

Research Article

Comparative Analysis of e-Readiness and e-Learning Integration in Kenyan Universities Using the Unified Theory of Acceptance and Use of Technology-2

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Abstract

e-Learning has become a revolution in higher education; it is changing how knowledge is delivered and consumed in our increasingly digital world. The COVID-19 pandemic accelerated this shift as institutions of learning rapidly adopted online platforms, resulting in a massive upsurge in demand for e-Learning solutions. This evolution has not only increased access to education but also improved the mode in which content is being delivered, from the traditional brick-and-mortar classroom to a much more flexible and technology-driven approach. This study provides a comprehensive analysis of e-Readiness and e-Learning integration in Kenyan public universities through the lens of the Unified Theory of Acceptance and Use of Technology-2 (UTAUT2). Employing a mixed-methods approach, the research combined quantitative surveys with qualitative interviews and focus group discussions to assess technological infrastructure, faculty preparedness, and institutional support while uncovering key barriers to e-Learning adoption. The findings indicate moderate levels of e-Readiness, with significant gaps in infrastructure (mean = 2.35) and institutional support (mean = 2.80), though faculty preparedness demonstrated relatively higher scores (mean = 3.20). Challenges identified include unreliable internet access, outdated equipment, insufficient training, and cultural resistance to digital teaching methods, particularly among faculty members and students with limited digital literacy. Despite these barriers, the study highlights a growing acknowledgment of e-Learning's potential to improve educational access and outcomes. Recommendations emphasize prioritizing investment in reliable internet, modern digital tools, and comprehensive faculty training programs to build digital literacy and pedagogical competencies. Additionally, fostering institutional policies that standardize e-Learning strategies and promoting cultural acceptance through awareness campaigns and peer training are essential for effective integration. The research underscores the need for universities to address these gaps to optimize e-Learning adoption and align with global digital education standards. Future research should focus on regional disparities, longitudinal progress, and the development of standardized frameworks to enhance the implementation of e-Learning across diverse educational contexts in Kenya. By addressing these challenges, Kenyan universities can position themselves as leaders in delivering equitable, technology-driven education, equipping students with the skills required in an increasingly digital world.

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Keywords

e-Readiness, Educational Technology, e-Learning Integration, Kenyan Universities, Unified Theory of Acceptance and Use of Technology-2 (UTAUT2)

1. Introduction

e-Learning has become a revolution in higher education; it is changing how knowledge is delivered and consumed in our increasingly digital world. The COVID-19 pandemic accelerated this shift as institutions of learning rapidly adopted online platforms, resulting in a massive upsurge in demand for e-Learning solutions. This evolution has not only increased access to education but also improved the mode in which content is being delivered, from the traditional brick-and-mortar classroom to a much more flexible and technology-driven approach.

1.1. Global Overview of e-Learning

Harnessing digital technologies, e-Learning has revolutionized the higher education sector [1-4]. The e-Learning market on a global level is expected to hit almost \$1 trillion by the year 2032, with a Compounded Annual Growth Rate (CAGR) of 15.87% during the period from 2022 to 2027 [5]. Notably, during the height of the pandemic in 2020, there was a surge in demand for online learning courses by as much as 400%, pointing out the very urgent need for flexible and accessible educational frameworks. Such rapid growth in this sector demonstrates the enormous potential in e-Learning to improve education around the world [6].

This growth in the adoption of e-Learning corresponds with a more general trend; around 60% of internet users have been taking online courses because these platforms bring flexibility and accessibility [7]. e-Learning has been visibly integrated into the higher education systems of the Global North, particularly in North America and Western Europe, compared to most Global South regions [8-10]. That fact further underscores the disparities in the adoption rates of educational technologies (EdTech) in various parts of the world. However, challenges still exist worldwide; in many cases, developing countries face poor infrastructure and a lack of access to technology, which become barriers to implementing e-Learning effectively [11].

1.2. Regional Perspective on e-Learning in Africa

In Africa, the e-Learning market is expected to grow at a CAGR of 15.2%, an indication of the increasing value it will occupy in the educational landscape of the continent [12]. It is a very unique case for e-Learning because of the varying

economic conditions, infrastructural capabilities, and cultural factors. Innovative initiatives are emerging to enhance the adoption of e-Learning across Africa. For instance, partnerships that will help improve technological infrastructure and increase access to digital resources are very important in overcoming the existing challenges.

Although e-Learning holds the potential to revolutionize education by increasing access for students located remotely or those balancing work with study commitments, there are significant barriers standing in the way [13, 14]. For instance, during the COVID-19 pandemic, access to digital learning resources in Africa was greatly limited; only 37% of countries were in a position to offer effective remote learning opportunities [15]. This situation exposed large disparities in access to education and underlined large urban-rural and rich-poor household gaps. For example, while almost 60% of children and youth from the richest quintile have access to the internet at home, less than 20% of those from the poorest quintile do, which proves the digital divide between different socioeconomic groups [16]. Comparative analyses between African countries show different levels of e-Learning adoption, with some countries doing relatively well in terms of integrating digital education into their higher education systems, while others are far behind because of systemic reasons [17, 18].

1.3. e-Learning in Kenya

In Kenya, the integration of e-Learning into higher education institutions has been gradual but is increasingly recognized as essential for improving educational outcomes [19-21]. The Kenyan government has introduced several policies to encourage the use of Information and Communication Technology (ICT) in education, including the Kenya National Digital Master Plan 2022-2032, an elaborate plan aimed at enhancing quality teaching and learning by incorporating technology into the education system to sufficiently prepare learners for the technology-driven world [22]. Moreover, the Kenyan National Digital Literacy Programme targets digital skills for students at an early age. The programme, launched in 2016, had the objective of providing digital devices for primary school students and training teachers on how to effectively use them in the classroom [23]. The program has delivered over 1.2 million devices to schools, with great improvement in digital literacy among the young learners.

Despite such efforts, the adoption of e-Learning among

public universities remains below optimal. Some of the contributing factors to this challenge include inadequate technological infrastructure, poor training of educators, and differences in institutional readiness [24, 25]. With these challenges notwithstanding, the realization of the benefits of e-Learning are slowly increasing in Kenya. Universities and other higher education institutions (HEIs) are recognizing it as a means of providing quality education to students with different needs. e-Learning can provide access to learning materials and facilitate collaborative learning, where the geographical barriers are overcome [26]. With Kenyan universities still in the process of building their e-Learning capabilities, frequent assessments of readiness at the institutional level is imperative for successful implementation and sustainability. In other words, while e-Learning presents so many opportunities to enhance quality in higher education both globally and regionally in Africa, its seamless integration into Kenyan public universities will depend upon addressing the infrastructural challenges and creating an enabling environment for digital learning.

2. Statement of the Problem

In an ideal educational environment, Kenyan public universities should be equipped with robust digital infrastructure, including reliable internet connectivity, comprehensive access to digital resources, and a faculty well-versed in e-Learning pedagogy. Such an ecosystem would enable seamless e-Learning integration, fostering flexible, accessible, and high-quality education that effectively prepares students for a global, technology-driven economy. In high-income countries, where e-Learning adoption in higher education is nearly 90%, investments in digital learning platforms and infrastructure support continuous, high-quality access to educational resources [27, 28]. This high level of digital readiness is associated with enhanced learning outcomes, higher retention rates, and increased student satisfaction, highlighting the transformative impact of well-supported e-Learning environments [29].

