

DIGITAL TRANSFORMATION AND FINANCIAL SUSTAINABILITY OF CATHOLIC PRIVATE EDUCATIONAL INSTITUTIONS ASSOCIATION (CAPEIA) SCHOOLS IN THE DIOCESE OF KISII, KENYA

BY

Agilo Elijah Osen¹, ²Dr. Lawrence Odollo, ³Dr. Abraham Kiflemariam

^{1, 2&3} *Department of Graduate Business Studies, School of Business and Economics, The Catholic University of Eastern Africa*

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Abstract

Faith-Based Basic Education Institutions (FBBEIs) in Kenya continue to face financial instability arising from increased operating costs, declining donor support, and heavy dependence on tuition income, prompting increasing interest in digital transformation as a lever for institutional efficiency and financial resilience. This study examined the effect of digital transformation on the financial sustainability of Catholic Private Educational Institutions Association (CaPEIA) schools in the Diocese of Kisii, Kenya. The study was anchored on the Resource-Based View and adopted a pragmatist, mixed-methods, descriptive research design. A sample of 120 Senior Administrative Assistants drawn from twelve systematically sampled CaPEIA schools completed closed-ended questionnaires, while 17 key informants (head teachers, Board of Management chairpersons, and the Diocesan Education Secretary) were purposively selected for structured interviews. Quantitative data were analysed using descriptive statistics, Pearson correlation, and linear regression in SPSS version 25.0, while qualitative data were analysed thematically. Findings show that teacher digital literacy and social-media engagement are well established, while automated management systems, virtual classrooms, and digital whiteboards remain underdeveloped. Digital transformation was found to have a very strong, positive, and statistically significant relationship with financial sustainability ($r = .931$, $p < .001$), and regression analysis indicated that digital transformation explains approximately 86.7% of the variance in financial sustainability ($R^2 = .867$, $F(1, 85) = 554.4$, $p < .001$; $\beta = .931$, $p < .001$). The study recommends deliberate diocesan and institutional investment in automated administrative systems, virtual-learning infrastructure, and continuous digital-skills training for teachers, administrators, and Board of Management members.

Keywords: Digital Transformation; Financial Sustainability; ICT Integration; Faith-based Basic Education Institutions; Catholic Private Educational Institution Association Kenya

1. Background of the Study

Access to quality education and lifelong learning is a central aspiration of the United Nations 2030 Agenda for Sustainable Development, and Faith-Based Basic Education Institutions (FBBEIs) have long complemented government efforts to expand access, particularly in underserved areas (Burbules et al., 2020). These institutions are created, owned, or supported by religious organisations with a dual mandate of academic instruction and moral, spiritual, and ethical formation (Idris et al., 2023). Despite this

important role, FBBEIs worldwide face mounting financial pressure from rising operating costs, declining donations, demographic shifts, inflation, and growing competition from other providers, which has pushed school managers to move away from funding models that rely mainly on tuition fees and religious support toward more deliberate, technology-enabled strategies for improving efficiency and revenue (Ngwacho, 2024).

Digital transformation, understood in a school setting as the adoption of digital tools that improve teaching,

