on either element alone. Nonetheless, the available literature normally considers individual factors, including assessment, follow-up, or ethical compliance. They seldom suggest a comprehensive model that would connect institutional readiness and ethical favor to the adoption of AI and subsequently to the downstream, such as digital sustainability and satisfaction among the students.

2.4. Conceptual Framework and Research Gap

According to the conceptual framework of the research on the theory of technology adoption, the study suggests that university counselling may incorporate AI adoption. However, it relies on three facilitating conditions: digital preparedness, institutional support, and a clear ethical government system. This literature underscores the significance of these preliminary characteristics in facilitating intelligent applications within higher education institutions (Garzón, Patiño & Marulanda, 2025; Sayaf et al., 2021). The use of AI is considered a key mediating variable, which expresses the effects of preparation, institutional support, and ethical frameworks on the outcomes, including digital sustainability and student satisfaction (Sova et al., 2024). Adoption is contingent upon the availability of infrastructure, as well as counsellors' understanding, training, confidence in AI tools, and supportive institutional policies. The framework is set in such a way that both direct and mediated relationships between institutional conditions, AI adoption, and counselling outcomes will be investigated (Kline, 2023).

Although the role of digital preparedness, artificial

intelligence, and ethical frameworks has been underlined in earlier research, there is a scarcity of literature that explicitly combines these factors in the context of university counselling. Limited research has investigated AI as a mediator connecting institutional preparation and ethical governance to outcomes such as digital sustainability and student satisfaction, especially within the Arab higher education environment. This gap highlights the necessity for a thorough model to examine these linkages from Figure 1.

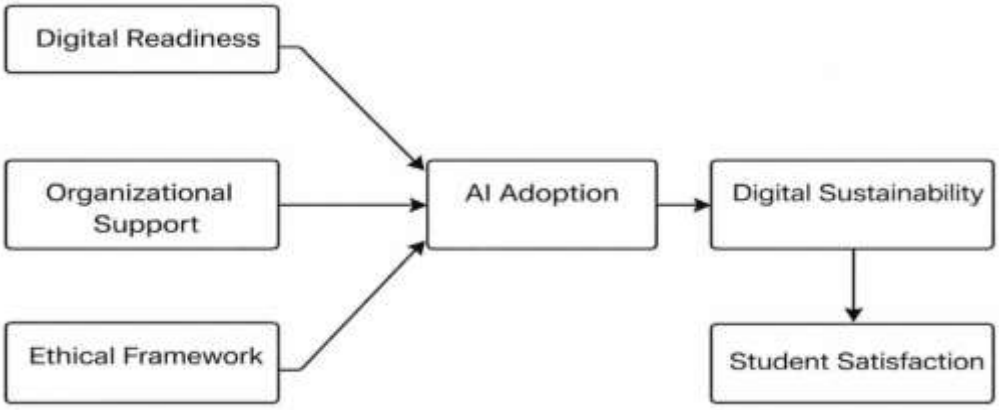

Figure 1: Research framework

3. RESEARCH METHODOLOGY

3.1. Research Design

The method employed in this research was a quantitative, cross-sectional survey, which tested the hypothesis of the mediation between institutional and digital preparedness for the use of AI and two outcomes: digital sustainability and student satisfaction with university counselling services. The research design was right since the constructs were latent, the hypothesized relationships were directional, and the research needed to estimate the multiple relationships at once, with indirect effects, in a single structural model (Kline, 2023). The student was treated as the unit of analysis, and Jadara University counselling services were the setting where the introduction of the digital counselling process and smart support tools was taking place. The model identified exogenous factors such as digital and administrative preparedness and institutional support over ethical framework, a mediator AI adoption, and outcomes of digital sustainability and student satisfaction. This model was consistent with theory-guided testing and enabled the comparison of direct, indirect, and total effects in uniform measurement conditions.