In Kenya, however, the current state of e-Learning falls significantly short of this ideal. Despite government initiatives such as the Kenya National Digital Master Plan 2022-2032 and the National Digital Literacy Programme, substantial gaps in e-Learning infrastructure persist. Recent statistics reveal that only approximately 35% of Kenyans have reliable internet access, with rural areas and public institutions experiencing the most severe connectivity issues [30-32]. Although mobile internet penetration is relatively high at around 83%, stable, high-speed broadband which is a critical factor for effective e-Learning remains limited, thereby hindering the full realization of digital learning experiences [33].

The disparity between the ideal and current e-Learning conditions in Kenyan public universities presents significant challenges. Students frequently encounter unreliable internet,

limited digital resources, and insufficient training in digital tools, resulting in fragmented learning experiences and widening educational inequalities. Low e-Readiness in these universities hinders the achievement of national educational goals, restricting students' competitiveness in the global market and exacerbating socio-economic divides [13, 16]. Addressing these gaps is essential for fostering equitable access to quality education across socio-economic backgrounds and aligning with global standards.

To address these challenges, a comprehensive evaluation of e-Readiness in Kenyan public universities is essential, employing frameworks like the Unified Theory of Acceptance and Use of Technology-2 (UTAUT-2) to identify critical gaps. This study aims to conduct a comparative analysis that will reveal targeted strategies for improvement, such as strengthening digital infrastructure, prioritizing faculty training, and developing sustainable e-Learning policies. By narrowing the e-Readiness gap, Kenyan universities can move toward a more inclusive and effective digital learning environment, aligning the quality of their educational offerings with global standards.

3. Research Objectives

The main objective of this study was to make a comparative analysis of e-Readiness and integration of e-Learning in Kenyan public universities using the Unified Theory of Acceptance and Use of Technology-2 (UTAUT2).

Specific objectives of the study include:

- 1) To determine the e-Readiness of the Kenyan universities in the dimensions of technological infrastructure, faculty preparedness, and institutional support using the Unified Theory of Acceptance and Use of Technology-2 (UTAUT2).
- 2) Investigation into the level of e-Learning integration in university curricula and the platforms and pedagogical methods used.
- 3) To identify and analyze infrastructural, cultural, and policy-related barriers to effective e-Learning integration in Kenyan universities.
- 4) Investigate the relationship between e-Readiness levels and students' and faculty's perceived quality of e-Learning experience.
- 5) Develop specific recommendations for improving e-Readiness and integrating e-Learning better, depending on the research outcome.

4. Research Questions

To guide the investigation, the following research questions will be addressed:

- 1) What are the current levels of e-Readiness among public universities in Kenya, as measured by Unified Theory of Acceptance and Use of Technology-2 (UTAUT2)?

- 2) To what extent has e-Learning been incorporated in the curricula of public universities in Kenya?
- 3) What barriers exist to effectively adopt e-Learning in Kenyan public universities?
- 4) How do e-Readiness levels relate to the perceived quality of e-Learning experiences among students and faculty members?
- 5) What are the actionable recommendations to enhance e-Readiness and improve integration of e-Learning in public universities in Kenya?

5. Significance of the Study

This study holds significant implications for policymakers, educators, and stakeholders in higher education, particularly concerning the United Nations Sustainable Development Goals (SDGs). For policymakers, it highlights critical gaps in digital infrastructure and faculty training, and offers actionable recommendations aligned with SDG 4, which aims at ensuring inclusive and equitable quality education. Educators will similarly gain the knowledge required to advocate for resources and professional development that will improve their pedagogical practices in line with SDG 4.7, covering skills to promote sustainable development. Other stakeholders, such as university administrators and providers of technology

will also obtain knowledge of e-Learning and its systemic inequalities, in contribution toward SDG 10, reduced inequalities. Ultimately, by fostering a conducive digital learning environment, this research seeks to improve academic performance and educational quality in Kenyan public universities, thereby advancing the educational landscape in Kenya and aligning with key SDGs.

6. Literature Review

6.1. Theoretical Framework

This study is theoretically anchored on the Unified Theory of Acceptance and Use of Technology 2 (UTAUT2), which provided a framework for examining the factors that influence e-Learning adoption in Kenyan public universities. The original UTAUT model, developed by Venkatesh, Morris, Davis, and Davis in 2003, focused on technology acceptance within organizational environments and introduced four core constructs: performance expectancy (PE), effort expectancy (EE), social influence (SI), and facilitating conditions (FC) to predict behavioral intention and actual technology use [34] (see Figure 1).

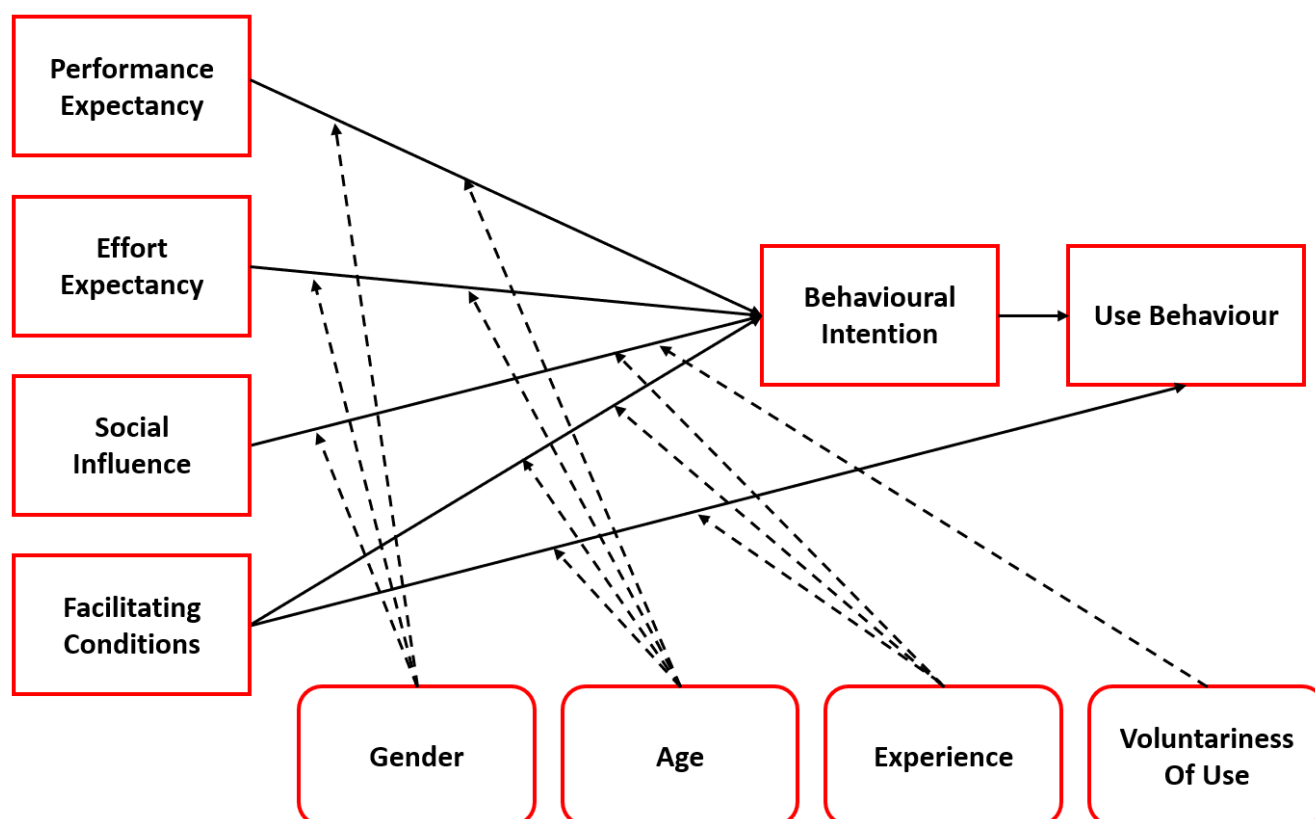


Figure 1. The Unified Theory of Acceptance and Use of Technology (UTAUT).