learning, administration, and communication, has emerged globally as a strategic resource through which schools can reduce operational costs, improve service delivery, and strengthen stakeholder confidence (Gupta, 2024; Khatib et al., 2025). Concretely, this includes AI-assisted tools that help teachers mark work and locate teaching content, online learning platforms and digital libraries, and school management or communication systems such as parent-facing messaging platforms and fee-payment portals that streamline interaction between the school, teachers, and parents (Haleem et al., 2022). Evidence from the United States, Spain, Ghana, and Rwanda shows that schools with stronger digital infrastructure record improved administrative efficiency, reduced operating costs, and greater competitiveness in attracting learners and revenue (Cukurova et al., 2023; Vázquez-Cano et al., 2023; Agyei & Voogt, 2022; Nkuyubwatsi, 2024). In Kenya, faith-based schools historically depended on a single dominant funding stream, most often donor support, and this arrangement has proven fragile (Wachege et al., 2019). National data show that the number of private schools in Kenya fell by 10.6% between 2019 and 2020 (from 9,058 to 8,096), underscoring the scale of financial vulnerability facing privately managed education providers, a category that shares FBBEIs' funding and regulatory profile (Ministry of Education Kenya, 2020). Within this context, the Catholic Private Educational Institutions Association (CaPEIA), established in 2014 by the Kenya Conference of Catholic Bishops, brings together Catholic-sponsored schools to advance capacity building and a shared educational vision and mission. The Catholic Diocese of Kisii sponsors twenty-four registered CaPEIA schools spanning pre-primary to senior secondary level, and, in line with national policy direction toward digital learning (Ministry of Education Kenya, 2022), the Diocese has directed all CaPEIA schools to incorporate computer studies in the curriculum. This study investigated how digital transformation, specifically, shapes the financial sustainability of CaPEIA schools in the Diocese of Kisii, Kenya.

2. Statement of the Problem

FBBEIs are expected to generate sufficient resources to retain skilled teachers, maintain infrastructure, meet regulatory obligations, and sustain their religious

mission, increasingly through the adoption of digital tools that improve teaching efficiency, administrative accuracy, and stakeholder communication (Chiwodza et al., 2023). Yet these institutions continue to experience financial instability driven by growing expenses, decreasing donations, tuition dependency, and insufficient investment in institutional development (Ministry of Education Kenya, 2020). Within CaPEIA schools in the Diocese of Kisii specifically, most institutions operate on limited annual budgets, and administrative systems remain largely manual, which may constrain operational efficiency and the schools' capacity to mobilise and manage financial resources effectively.

Prior studies on digital transformation in schools, including work on AI-supported adaptive learning platforms in the United States (Cukurova et al., 2023), digital sustainability in Spanish schools (Vázquez-Cano et al., 2023), ICT integration in Ghanaian senior high schools (Agyei & Voogt, 2022), Rwanda's Smart Education Initiative (Nkuyubwatsi, 2024), and digital learning in Kenyan private basic education institutions generally (Ministry of Education Kenya, 2022) have established that digital transformation improves institutional efficiency and, in some contexts, financial performance (Wambua, 2022; Napisah et al., 2024). However, none of these studies specifically examined faith-based Catholic basic education institutions, and none addressed the CaPEIA schools of the Diocese of Kisii. This contextual gap, concerning how digital transformation specifically affects the financial sustainability of Catholic Church-owned basic education institutions in this diocese, motivated the present study.

3. Research Objective and Question

3.1 Research Objective

The objective of the study was to examine the effect of digital transformation on the financial sustainability of Catholic Private Educational Institutions Association (CaPEIA) schools in the Diocese of Kisii, Kenya.

3.2 Research Question

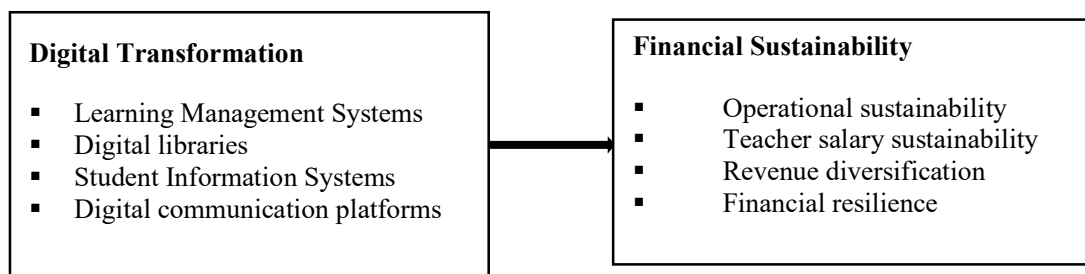
To what extent does digital transformation affect the financial sustainability of CaPEIA schools in the Diocese of Kisii, Kenya?