3.2. Data Collection

The structured questionnaire that was used to collect primary data was given to university students. This research collected 220 valid responses, which justify the importance of a stable estimation in structural equation modelling since it has an adequate ratio of respondents to parameters and is statistically powerful enough to mediate. The simple random sampling was used to recruit students in various colleges to ensure variation in the programmes. The last sample was 220 valid responses, from the population size of 275 students at Jadara University, producing a survey response rate of 80%. The questionnaire consisted of demographics (gender, age group, previous usage of counselling) and four well-specified constructs namely digital and administrative preparedness, institutional support and ethical framework, AI adoption, and outcomes such as digital sustainability and student satisfaction. The AI human integration perceptions were measured on a scale of an additional attribute, which exists as preferences towards hybrid counselling. They will be used as a complementary measure in the analysis. The rating was done using a five-point Likert scale, with strong disagreement to strong agreement, so that the items can be compared across constructs. The measure had 29 items in the four scales, and internal consistency had been evaluated before model estimation.

3.3. Data Analysis

The data screening and descriptive statistics were generated to summarise the sample profile and central tendencies of every construct. Cronbach's alpha was used to test reliability and assess internal consistency between scales. The factor analytic procedures and item loading were used to evaluate construct validity by determining whether indicators used in the study measured the latent variables they are intended to measure. Covariance-based SEM was used to estimate the structural model in CB-SEM through AMOS. Standard indexes were used to test model fit; to estimate the extent to which the

hypothesised structure was suitable to the observed data (Kline, 2023). The test mediation with bootstrap resampling was employed to come up with indirect effect confidence intervals, as indirect paths are not normally distributed, and bootstrap estimation is a more believable inference method than normal theory tests. Two indirect pathways were subject to test in the mediation analysis. The readiness and institutional support can affect digital sustainability with the adoption of AI. It was a sequential test in which readiness and institutional support have an influence on student satisfaction with AI adoption and subsequently with digital sustainability.

3.4. Ethical Considerations

There were ethical protection measures because the data about the counselling was sensitive. The respondents were made to participate voluntarily, informed consent was taken at the beginning of the survey, and the respondents were told that they could pull out at any time without any repercussions. No personal data was gathered, and the findings were presented in totals so that personal data was not disclosed. Data were kept in a safe place with limited access and were not utilized in any other way. Considering the context of the topic, the survey was not aimed at the collection of clinical disclosures; it contained only perceptions of service processes, and no personal mental health information was required. There was also a focus on the principles of responsible AI governance, i.e., privacy, transparency, and correct limits on automated decision support in counselling, which were in line with the focus of the ethical framework of the study.

4. RESULTS

This section provides a comprehensive synopsis of the statistical findings from the field survey that was given to 220 students. In order to investigate the mediating function of AI adoption, this analysis examines demographic data, the instrument's validity and reliability, descriptive statistics, correlation, hypothesis testing with linear regression and structural equation modelling (SEM), and mediation testing with the Bootstrap method.

4.1. Demographic Characteristics of the Sample

Table 1 shows the demographic distribution of the study sample according to gender, age, and previous experience with university psychological counselling services from 220 students.

Table 1: Demographic Characteristics of the Study Sample

Variable	Category	Frequency (n)	Percentage (%)
Gender	Male	91	41.4
	Female	129	58.6
Age	<20	41	18.6
	20–24	137	62.3
	≥25	42	19.1
Previous Use of Counselling Services	Yes	105	47.7
	No	115	52.3

Table 1 shows that the sample was predominantly female, with 129 participants (58.6%), compared with 91 males (41.4%). Most respondents were aged 20–24 years, accounting for 137 cases (62.3%), while those aged under 20 and 25 or above represented 18.6% and 19.1%, respectively. Previous counselling use was fairly balanced, although non-users slightly predominated (52.3%).

4.2. Cronbach's Alpha Reliability

The reliability coefficients of the four scales and the overall instrument were calculated. All values were high, indicating good internal consistency for all scales.

Table 2: Cronbach's Alpha for Study Scales

Scale	Number of Items	α Value
Digital and Administrative Readiness	8	0.87
AI Adoption	7	0.90
AI-Human Integration	6	0.85
Sustainability and Satisfaction	8	0.89
Overall Instrument	29	0.94

Table 2 results demonstrate that all scales achieved academically acceptable reliability levels, indicating the instrument is consistent and suitable for statistical analyses and predictive modelling. The values of Cronbach's alpha lie between 0.85 and 0.90 in the case of separate scales, which indicates good measurement of each latent variable. The alpha of the general instrument was 0.94, a great indicator of consistency, and indicated that the questionnaire is appropriate for further statistical analysis and

estimation of the model.