However, given that this study is situated in a higher education context involving diverse individual users such as students and faculty rather than formal organizational mandates alone, the extended model UTAUT2 is more suitable. Venkatesh, Thong, and Xu enhanced the original model by

incorporating three additional constructs: hedonic motivation, price value, and habit, to better capture factors that affect technology acceptance in personal and consumer settings [35] (see Figure 2).

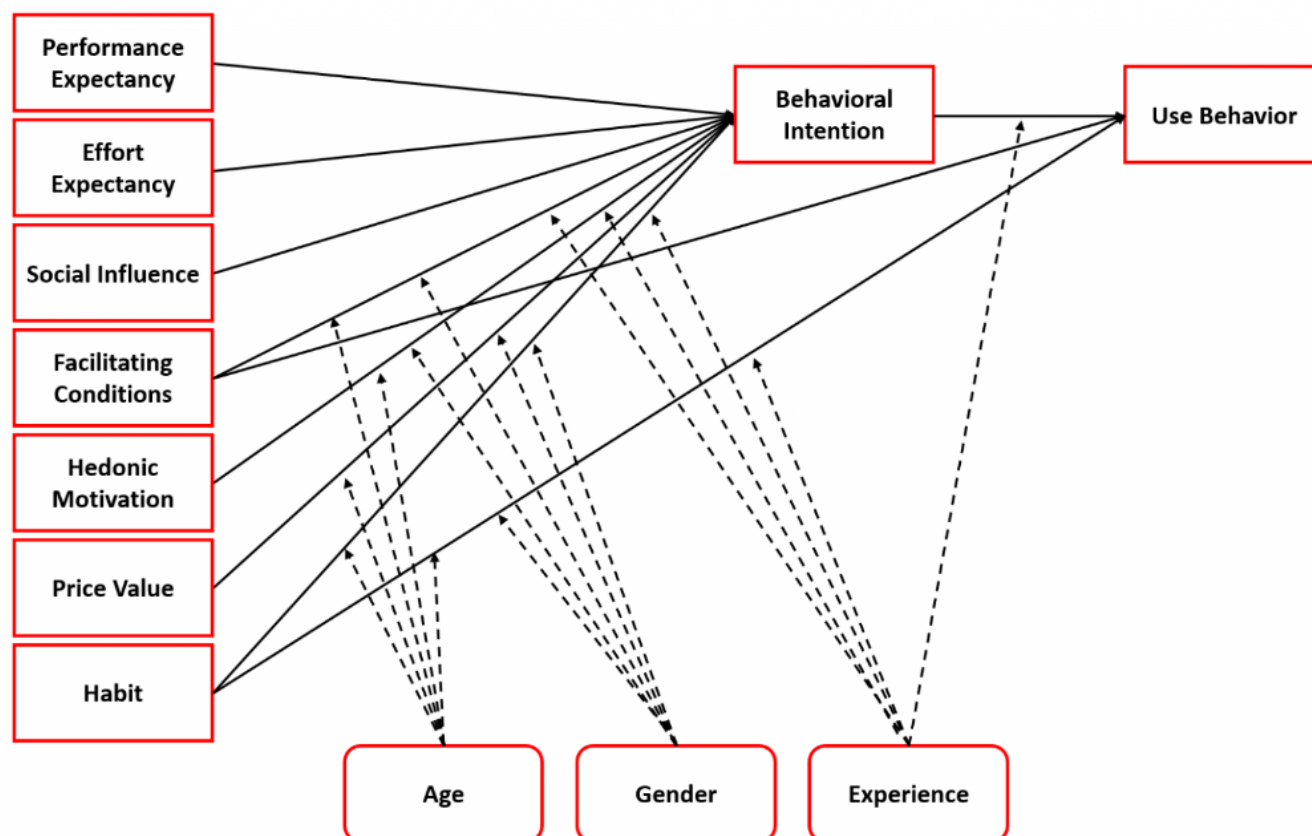


Figure 2. The Unified Theory of Acceptance and Use of Technology2 (UTAUT2).

The selection of UTAUT2 over UTAUT was based on and grounded in the unique characteristics of the research context. First, hedonic motivation is especially relevant in Kenyan universities, where student engagement with e-Learning platforms is often influenced by the intrinsic enjoyment and satisfaction derived from using interactive digital tools. Second, price value addresses a critical concern in resource-constrained environments: the trade-offs users make between the perceived benefits and financial or infrastructural costs of adopting technology. This is particularly salient in many Kenyan public universities where access to devices and reliable internet is uneven. Lastly, the habit construct aligns with the study's focus on sustainability of e-Learning adoption, recognizing that consistent use of digital platforms can foster durable behavioral patterns among users, ultimately enhancing long-term educational outcomes.

By leveraging UTAUT2, this research framework allowed for a richer and more context-sensitive assessment of e-Readiness and e-Learning integration in Kenyan higher

education. Its broader construct base and strong predictive capability support a detailed understanding of the dynamic interplay between user perceptions, technological engagement, and institutional readiness. UTAUT2 thus provides critical insights for designing policies and interventions that support the sustainable adoption of e-Learning technologies, ensuring they align with the expectations, motivations, and constraints experienced by both students and faculty.

6.2. Empirical Review

This empirical review evaluated existing literature on e-Readiness in relation to the integration of e-Learning within Kenyan public universities, focusing on issues of technological infrastructure, faculty preparedness, institutional support, curriculum integration, barriers to adoption, and user perceptions within a framework of the UTAUT2. Identification of the gaps in current literature provides a ground for addressing the specific research objectives of this study.

6.2.1. e-Readiness in Technological Infrastructure, Faculty Preparedness, and Institutional Support

Studies conducted at the international, regional, and local levels emphasize that technological infrastructure, readiness on the part of the faculty, and institutional support are very critical to the implementation of e-Learning. For instance, international organization studies, such as [36, 37] reveal that when infrastructure is strong and is accompanied by appropriate faculty training, then e-Learning will be effectively utilized. These studies demonstrate that without adequate internet bandwidth and faculty training, e-Learning platforms are never maximised, no matter the level of investment at the institutional level. Similar trends are observed in Africa where [38, 39] noted that a lack of technological resources and faculty resistance slow down e-Learning progress. Research conducted in Kenya by [40, 41] reveals that unreliable internet connectivity and old technology are barriers to e-Learning implementation. Another study by [42] indicates that instructors are sometimes not adequately prepared to integrate digital tools properly. Most of these studies have focused on isolated aspects, especially technological, faculty, and institutional support, without looking at how these interact in the creation of readiness. This is a big gap, since such expansive research is crucial to explain how these factors intermingle in affecting the successful implementation and adoption of e-Learning in Kenyan universities.