4. Conceptual Framework

Digital transformation can contribute to the financial sustainability of CaPEIA schools according to the conceptual framework presented here. This is through increased efficiencies associated with the use of

learning management systems, digital libraries, student information systems, and digital communication, among other technologies. These factors can make it possible for the schools to meet their financial needs, including the payment of salaries for teachers.

Figure 1: Conceptual Framework
Independent Variable



5. Theoretical Framework

The study was anchored on the Resource-Based View (RBV), developed by Wernerfelt (1984) and extended by Barney (1991), which holds that an institution's competitive advantage and sustained performance derive from the effective management of valuable, rare, inimitable, and organized (VRIO) internal resources, including digital infrastructure and digital competence — rather than market position alone (Barney et al., 2021). RBV was supported by two complementary theories. Dynamic Capabilities Theory (Teece et al., 1997) explains why institutions must deliberately sense, seize, and reconfigure their resources, including technology and staff competencies, to remain effective in a changing environment; this is directly relevant to schools that must continuously renew ICT infrastructure and staff digital skills to keep pace with evolving teaching and administrative demands. Institutional Theory (Scott, 1995) explains how regulatory expectations, sector norms, and social pressure, such as the Ministry of Education's national digital learning agenda (Ministry of Education Kenya, 2022) and the Diocese's directive that all CaPEIA schools teach computer studies, drive schools to adopt digital practices in pursuit of legitimacy as much as efficiency. Together, these theories explain both the internal resource-management logic and the external institutional pressure that shape digital transformation and, through it, financial sustainability in faith-based schools.

6. Methodology

The study was anchored on pragmatism and adopted a mixed-methods, descriptive research design that combined quantitative and qualitative approaches. The target population comprised 606 individuals across the 24 CaPEIA schools in the Diocese of Kisii, spanning Senior Executive Management, Senior Administrative Assistants, Management Board Chairs, the Diocesan Sponsor's representative, and teaching staff. Using the Yamane (1967) formula, a minimum representative sample of 241 was computed and proportionately adjusted to 120 respondents to reflect the researcher's decision to survey 12 of the 24 schools.

A two-stage sampling procedure was used: schools were first selected through systematic sampling (interval $k = 2$) from an alphabetically ordered sampling frame of 24 schools, yielding 12 sampled schools; within each school, Senior Administrative Assistants were then selected through systematic sampling to obtain 10 respondents per school (120 respondents in total). Purposive sampling was used to select 17 key informants for interviews: 12 headteachers, 4 Board of Management chairpersons drawn from each of the four represented deaneries, and the Diocesan Education Secretary. Data were collected in January 2026 using closed-ended questionnaires (5-point Likert scale, six items measuring digital transformation and six items measuring financial sustainability) and structured interview schedules, following authorisation from CUEA, NACOSTI, and the Diocese Education Office.

Quantitative data were analysed in SPSS version 25.0 using descriptive statistics, Pearson correlation, and linear regression, with the relationship specified as $Y = \beta_0 + \beta_1 X + e$, where Y is financial sustainability, and X is digital transformation. Instrument reliability for the digital transformation construct was confirmed through Cronbach's Alpha ($\alpha = .851$), indicating good internal consistency, while face and content validity were established through an expert panel using Lawshe's (1975) Face Validity Index and Lynn's (1986) Content Validity Index. Qualitative interview data were analysed thematically. Ethical clearance emphasised voluntary participation, informed consent, and confidentiality throughout.

7. Descriptive Data

Before presenting the substantive findings, this section reports the response rate and the demographic and institutional profile of respondents, which contextualize the digital transformation and financial sustainability results that follow.