4.3. Exploratory Factor Analysis (EFA)

Data adequacy for factor analysis was tested using the Kaiser-Meyer-Olkin (KMO) measure and Bartlett's test.

Table 3: Data Adequacy for Factor Analysis (KMO & Bartlett)

Test	Value	Significance Level
KMO	0.91	—
Bartlett's Test	2143.27	p < .001
Total Variance Explained	68.4%	—

Table 3 findings demonstrate excellent sample adequacy for factor analysis (KMO = 0.91) and a significant Bartlett's test (p < .001), validating appropriate inter-item correlations for factor extraction. The extracted factors explained 68.4% of the total variance, which suggests that the factor structure accounted well for the observed item variation.

4.4. Descriptive Statistics for Study Scales

Table 4: Means and Standard Deviations for Study Scales

Scale	Mean (M)	SD	Response Level
Digital and Administrative Readiness	3.71	0.64	High
AI Adoption	3.84	0.59	High
AI-Human Integration	3.92	0.62	High
Sustainability and Satisfaction	3.78	0.66	High

Table 4 shows consistently high mean scores across all study scales, ranging from 3.71 to 3.92, with moderate standard deviations from 0.59 to 0.66. AI Human Integration recorded the highest mean (M = 3.92, SD = 0.62), while Digital and Administrative Readiness had the lowest, though still high (M = 3.71, SD = 0.64).

4.5. Correlation Analysis (Pearson r)

Table 5: Correlations among Main Variables

Variable	Readiness	Adoption	Integration	Sustainability
Readiness	1	—	—	—
AI Adoption	0.67***	1	—	—
AI-Human Integration	0.58***	0.63***	1	—
Sustainability & Satisfaction	0.54***	0.72***	0.63***	1

Note: p < .001

Table 5 indicates positive and statistically significant correlations among all main variables at p < .001. AI adoption was most strongly associated with sustainability and satisfaction (r = 0.72), followed by readiness with adoption (r = 0.67). Integration also correlated moderately to strongly with adoption (r = 0.63) and sustainability (r = 0.63), suggesting interdependent relationships across the model overall.

4.6. Hypothesis Testing Using Linear Regression

4.6.1. Effect of Readiness and Institutional Support on AI Adoption

Table 6: Multiple Regression Predicting AI Adoption

Independent Variable	β	t	p
Digital & Administrative Readiness	0.54	8.12	< .001
Institutional Support & Ethical Framework	0.38	6.03	< .001
Total R^2	0.45	—	—

As indicated in Table 6, the two predictors have a significant positive effect on AI adoption. The stronger effect is on the digital and administrative readiness (b = 0.54, t = 8.12, p < .001), institutional support and ethical framework also make a meaningful contribution (b = 0.38, t = 6.03, p < .001). Their joint explanations reveal 45 per cent adoption variance.

4.6.2. Effect of AI Adoption on Sustainability and Satisfaction

Table 7: Regression Results for AI Adoption Impact

Relationship	β	t	p
AI Adoption → Sustainability	0.63	10.04	< .001
Sustainability → Satisfaction	0.52	8.21	< .001

Table 7 shows that AI adoption had a strong positive effect on sustainability (β = 0.63, t = 10.04, p < .001). Sustainability also had a significant positive effect on student satisfaction (β = 0.52, t = 8.21, p < .001). These values support the proposed direct relationships.

4.7. Structural Equation Modelling (SEM)

Table 8: Model Fit Indices

Index	Value	Acceptable	Judgment
χ^2/df	2.41	< 3	Very Good
CFI	0.94	≥ 0.90	Excellent
TLI	0.92	≥ 0.90	Excellent
RMSEA	0.062	≤ 0.08	Good

Table 8 shows that the SEM model achieved satisfactory to excellent fit across all indices. The chi square divided by degrees of freedom was 2.41. CFI (0.94) and TLI (0.92) exceeded the recommended threshold of 0.90, while RMSEA (0.062) remained within acceptable limits.