6.2.2. e-Learning Integration in University Curricula: Platforms and Pedagogical Approaches

Studies in the integration of e-Learning in university curricula reveal varying approaches and challenges across the global, regional (African), and local contexts. Globally, some researchers like [43-45] have noted that the integration of e-Learning does not simply involve the adoption of digital platforms such as Moodle and Blackboard, but simultaneously involves a pedagogical shift to learner-centered, collaborative approaches. Across Africa, [46-48] acknowledge the increased usage of Moodle and Google Classroom platforms but point out that many universities struggle with curriculum integration because of infrastructural and faculty readiness gaps. Research undertaken by [25, 49] in Kenya reflects this increased uptake in e-Learning platforms, although often implemented within a traditional lecture-centric paradigm, not necessarily transformative in terms of newer instructional frameworks such as blended learning or flipped classrooms. These studies point to the focus on technological platforms with an underemphasis on the pedagogical transformations needed for deeper integration. This gap in research lies in understanding how different teaching methods, coupled with faculty training, will better align with e-Learning platforms for effective learning experiences in Kenyan universities.

6.2.3. Barriers to Effective e-Learning Integration: Infrastructural, Cultural, and Policy Challenges

Research conducted on a global, regional, and local scale reveals various impediments to the successful integration of e-Learning, especially regarding infrastructure, cultural opposition, and policy-related difficulties. [50-52] emphasize that insufficient broadband connectivity, restricted access to digital resources, and the absence of favorable institutional policies represent critical barriers to the adoption of e-Learning on an international level. Scholars [53-55] observe similar infrastructural challenges in Africa, remarking that erratic internet access and lack of technological facilities hinder the adoption of e-Learning in many universities. Besides, a study by [56] points to cultural resistance to integrating digital learning tools, particularly in the traditional academic institutions. Within the Kenyan context, similar infrastructural impediments, such as unreliable internet connectivity and outmoded technology, are found to disproportionately impede the adoption of e-Learning [57, 58]. More crucially, there is a lack of clear policies at the national level and inadequate preparation of faculty members [24]. All these studies found that the efficacy of e-Learning demands overarching approaches that, above all, address culture and technological hurdles in resource-poor settings like Kenya.

6.2.4. Relationship Between e-Readiness and Perceived Quality of e-Learning Experiences

Research conducted around the world, in Africa, and specifically in Kenya has investigated the relationship between e-Readiness and the perceived quality of e-Learning experiences and has come up with very interesting findings. International research, including work by [59-61] indicates that high levels of e-Readiness, which involve robust infrastructure, faculty readiness, and institutional support, are positively related to the perceptions held by students and faculty regarding the quality of e-Learning experiences. These studies emphasize that when universities invest in sufficient technology and provide training, it yields greater reported satisfaction and engagement by users with e-Learning platforms. At the regional level in Africa, [62, 63] have established that e-Readiness directly impacts the effectiveness of e-Learning; that is, institutions showing greater readiness levels are likely to yield improved learning results and a greater level of student satisfaction. Research in Kenya by [64-66] also underlines a strong association between e-Readiness and perceived quality of e-Learning experiences. Students in universities with better infrastructure, faculty readiness, and institutional support are likely to report improved learning experiences. However, the aforementioned studies highlight that many universities in Kenya still face challenges in fully realizing e-Learning, which implies that e-Readiness is a crucial but insufficient factor for ensuring high-quality experiences. Collectively, these studies have indicated that even though

e-Readiness is a must, infrastructure, policy, and training need continuous improvement to achieve high-quality e-Learning experiences.

6.2.5. Recommendations for Enhancing e-Readiness and e-Learning Integration

Global, regional, and local studies emphasize the requirement of a holistic approach toward enhancing e-Readiness and integration of e-Learning. On the global platform, [67-69] call for extensive investment in digital infrastructure, including internet services of high speed and cloud platforms, with continuous faculty training in digital pedagogy to realize effective e-Learning. In Africa, [70, 71], put into light the necessity for better access to broadband, mostly in rural areas, and less expensive technologies in order to close the digital divide. Preparedness of faculty is another major concern where regional studies have suggested training programs that emphasize not only technical skills but also effective pedagogical strategies using digital tools. [72-74] underline the urgency with which such infrastructure modernization and the development of clear policies on e-Learning are needed to support both learners and educators, respectively, in Kenya. Taken together, these studies argue that e-Readiness calls for an all-rounded approach in infrastructure upgrading, faculty development programs, and supportive policies to address common local challenges such as access to the internet and related resource constraints.

6.3. Research Gaps

Despite considerable research on e-Learning, there remains a number of gaps, especially in the context of Kenyan public universities. While some studies have focused on technological infrastructure, faculty preparedness, and institutional support, few have examined how these interact holistically to impact e-Readiness. Most research isolates these elements without consideration of their combined effects, creating a need for integrated analyses. Moreover, whereas the fact that infrastructure is a key e-Learning adoption barrier has been well documented, other cultural and policy-related barriers have been under-explored in the case of Kenya. There is also scant empirical evidence on how different levels of e-Readiness influence students and faculty members' perceived quality of e-Learning in these universities. Lastly, while global studies make recommendations concerning ways of improving e-Readiness, few are focused on socio-economic and infrastructural challenges pertinent to Kenyan universities. This paper, therefore, seeks to fill these gaps by providing context-specific insights and actionable recommendations based on the UTAUT2, in order to improve e-Readiness and integration of e-Learning in Kenyan higher education.

7. Methodology

7.1. Comparative Analysis Approach

The study adopted a mixed-method approach, which included both qualitative and quantitative methods. Most appropriately, this was because it allowed for an understanding in depth of the complex factors that surround technology acceptance and usage, as it assured the enhancement of validity and reliability through data triangulation [75, 76].

7.2. Quantitative Component

The quantitative strand was designed to collect numerical data in order to establish the e-Readiness levels as well as the extent of e-Learning integration within the various universities. Data collection involved a survey where structured questionnaires were administered to students, faculty, and administrative staff based on the UTAUT2 model. The questionnaire measured constructs such as Performance Expectancy, Effort Expectancy, Social Influence, Facilitating Conditions, Hedonic Motivation, Price Value, and Habit. The reason for choosing surveys is related to efficiency in data collection from a large sample, offering a broad overview of perceptions and attitudes toward e-Learning. In addition, the standardized nature of the questionnaire allowed for quantitative analysis, which helped to establish trends and correlations among the variables.

The data collected were analyzed utilizing statistical techniques, such as Structural Equation Modeling (SEM), in order to establish the relationships between UTAUT2 constructs and e-Learning adoption. Statistical analysis was preferred in nature because of its strong hypotheses testing capability and model validation. SEM allowed an exploration of complex relationships between multiple variables simultaneously, resulting in insights not possible with traditional approaches into factors that influence e-Learning adoption.

7.3. Qualitative Component

The qualitative component complemented the quantitative findings by exploring participants' experiences and perceptions regarding e-Learning integration. This included semi-structured interviews with key stakeholders, such as university administrators, ICT staff, and educators, to gather in-depth insights into the challenges and facilitators of e-Learning implementation. Interviews were preferred for their ability to elicit detailed responses and detailed perspectives, allowing researchers to explore complex issues that may not have been captured adequately through surveys, thus providing context to the quantitative findings.

Additionally, focus group discussions with students were also arranged in order to explore attitudes of learners towards e-Learning tools and platforms. Focus groups have been selected for their interactive nature, where participants would be

encouraged to discuss and reflect on experiences in a collaborative way. This helped bring out collective themes relating to user experiences, barriers to adoption, and suggestions for improvement.