7.1 Response Rate

Of the 108 questionnaires administered to the sampled Senior Administrative Assistants, 87 were completed and returned, giving a response rate of 80.6%. Of the 12 key informants targeted for interviews, 10 were successfully interviewed, giving a response rate of 83.3%. Both response rates exceed the 80% threshold regarded as very good and reliable for drawing valid conclusions (Dillman et al., 2021).

Table 1: Response Rate

Category	Instruments Distributed	Returned/Interviewed	Response Rate (%)
Questionnaire Respondents	108	87	80.6
Key Informant Interviewees	12	10	83.3

7.2 Demographic and Institutional Profile

Table 2 presents the demographic characteristics of respondents alongside key institutional indicators. Most respondents (47.1%) had served in their institution for 3–5 years and a further 36.8% for 0–2 years, indicating that most had sufficient tenure to comment meaningfully on institutional digital practice. The majority specialized in Education (88.5%), with small proportions from Finance/Accounting (4.6%), Human Resource Management (3.4%), Entrepreneurship (2.3%), and Marketing (1.1%). By position, 44.8% were Senior Teachers, 35.6% Departmental Heads, 12.6% Deputy Headteachers, and 6.9% Finance Administrators. Institutionally, 47.1% of schools operated on annual budgets below Kes. 5 million and 32.2% on budgets of Kes. 5–9 million, while 40.7% reported annual profits below Kes. 2 million and a further 15.1% reported profits above Kes. 2 million, against 24.4% reporting losses below Kes. 2 million and 7.0% reporting losses above Kes. 2 million.

Table 2: Demographic and Institutional Profile of Respondents

Variable	Category	Frequency (%)
Length of Service	0–2 Years	36.8
	3–5 Years	47.1
	6–10 Years	12.6
	10+ Years	3.4
Area of Specialization	Education	88.5
	Finance/Accounting	4.6
	Human Resource Mgt.	3.4
	Entrepreneurship	2.3

	Marketing	1.1
Position	Senior Teacher	44.8
	Departmental Head	35.6
	Deputy Head/Principal	12.6
	Finance Administrator	6.9
Annual Operating Budget	Below KSh 5M	47.1
	KSh 5–9M	32.2
	KSh 10–15M	12.6
Annual Financial Performance	Profit <KSh 2M	40.7
	Loss <KSh 2M	24.4
	Profit >KSh 2M	15.1
	Break-even	12.8
	Loss >KSh 2M	7.0

These figures suggest that CaPEIA schools in the Diocese of Kisii are, in the main, resource-constrained institutions with relatively low annual budgets, yet a majority nonetheless register positive financial performance, consistent with the view that faith-based schools maintain operations through prudent financial management and diversified revenue sources despite tight budgets (Kala'Tiku et al., 2025).

8. Study Findings

8.1 Digital Transformation

Table 3. summarizes respondents' perceptions of digital transformation across six indicators. Teacher digital competence was rated overwhelmingly positive, with

98.9% of respondents agreeing or strongly agreeing that teachers have basic computer training. The use of social media platforms to engage stakeholders was also well received (83.9% agree/strongly agree). By contrast, respondents were far less positive about institutional automation: 81.6% disagreed or strongly disagreed that their schools have automated management systems. Online collaboration in teaching and learning, the frequency of virtual classes, and the installation of digital whiteboards were all rated predominantly neutral, indicating uneven and inconsistent adoption of classroom-level digital tools across schools.

Table 3: Digital Transformation on Financial Sustainability

Digital Transformation Indicator	Disagree/Strongly Disagree (%)	Neutral (%)	Agree/Strongly Agree (%)	Mean	SD
Integrates online collaboration in teaching/learning	6.9	73.6	21.8	3.00	0.61
Engages stakeholders via social media	1.1	14.9	83.9	4.06	0.65
Teachers have basic computer training	0.0	1.1	98.9	4.70	0.46
School has automated management systems	81.6	12.6	5.7	2.06	0.82
Teachers occasionally conduct virtual classes	20.6	60.9	18.4	3.00	0.68
The school has installed digital whiteboards	14.9	58.6	26.4	3.10	0.65

The composite mean for digital transformation was 3.15 (SD = 0.65), indicating a moderate overall level

of adoption that is stronger in teacher competence and stakeholder engagement than in institutional

automation and classroom-level digital infrastructure. This pattern is consistent with the view that the effectiveness of school digital transformation depends on technological infrastructure, staff readiness, and institutional leadership acting together, rather than staff competence alone (Cukurova et al., 2023).