4.8. Standardized Path Coefficients

Table 9: SEM Path Coefficients

Path	β	Sig.	Interpretation
Readiness & Institutional Support → AI Adoption	0.51	p < .001	Strong direct effect
Ethical Framework / Institutional Support → AI Adoption	0.36	p < .001	Significant effect
AI Adoption → Digital Sustainability	0.68	p < .001	Strongest effect in the model
Digital Sustainability → Student Satisfaction	0.57	p < .001	Direct indicator of satisfaction

Table 9 displays significant positive path coefficients for all hypothesized relationships at p < .001. Readiness and institutional support had a strong effect on AI adoption (β = 0.51), while ethical framework and institutional support also contributed significantly (β = 0.36). The strongest effect was AI adoption on digital sustainability (β = 0.68), which improved student satisfaction (β = 0.57).

4.9. Bootstrap Mediation Analysis

Table 10: Bootstrap Mediation Results (Indirect Effects)

Mediation Path	Indirect Effect	95% CI (LL–UL)	Significance	Interpretation
Readiness → Adoption → Sustainability	0.35	0.24–0.49	Significant	Strong, direct mediation
Institutional Support → Adoption → Sustainability	0.24	0.15–0.37	Significant	Partial, significant mediation
Readiness → Adoption → Sustainability → Satisfaction	0.22	0.13–0.31	Significant	Full causal pathway
Institutional Support → Adoption → Sustainability → Satisfaction	0.18	0.10–0.27	Significant	Confirmed sequential mediation

Table 10 affirms that there is a significant mediation via AI adoption. Sustainability is indirectly enhanced through adoption with the help of readiness (0.35; CI 0.24-0.49), and institutional support exhibits a small but significant indirect impact (0.24; CI 0.15-0.37). Sequential paths to satisfaction also play an important role, which means that adoption and sustainability convey the effects on student satisfaction together.

5. DISCUSSION

The discussion constructs the interpretation of the relationships between digital and administrative preparedness, institutional preparedness, ethics administration, AI adoption, digital sustainability, and student satisfaction with university counselling services. In addition to elucidating the study's unique scientific contribution, it offers concrete suggestions and recommendations that advance university-based digital psychological counselling services. Several important trends are shown in the data, which provide light on the reasons behind the use of AI in university psychological therapy. The digital and administrative preparedness is high, which means the university has sufficient IT capacity to facilitate smart counselling services. The fact that the AI adoption scores are relatively high also shows that students are not averse to using AI-enabled tools in counselling situations (Mardia et al., 2024). Appreciation from students for the hybrid model that incorporates both human counsellors and intelligent analysis. Relationships between the primary variables are robust and statistically significant. Its pivotal position in the model is seen in the direct impact of adoption on satisfaction and sustainability. It consisted of students of various disciplines and age

categories and had a widely distributed gender balance. But since random sampling was employed, the results are supposed to be taken as the indicators, but not as the representatives of the entire student population. A significant percentage of students have experience with counselling services, facilitating precise assessment of digital preparedness, AI implementation, and satisfaction levels.

The data shows that digital and administrative preparedness, coupled with institutional support and an ethical governance framework, substantially forecast AI in university counselling services. This stresses that institutional policies and technical infrastructure are crucial to the success of digital transformation. According to the findings, improved sustainability is mostly caused by the deployment of AI, which has a good effect on student satisfaction. In other words, this proves that AI can boost productivity and quality of service. The study adds weight to the argument that a more well-rounded and effective counselling model is the result of combining human counsellors with cognitive analysis. A robust association exists between the deployment of AI, digital sustainability, and student satisfaction. A statistically significant association exists between the integration of artificial intelligence and the human role, as well as all other variables. These findings establish a rational basis for the ensuing investigations and corroborate the overarching trajectory of hypotheses H1, H3, and H4. The robustness of the correlations signifies coherence within the conceptual model and provides an initial indicator of the model's appropriateness for effective testing via Structural Equation Modelling (SEM).