To complement the primary sources of data, document analysis was used in the study to review available institutional documents related to e-Learning policies, strategic plans, and previous e-Readiness assessments. This helped to situate and provide background that deepened the understanding of the institutional landscape regarding e-Learning readiness. Document analysis allowed for triangulation of findings from surveys and interviews, which enhanced the overall validity of the [77, 78]. Other relevant documents, including reports on previous e-Learning initiatives and policies on the use of technology, were also gathered from participating universities for a holistic approach to understanding the e-Readiness in the context of Kenyan universities.

7.4. Sample Selection

This study employed a census approach, targeting all 79 universities in Kenya accredited by the Commission for University Education as of the end of the 2023-2024 financial year. The sample included 37 public universities, 27 chartered private universities, and 15 universities operating under Letters of Interim Authority (LIA). By including the entire population of accredited universities, the study aimed to provide an all-inclusive assessment of e-Readiness and e-Learning integration across diverse institutional contexts. This approach considered the ongoing expansion and transformation of Kenya's higher education sector, capturing variations in readiness and implementation across different types of institutions.

7.5. Data Analysis

This study adopted a mixed analysis of both statistical and qualitative analysis methods in analyzing the data gathered. The data collected through questionnaires was analyzed through descriptive and inferential statistics. Descriptive statistics allowed for an overview of the participants' demographics and trends, hence helping in a good understanding of the characteristics of the sample [76]. Inferential statistics, such as Structural Equation Modeling (SEM), have been used to examine the relationships between constructs illustrated in the UTAUT2. It enabled intricate interrelations of variables to be assessed in order to test hypotheses related to determinants of e-Learning adoption [35]. Similarly, hierarchical regression analysis was conducted to determine the predictive power of multiple independent variables, including technological skills and user satisfaction, on e-Learning readiness, thereby serving to point out the most influential factors.

Qualitative data from interviews and focus groups were

analyzed using a thematic analysis framework [79], in a systematic manner. This entailed the following steps: getting familiar with the data, generating initial codes, grouping the codes into broader themes, defining and naming the themes, and finally producing a comprehensive narrative report. The use of thematic analysis was appropriate in such complex phenomena as e-Learning experiences, which allowed the exploration of participants' perceptions and challenges in detail [80]. This mixed-method approach enabled the e-Readiness state to be holistically assessed, together with its integration within the context of Kenyan public universities, hence bringing valuable insights on how to improve digital learning environments.

In addition, several diagnostic tests were performed in order to validate the data analysis methods, especially for ensuring that the assumptions made for the use of certain statistical techniques were not violated. It involves normality and multicollinearity tests; homoscedasticity; and most importantly, assumptions that underpin the appropriateness of using the chosen statistical tools: SEM and regression analysis.

In determining normality, the Shapiro-Wilk test and visual inspection through Q-Q plots were used. These approaches were crucial in establishing whether the data was normally distributed, which is a fundamental assumption in many statistical analyses [81, 82]. Multicollinearity between independent variables was evaluated using Variance Inflation Factor (VIF) values, to ensure that no independent variable exhibited high multicollinearity; indeed, high multicollinearity can make the estimates of regression coefficients unstable [83]. Furthermore, homoscedasticity was checked through graphical inspection of residual plots to ensure that residual variances were constant across all levels of the independent variables. This is very fundamental for valid hypothesis testing and to ensure that the model provides good predictions [84]. By doing these diagnostic tests, the study has ensured the robustness of the statistical findings, thereby increasing the reliability of the conclusions made concerning e-Readiness and integration of e-Learning in Kenyan public universities.

8. Findings

8.1. Diagnostic Tests

Various diagnostic tests were performed to ensure the validity of the factor model and dependability of it. Multicollinearity was tested with Variance Inflation Factor (VIF) to avoid factor loading distortion and have a robust model fit as presented in Table 1. All VIF values were found to be below the threshold of 5, indicating that multicollinearity was not a concern in this analysis, thus supporting the stability of the regression coefficients (Hair et al., 2014).

Table 1. Multicollinearity Assessment Using VIF and Tolerance.

Predictor Variable	VIF Value	Tolerance	Interpretation
Performance Expectancy	1.75	0.57	No significant multicollinearity
Effort Expectancy	1.63	0.61	
Social Influence	1.49	0.67	
Facilitating Conditions	1.82	0.55	
Hedonic Motivation	1.67	0.60	
Price Value	1.55	0.64	
Habit	1.80	0.56	

The normality of data distribution was assessed using both the Kolmogorov-Smirnov and Shapiro-Wilk tests, with results summarized in Table 2. For the Kolmogorov-Smirnov test, the test statistic was $Z = 0.89$ with a corresponding p-value of 0.75. Similarly, the Shapiro-Wilk test yielded a statistic of W

$= 0.98$ with a p-value of 0.72. In both cases, the p-values were well above the conventional significance threshold of 0.05, indicating that the data did not significantly deviate from a normal distribution

Table 2. Kolmogorov-Smirnov and Shapiro-Wilk Normality Test Results.

Test	Statistic	df	p-Value	Interpretation
Kolmogorov-Smirnov	$Z = 0.89$	1183	$p = 0.75$	Data is normally distributed
Shapiro-Wilk	$W = 0.98$	1183	$p = 0.72$	Data is normally distributed

8.2. Descriptive Analysis for e-Readiness and e-Learning Integration in Kenyan Universities

As depicted in Table 3, the study assessed the extent of e-Readiness and e-Learning integration in Kenyan universities, considering the separate roles of faculty and students in utilizing digital platforms. Performance Expectancy was scored moderately high across both groups, with mean scores ranging from 3.22 to 3.43. Faculty reported that e-Learning platforms were effective for teaching and enhancing academic performance, while students recognized the benefit of e-Learning in improving their learning outcomes and providing access to flexible resources. However, responses showed variability ($\sigma = 1.08$ to 1.15), reflecting different levels of satisfaction and experience across institutions.

For Effort Expectancy, the mean scores ranged from 2.86 to 3.11, indicating that both students and faculty find e-Learning platforms moderately user-friendly. However, students in particular reported challenges with navigating platforms effectively, and there were concerns regarding the adequacy of training and support ($\sigma = 1.12$ to 1.22). Faculty, on the other

hand, highlighted the need for more integrated technical training for both themselves and students.

Facilitating Conditions showed lower mean scores, from 2.73 to 2.97, reflecting gaps in the necessary infrastructure to fully support e-Learning integration. Both faculty and students reported issues with reliable internet access, digital resources (like e-libraries), and the technical support available. The variability in responses ($\sigma = 1.17$ to 1.24) suggests that resource availability may be inconsistent across different departments or campuses, further impacting the quality of digital learning.

Social Influence scores ranged from 3.11 to 3.22, reflecting moderate encouragement for both students and faculty to engage with e-Learning tools. Faculty were found to be actively incorporating digital tools in teaching, and peer influence was also seen as a strong motivator for students to adopt e-Learning. However, some discrepancies in institutional promotion and leadership ($\sigma = 1.15$ to 1.20) suggest that not all universities provide the same level of encouragement or support for digital learning.

Overall, while both faculty and students recognize the potential benefits of e-Learning, challenges remain in terms of infrastructure, technical support, and adequate training for both groups. These findings emphasize the need for universities to

improve e-Learning environments to better support the teaching needs of faculty and the learning requirements of students, ensuring that both are well-equipped to maximize the potential

of digital platforms. The variability across responses also highlights the opportunity for universities to address gaps and enhance consistency in their e-Learning integration efforts.