Qualitative interviews corroborated and enriched this pattern. Asked what digital tools their schools had adopted, headteachers described basic but growing ICT infrastructure. One Board of Management chairperson explained the Board's role in expanding this infrastructure, stating:

"The Board supports digital transformation by constructing and equipping an ICT laboratory." (BOMC2)

On how digital systems are used to engage stakeholders, headteachers reported relying mainly on everyday communication tools rather than dedicated school-management platforms, while a Board chairperson linked digital systems directly to governance quality:

"Digital systems enhance efficiency, transparency, communication, and data management, enabling more informed decision-making." (BOMC1)

On the extent of automation, however, the picture was markedly less advanced. One headteacher candidly acknowledged the gap between aspiration and practice:

"We do not have automated operations... it is a good thing for future." (HT interview)

Board of Management chairpersons broadly agreed with this assessment, pointing to resource and technological limitations as the main constraint on further automation. At the diocesan level, the Education Secretary described a coordinated strategy to raise digital readiness across all CaPEIA schools:

"Every CaPEIA school has been advised to take Computer lessons as part of the learning areas." (ES, January 2026)

"Empower the boards to ensure that digital learning takes place in our schools. We use ministry of education officers to conduct a capacity building for our teachers through retooling." (ES, January 2026)

Regarding monitoring of digital readiness, the Education Secretary further explained:

"[This is] done by the Quality Assurance officers who assess and advise us on what to be done... the BOMs are also advised to assist in the area... the syllabus guides on the issues of digital trainings." (ES, January 2026)

Taken together, the qualitative accounts confirm the quantitative finding that digital transformation in CaPEIA-DOK schools is real and diocesan-supported, but concentrated in teacher training and basic communication rather than in the administrative automation that would most directly support financial management (Khatib et al., 2025).

8.2 Financial Sustainability

Table 4 presents respondents' perceptions of financial sustainability practice across six indicators. Institutions reported strong practice in regular resource-allocation review (85.0% agree/strongly agree), maintenance of financial reserves (95.4% agree/strongly agree), tuition-fee policy (85.1% agree/strongly agree), and long-term financial planning (90.8% agree/strongly agree), but weaker practice in income-generating projects (16.1% agree) and diversified funding sources (29.9% agree/strongly agree).

Table 4: Financial Sustainability

Financial Sustainability Indicator	Disagree/Strongly Disagree (%)	Neutral (%)	Agree/Strongly Agree (%)	Mean	SD
Regularly checks resource allocation and adjusts	0.0	14.9	85.0	4.39	0.79
Has financial reserves for eventualities	0.0	4.6	95.4	4.15	0.52
Has income-generating projects	21.8	62.1	16.1	2.94	0.79
Has multiple sources of funding	16.1	54.0	29.9	3.28	0.86
Has policies guiding tuition fee	0.0	14.9	85.1	4.00	0.55

payment					
Has a long-term financial plan	2.2	6.9	90.8	4.58	0.92

The composite mean for financial sustainability was 3.73 (SD = 0.73), indicating generally strong financial-management practice despite the limited budgets reported in Table 2. Interviews with Board of Management chairpersons reinforced this picture of active, if resource-constrained, financial governance. One chairperson described the Board's approach to long-term planning:

"The Board promotes sustainability by holding frequent meetings, financial monitoring, and strategic planning. This ensures ongoing review of financial outcomes to quickly address financial risks and implement corrective actions." (BOMC1)