Although the statistical model is good and the population of the study is heterogeneous, there are some limitations that have to be considered while interpreting the results. The long-term causal linkages are problematic because the study is cross-sectional in nature. Second, because only one university was involved, the results could not apply to other schools that use other types of technology. Third, students' social desirability bias could affect the results if they are relying on self-reports. The statistical analysis corroborated that the preparedness of digital infrastructure and administrative frameworks directly influences the deployment of AI. The results predominantly corroborate Hypotheses H1–H4. They moreover furnish the statistical foundation for evaluating mediation through the Bootstrap procedure.

Findings from this study are in line with what has been said in the literature on digital transformation and university counselling services recently. Results show that AI adoption was strongly and directly impacted by digital and administrative readiness. According to Roussos et al. (2025), the presence of advanced technologies is not the only determinant of digital transformation requirements; what really matters is institutional readiness and a flexible digital infrastructure that can effectively activate intelligent systems. These findings are in line with those of Mohamed Hashim et al. (2022), who also found that in order to better integrate technology into university services, technical preparedness, system modernization, and human capacity building are requirements.

Digital preparedness, institutional support, and the ethical framework directly influence the enhancement of AI adoption in university psychological counselling. Furthermore, the deployment of AI has shown a distinct impact on improving digital sustainability. A positive correlation was identified between digital sustainability and student satisfaction with service quality, suggesting that seamless access to and continuity of digital services directly affects user pleasure. The SEM findings demonstrate that AI adoption is the predominant element in the model, showing the greatest impact on digital sustainability. This reliance on smart technologies has ceased to be a technical alternative that promotes institutional readiness and moral support to boost service quality and sustainability. Digital sustainability was substantially correlated with student satisfaction indicating that service continuity and stability bolster student trust and elevate satisfaction levels.

Results suggest that there is a causal pathway, unique to each, which begins with institutional preparation and ethical support, moves through the adoption of AI, and ends with digital sustainability and student satisfaction. This structural model indicates that the advancement of digital services in psychological counselling relies not solely on technological availability but also on practical adoption and continuous integration within the university environment.

The current research backs up the findings of Molina-Carmona & García-Peñalvo (2024) that ethical frameworks and institutional support are crucial for advancing the adoption of AI. The findings highlighted the importance of organizational environment and institutional policies in promoting the ethical application of AI technology in mental health counselling, as there was a statistically significant correlation between institutional backing and AI adoption. The results corroborate the claims made by Ping (2024), who highlighted the

significance of ethical frameworks in easing concerns about privacy protection, and show how they may be used to build trust in digital systems.

This finding is in line with a review published in Salas-Pilco & Yang (2022) that found intelligent systems help increase service reach, improve efficiency, and decrease the strain on human resources; it also found that AI adoption has a strong direct effect on digital sustainability. According to Bhatia et al. (2024), intelligent systems may offer services all day, every day, which means that counselling services are more consistent and students have better access to them.

6. CONCLUSION

The research reveals that AI implementation is the most important factor in determining the readiness of an institution for digitally sustainable counselling and increased student satisfaction in universities. The structural model revealed that AI adoption was significantly predicted by both digital and administrative preparedness and institutional support, which showed that preparedness is not only a background phenomenon but also a direct facilitator of use. This is congruent with the previous evidence that sustainable digital transformation requires infrastructure, leadership, skill development, and explicit governance, creating trust in digital services. The results also demonstrated that AI adoption had the most significant impact on digital sustainability and that sustainability subsequently forecasted student satisfaction. The students consider stable, accessible, and consistent counselling services to be important and that AI can enhance these factors when it enhances continuity, responsiveness, and the efficiency of services instead of substituting the counsellor. This is supported by the type of research that indicates that smart systems are capable of increasing support capacity and having unlimited access. However, the human element is still critical to counselling on the relational and ethical aspects. Preparation and policy support thus contribute in an indirect way through an adoption channel, which further supports the argument that technology only creates value when embedded as part of routine practice, and with credible ethical protection. The research endorses a counselling to students whereby intelligent analytics reinforce the initial evaluation and service persistence, whereas counselors deliver judgment, empathy, and responsibility.

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