Table 3. Descriptive Analysis for e-Readiness and e-Learning Integration in Kenyan Universities.

Indicator of Performance	Statements	SD (%)	D (%)	N (%)	A (%)	SA (%)	M	σ
Performance Expectancy	e-Learning platforms are effective in enhancing students' academic performance and improving the overall quality of learning.	12.5	14.2	18.5	27.3	27.5	3.43	1.12
	The adoption of e-Learning technologies enables students to gain skills that are relevant to the modern, technology-driven job market.	11.7	13.8	19.3	27.1	28.1	3.34	1.15
Effort Expectancy	e-Learning contributes to students being able to access educational resources flexibly, without time or location constraints.	15.1	16.2	20.4	26.5	21.8	3.22	1.08
	e-Learning platforms in the university are designed to be user-friendly, making it easy for students to navigate and access learning materials.	17.3	18.6	19.2	24.8	20.1	3.11	1.12
	Students find e-Learning systems convenient and easy to use for completing assignments and engaging with course materials.	18.0	19.0	20.0	23.4	19.6	3.05	1.13
	The university provides adequate training and support services to help students learn how to use e-Learning tools effectively.	20.2	21.5	22.7	20.1	15.5	2.86	1.22
Facilitating Conditions	The university has provided reliable internet access across campus to support students' use of e-Learning platforms and tools.	23.3	19.8	17.6	21.0	18.3	2.97	1.19
	Digital learning resources, such as e-libraries and databases, are adequately available for students in the university.	24.0	18.2	19.1	20.7	18.0	2.93	1.20
	The institution has integrated sufficient ICT support to help both students and faculty with technical issues related to e-Learning.	25.2	21.7	18.6	18.4	16.1	2.73	1.24
	The university has policies in place to ensure regular updates and improvements in its e-Learning infrastructure to support students' and faculty's needs.	22.5	22.3	19.2	18.3	17.7	2.83	1.17
Social Influence	Faculty members encourage students to utilize e-Learning resources and actively incorporate digital tools into course delivery.	15.8	17.4	20.5	24.3	22.0	3.19	1.15
	Peer influence plays a role in encouraging students to adopt e-Learning tools, with classmates often sharing online resources.	14.7	16.2	22.4	25.0	21.7	3.22	1.18
	University administrators and leaders actively promote the importance of digital learning across all departments and programs.	17.6	18.5	20.1	23.2	20.6	3.11	1.20

8.3. Descriptive Statistics for e-Readiness Levels in Kenyan Universities

Table 4 provides a summary of the mean scores and standard deviations for e-Readiness dimensions across Kenyan universities, revealing variations in infrastructure, faculty preparedness, and institutional support.

Table 4. e-Readiness Levels Across Kenyan Universities.

e-Readiness Dimension	Mean (M)	Standard Deviation (SD)	Minimum	Maximum
Technological Infrastructure	2.35	0.75	1.00	5.00
Faculty Preparedness	3.20	0.90	1.50	5.00

e-Readiness Dimension	Mean (M)	Standard Deviation (SD)	Minimum	Maximum
Institutional Support	2.80	0.85	1.00	5.00
e-Learning Integration in Curricula	2.55	1.00	1.00	4.50

These statistics indicate relatively low e-Readiness in terms of technological infrastructure ($M = 2.35$, $SD = 0.75$) and institutional support ($M = 2.80$, $SD = 0.85$), which could be significant barriers to effective e-Learning. Faculty preparedness scored somewhat higher ($M = 3.20$, $SD = 0.90$), yet substantial

variability suggests that efforts to enhance training and support are still needed. e-Learning integration into curricula also varied significantly, indicating a need for more cohesive institutional strategies to standardize e-Learning across programs.

Table 5. Levels of e-Learning Integration in Kenyan University Curricula.

Dimension of e-Learning Integration	Mean (M)	Standard Deviation (SD)	Minimum	Maximum
Extent of Integration	2.95	0.85	1.00	5.00
Platform Usage	3.10	0.90	1.50	5.00
Pedagogical Methods	2.75	0.80	1.00	4.50

8.4. Descriptive Statistics for Level of e-Learning Integration in University Curricula and the Platforms and Pedagogical Methods

Table 5 provides a summary of the mean scores and standard deviations for the dimensions related to e-Learning integration across Kenyan universities, focusing on the extent of integration, platform usage, and pedagogical strategies employed.

These statistics reveal moderate levels of e-Learning integration, with extent of Integration scoring a mean of 2.95 ($SD = 0.85$), indicating that universities are adopting e-Learning in a mix of formats, from supplementary resources to hybrid models. Platform Usage shows a higher mean score of 3.10 ($SD = 0.90$), reflecting widespread reliance on digital platforms like Moodle, Google Classroom, and Blackboard. However, variability in platform adoption suggests that plat-

form use is not uniformly standardized across institutions. Pedagogical Methods scored slightly lower at a mean of 2.75 ($SD = 0.80$), with varied application of digital teaching techniques like interactive quizzes, discussion boards, and collaborative projects. These findings underscore the importance of strengthening institutional efforts to standardize platform use and adopt consistent pedagogical strategies to enhance e-Learning integration and improve student outcomes across programs.

8.5. Descriptive Statistics for Infrastructural, Cultural, and Policy-related Barriers to Effective e-Learning Integration

Table 6 provides a summary of the mean scores and standard deviations for barriers to effective e-Learning integration in Kenyan universities, highlighting the variations in infrastructural, cultural, and policy-related challenges.

Table 6. Barriers to Effective e-Learning Integration in Kenyan Universities.

Barrier Type	Mean (M)	Standard Deviation (SD)	Minimum	Maximum
Infrastructural Barriers	2.40	0.85	1.00	4.50
Cultural Resistance	2.75	0.90	1.00	4.80
Policy-Related Limitations	2.55	0.88	1.20	4.60

These statistics indicate that infrastructural barriers are a significant challenge ($M = 2.40$, $SD = 0.85$), reflecting limitations in internet connectivity, device availability, and technical support, which could hinder consistent e-Learning experiences across institutions. Cultural resistance scored moderately ($M = 2.75$, $SD = 0.90$), suggesting mixed acceptance of digital learning methods among faculty and students, with some hesitancy due to traditional educational preferences and lack of exposure to e-Learning technologies.

Policy-related limitations ($M = 2.55$, $SD = 0.88$) further illustrate variability in institutional policies and funding support for e-Learning, signaling that some universities lack cohesive frameworks or resources for effective e-Learning adoption. These findings underscore the importance of addressing infrastructural deficiencies and fostering a supportive cultural and policy environment for more robust and equitable e-Learning integration across Kenyan universities.

8.6. Qualitative Findings: Thematic Analysis

The qualitative findings, derived from interviews, focus group discussions, and document analysis, provided deeper insights into the factors influencing e-Learning integration in Kenyan universities. Responses were first organized according to sub-themes based on participants' roles in the learning process (students, lecturers, or administrators), age group, access to internet-enabled devices, and availability of supporting infrastructure. These sub-themes were then aggre-

gated into broader categories used to interpret the quantitative findings.

As summarized in Table 7, three main themes emerged from the analysis: Technological Barriers, Cultural Resistance, and Institutional Support Issues. Technological Barriers were consistently highlighted across participant groups. Respondents cited unreliable internet connectivity, limited access to digital devices, and frequent power outages as major obstacles. Both students and faculty emphasized that inadequate technical infrastructure hindered effective participation in e-Learning. ICT personnel noted inconsistent institutional investment in upgrading digital systems.

Additionally, cultural Resistance also emerged as a significant theme. Many lecturers expressed skepticism about the effectiveness of online learning, often preferring face-to-face methods. Students, particularly those from rural areas, reported discomfort and unfamiliarity with digital platforms, which affected their level of engagement. The resistance appeared to stem from limited exposure, lack of training, and perceptions that e-Learning was less rigorous than conventional teaching.

Moreover, Institutional Support Issues were widely noted as well. Participants pointed to the absence of clear e-Learning policies, inconsistent administrative backing, and inadequate training and incentives. Faculty reported a lack of structured opportunities for professional development, while students indicated insufficient guidance and support when navigating online platforms.

Table 7. Themes and Sub-Themes from Qualitative Data on e-Learning Experiences.

Theme	Sub-theme	Description	Example Quote
Technological Barriers	Limited Connectivity	Challenges with internet access, particularly in rural areas.	"We struggle with stable internet, and sometimes the network is completely down, affecting e-Learning sessions."
	Outdated Equipment	Insufficient or outdated devices hinder access to e-Learning resources.	"The computers are old, and software updates are rare, making it hard to keep up with digital learning needs."
Cultural Resistance	Faculty Reluctance	Resistance among faculty to adopt digital tools due to unfamiliarity or preference for traditional methods.	"Many faculty members are not comfortable with digital platforms and prefer face-to-face teaching methods."
	Student Hesitation	Students' lack of confidence in e-Learning due to limited experience.	"I'm not used to online learning, and it feels harder to stay focused than in physical classes."
Institutional Support Issues	Policy Gaps	Absence of clear institutional policies on e-Learning integration.	"There's no policy that clearly defines how we should use e-Learning platforms, which leads to inconsistency."
	Insufficient Training	Limited faculty training on e-Learning platforms and digital pedagogy.	"We had one training session, but it wasn't enough to feel confident in using these platforms with students."

These themes illustrate the multifaceted nature of barriers to e-Learning adoption. Technological barriers, such as lim-

ited internet access and outdated equipment, were recurrently noted as significant obstacles to both faculty and student

engagement in e-Learning. Cultural resistance, particularly among faculty and students unfamiliar with digital tools, also emerged as a limiting factor, suggesting the need for targeted support in digital pedagogy. Institutional support issues, such as inadequate policies and limited training opportunities, further hindered the sustained and consistent adoption of e-Learning across universities.

8.7 Recommendations for Improving E-Readiness and e-Learning Integration

Table 8 provides a summary of the mean scores and standard deviations for recommended interventions to improve e-Readiness and e-Learning integration in Kenyan universities. These recommendations focus on strengthening technological infrastructure, faculty and student training, institutional policy, and cultural acceptance to address current

barriers to e-Learning.

These statistics suggest that there is a moderate to high level of consensus on the importance of enhancing faculty training ($M = 3.45$, $SD = 0.88$) and increasing cultural acceptance of e-Learning ($M = 3.25$, $SD = 0.90$), indicating readiness among stakeholders to address these areas. Technological infrastructure remains a critical area for improvement, with relatively lower scores ($M = 2.90$, $SD = 0.82$), reflecting the need for significant investment in internet access, devices, and technical support. Similarly, institutional policy ($M = 3.00$, $SD = 0.80$) requires more cohesive strategies to provide consistent support for e-Learning initiatives across departments and campuses. The variability across these dimensions highlights areas where targeted efforts could significantly improve e-Readiness and facilitate a more comprehensive integration of e-Learning in university curricula.

Table 8. Recommendations for Improving e-Readiness and e-Learning Integration.

Recommendation Dimension	Mean (M)	Standard Deviation (SD)	Minimum	Maximum
Technological Infrastructure	2.90	0.82	1.50	5.00
Faculty Training and Development	3.45	0.88	1.80	5.00
Student Digital Literacy	3.10	0.85	1.50	5.00
Institutional Policy and Support	3.00	0.80	1.50	4.80
Cultural Acceptance and Awareness	3.25	0.90	1.60	5.00

8.8. Comparative Analysis: e-Readiness and Integration Strategies Among Kenyan Universities

A comparative analysis of e-Readiness and integration strategies among Kenyan universities was done to examine the variations in technological infrastructure, faculty preparedness, institutional support, and the integration of e-Learning in curricula. This analysis provides valuable insights into how different universities approach e-Learning and the factors that influence its successful integration. By comparing the strategies employed across institutions, the study can better understand the challenges and opportunities within the Kenyan higher education system. Table 9 below presents a summary of these differences and similarities, highlighting key dimensions of e-Readiness and the integration of e-Learning strategies across the universities studied. The table provides a detailed overview of the various factors contributing to the state of e-Learning at each institution.

9. Discussion

Interpretation of Findings

The findings of this study provide valuable insights into the state of e-Readiness and e-Learning integration in Kenyan universities, addressing the research questions and objectives set out at the start of the study. Key findings include significant challenges related to technological infrastructure, faculty preparedness, and institutional support, which hinder the effective adoption of e-Learning. The data highlight variability in how universities address these challenges, with some institutions demonstrating more advanced strategies for e-Learning integration than others.

The study found that technological infrastructure ($M = 2.35$, $SD = 0.75$) presents a significant barrier to effective e-Learning integration. This aligns with the facilitating conditions construct in the UTAUT2 model, which refers to the degree to which individuals believe that technical and organizational infrastructure exists to support system use. The low scores suggest that many universities lack the foundational support necessary to enable seamless digital learning,

particularly in rural settings with limited internet and outdated equipment. These findings corroborate previous research that highlights infrastructure as a persistent constraint in low- and middle-income countries. Additionally, the qualitative data underscore this challenge. Students and faculty reported frequent interruptions due to poor connectivity and limited access to up-to-date devices. These infrastructural shortcomings affect not only the usability of e-Learning platforms but also diminish motivation and engagement, directly impacting behavioral intention, a central construct in the UTAUT2 model.

Faculty preparedness ($M = 3.20$, $SD = 0.90$) emerged as a relatively stronger dimension compared to infrastructure, yet the variability suggests uneven distribution of training and resources across institutions. UTAUT2 highlights effort expectancy as a key determinant of technology use. When users perceive e-Learning systems as easy to use, their willingness to adopt such systems increases. However, the results show that some faculty members still lack sufficient technical training and pedagogical guidance, which may hinder their effective use of digital tools.

Institutional support ($M = 2.80$, $SD = 0.85$) similarly exhibited moderate levels, indicating that while certain institutions have structured policies and capacity-building programs, others are still in the early phases of digital integration. These inconsistencies in strategic leadership and policy alignment may partly explain the observed disparities in e-Learning adoption across universities. Consistent with UTAUT2's construct of facilitating conditions, the lack of institutional support reduces users' confidence in the system and negatively affects technology acceptance and continued use.

Cultural resistance ($M = 2.75$, $SD = 0.90$) was a prominent theme across both quantitative and qualitative results. Faculty reluctance and student hesitation were frequently mentioned as impediments to adoption. According to the habit construct in UTAUT2, previous experience and comfort with specific behaviors strongly influence the likelihood of continued system use. Where traditional pedagogical methods dominate and digital literacy is limited, this habit acts as a reinforcing loop, deterring transition to e-Learning. These findings resonate with studies that emphasize the role of institutional culture and personal attitudes in shaping technology acceptance in education. Therefore, without deliberate change management and engagement strategies, resistance from both students and faculty may continue to undermine the effectiveness of e-Learning interventions.

The moderate score for pedagogical methods ($M = 2.75$, $SD = 0.80$) indicates that while platforms like Moodle and Google Classroom are being adopted, their instructional potential is not being fully realized. This points to a gap between platform availability and pedagogical innovation. UTAUT2 posits that performance expectancy; the belief that using a system will lead to performance gains influences user adoption. If faculty are not adequately trained to utilize the full range of digital pedagogies, the perceived usefulness of

e-Learning may be diminished, limiting its impact on learning outcomes. Furthermore, the diversity in platform adoption across institutions suggests a need for standardization and strategic alignment. Without institutional frameworks guiding the use of specific platforms and pedagogies, the effectiveness and equity of e-Learning will remain inconsistent.

Policy-related barriers ($M = 2.55$, $SD = 0.88$) were consistently reported across institutions, pointing to the absence of coherent national or institutional strategies for e-Learning integration. This issue directly undermines the facilitating conditions component of UTAUT2. Without clear guidelines, quality benchmarks, and sustainable funding models, faculty and students operate in uncertain environments that discourage innovation and uptake. The qualitative data reinforced these concerns, with respondents highlighting the lack of clear policies, irregular training, and insufficient technical support. In the absence of strategic vision and leadership, individual efforts are often fragmented, and long-term progress is hindered.

10. Conclusions and Recommendations

This study examined the state of e-Learning integration across Kenyan universities by analyzing multiple dimensions of e-Readiness, including infrastructure, faculty preparedness, institutional support, policy frameworks, and cultural acceptance. The findings indicate that while there is an increasing recognition of the role of digital education, substantial gaps persist in readiness and implementation. These gaps hinder the potential for e-Learning to enhance educational equity and quality.

The research confirms that technological infrastructure remains the most significant barrier, with many institutions struggling to provide reliable internet access, up-to-date hardware, and platform stability. Faculty development and digital pedagogy are inconsistently addressed across institutions, leaving many instructors underprepared to fully utilize available tools. Furthermore, institutional policies and strategies for e-Learning remain fragmented, contributing to an uneven implementation landscape.

Cultural resistance to digital learning also emerged as a critical factor, with both students and faculty showing reluctance to move away from traditional modes of instruction. These findings suggest that for e-Learning to be sustainably integrated, systemic changes are required across technological, pedagogical, policy, and cultural domains.

The study contributes to the UTAUT2 framework by showing that in low-resource educational contexts, systemic enablers and barriers shape individual behavior more powerfully than personal preference or perceived usefulness alone. Contextualizing technology acceptance within broader institutional and policy environments is therefore essential for effective application of the model. Based on these insights, the following recommendations are proposed.

For university administrators, policymakers, and faculty

members, the findings present several actionable areas for improving e-Learning integration. First, universities should prioritize building and maintaining robust digital infrastructure. Reliable access to high-speed internet, modern computing equipment, and consistent technical support across campuses is foundational. Without these essential components, even the most well-designed e-Learning initiatives are unlikely to achieve their intended impact.

Moreover, faculty development must be a central focus. Targeted professional development programs are necessary to build both digital competence and pedagogical innovation. These initiatives should go beyond basic ICT skills to include effective course design, strategies for student engagement, and creative use of digital platforms. Enhancing faculty confidence and motivation is critical, as instructors play a pivotal role in driving meaningful adoption of e-Learning tools.

In addition to infrastructure and training, universities must establish clear, coherent, and consistently applied institutional policies on e-Learning. A well-structured strategic plan that aligns infrastructure upgrades with faculty support and curriculum development will ensure more effective and sustainable implementation. Such policies should be regularly reviewed and updated to keep pace with the evolving landscape of digital education.

Furthermore, attention must be given to the cultural dimensions of e-Learning. Resistance from both students and faculty can hinder adoption, so institutions should actively promote awareness of the benefits of digital learning. This can be achieved through peer-led mentorship programs, visible success stories, and initiatives that foster a supportive community. Emphasizing how e-Learning complements rather than replaces traditional instruction may also help to ease resistance and build broader acceptance.

Finally, the importance of institutional leadership and collaboration cannot be overstated. University leaders must take an active role in championing e-Learning initiatives, while also fostering collaboration among faculty, students, and IT personnel. Inclusive and participatory decision-making processes are essential for ensuring context-sensitive implementation. Moreover, partnerships among universities and the creation of knowledge-sharing platforms can significantly enhance institutional capacity and accelerate progress toward digital transformation in higher education.

10.1. Limitations of the Study

While the study provides useful insights into the state of e-Learning integration in Kenyan universities, several limitations must be acknowledged. One limitation is the sampling bias; although the study covered a range of universities, the sample may not fully represent the diversity of institutions in Kenya, particularly those in rural or remote areas where access to e-Learning resources may be even more limited.

Additionally, the study focused primarily on quantitative data from surveys, which may not fully capture the depth of

the challenges faced by faculty and students in adopting e-Learning. The qualitative data from interviews and focus groups helped to address this, but further qualitative exploration could provide a deeper understanding of the contextual factors influencing e-Learning adoption.

Another limitation is the generalizability of the findings. While the study provides a detailed analysis of e-Readiness and e-Learning integration in Kenyan universities, its findings may not be directly applicable to universities in other regions or countries with different educational, technological, and cultural contexts.

10.2. Future Research Directions

Future research could further disaggregate e-Readiness data to examine specific regional or institutional differences, such as variations between rural and urban universities or distinctions between public and private institutions. A regional analysis may reveal unique challenges that impact e-Learning differently across Kenya, offering insights to develop targeted strategies. Longitudinal studies could also be useful to track progress in e-Learning integration over time and assess the impact of new policies or interventions.

Additionally, further research on faculty and student attitudes toward e-Learning would be beneficial. A mixed-methods approach that includes qualitative data could uncover deeper insights into the beliefs, perceptions, and experiences that influence engagement with e-Learning. Finally, an exploration of policy frameworks within Kenyan universities could identify opportunities to standardize and enhance institutional support for e-Learning, ensuring alignment with national education goals and meeting university-specific needs.

The importance of enhancing e-Readiness in Kenyan universities is undeniable. As the global educational landscape evolves, digital literacy and e-Learning are essential for providing quality education that meets the demands of a technology-driven world. Improved e-Readiness will not only prepare students with relevant digital skills but will also expand access to flexible and equitable learning resources. By investing in technological infrastructure, creating supportive institutional policies, and fostering a positive culture toward digital learning, Kenyan universities can better position themselves to contribute to national educational and economic development. Embracing e-Learning as a core element of university education is vital for Kenya's future, equipping graduates with the skills necessary to thrive in an increasingly digital world.

Abbreviations

CAGR	Compounded Annual Growth Rate
EdTech	Educational Technology
e-Learning	Electronic Learning

e-Readiness	Electronic Readiness
ICT	Information and Communication Technology
HEIs	Higher Education Institutions
SDGs	Sustainable Development Goals
SEM	Structural Equation Modeling
UTAUT	Unified Theory of Acceptance and Use of Technology
UTAUT2	Unified Theory of Acceptance and Use of Technology-2

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Conflicts of Interest

The authors declare no conflicts of interest.

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