Another chairperson linked financial control directly to institutional structures:

"The school has a qualified bursar and established financial management systems. Such mechanisms improve accountability, transparency, and effective use of funds." (BOMC2)

A third chairperson described how data-informed financial decisions extend even to operational choices such as energy use:

"This decision was informed by financial and operational data showing potential cost savings, sustainability benefits, and long-term efficiency." (BOMC3)

At the diocesan level, the Education Secretary identified structural constraints beyond individual schools' control:

"The major reason for financial unsustainability is the lack of capitation by the government. There is comparatively low enrollment in our schools because of free education policy in the country. The two above force CaPEIA schools to charge low fees to attract the learners." (ES, January 2026).

"Poor payment of school fees is threatening our schools. Some parents think that the Church schools are charitable organisations." (ES, January 2026).

These qualitative accounts are consistent with the quantitative finding that CaPEIA schools maintain reasonably strong internal financial discipline:reserves, planning, and fee policy,while remaining structurally exposed through weak income diversification and external funding pressures (Getui et al., 2023).

9. Inferential Results

9.1 Correlation Analysis

Pearson correlation analysis showed a very strong, positive, and statistically significant relationship between digital transformation and financial sustainability ($r = .931$, $p < .001$, $n = 87$), indicating that schools with higher levels of digital adoption in teaching, communication, and administration also tend to report stronger financial sustainability practice, a pattern consistent with findings from digital-transformation studies in other education systems (Agyei &Voogt, 2022; Nkuyubwatsi, 2024).

Table 5: Pearson Correlation between Digital Transformation and Financial Sustainability

Variable	r with Financial Sustainability	p-value	n
Digital Transformation	.931	.000	87

9.2 Regression Analysis

Simple linear regression was conducted to determine the predictive effect of digital transformation on financial sustainability. The model was statistically significant, and digital transformation alone accounted for a substantial share of the variance in financial sustainability.

Table 6: Model Summary

Model Statistic	Value
R	.931
R Square	.867
Adjusted R Square	.865
Std. Error of the Estimate	.268
F (1, 85)	554.4
Sig. (F)	.000

Table 7: Regression Coefficients

Predictor	B (Unstd.)	Std. Error	Beta (Std.)	T	Sig.
(Constant)	.438	.142	—	3.08	.003
Digital Transformation	1.045	0.044	.931	23.54	.000

The regression coefficient for digital transformation was positive and highly significant ($B = 1.045$, $\beta = .931$, $t = 23.54$, $p < .001$), indicating that for every one-unit increase in the composite digital transformation score, financial sustainability is predicted to increase by approximately 1.045 units, holding other unmeasured factors constant. The coefficient of determination ($R^2 = .867$) indicates that digital transformation alone explains approximately 86.7% of the variance in financial sustainability among CaPEIA schools in the Diocese of Kisii, an unusually high proportion for a single-predictor model in social-science research, and one consistent with the qualitative finding that schools with stronger ICT infrastructure and digital communication systems reported greater confidence in their financial planning and stakeholder engagement (Wambua, 2022; Napisah et al., 2024). This result should nonetheless be interpreted with appropriate caution: because digital transformation was examined here as a single predictor drawn from a broader study in which it correlated strongly with other institutional growth strategies, some of the explained variance may reflect the influence of related but unmeasured organisational capabilities that tend to co-occur with digital investment, such as stronger governance and planning practices.

10. Conclusion, Recommendations and Further Studies

10.1 Conclusion

The study concludes that digital transformation is a strong, positive, and statistically significant predictor of financial sustainability among CaPEIA schools in

the Diocese of Kisii. Schools have made clear progress in teacher digital competence and the use of social media for stakeholder engagement, both of which support communication, transparency, and confidence among parents and partners. However, the moderate overall level of digital transformation, driven down by weak institutional automation, inconsistent use of virtual classes, and limited digital classroom infrastructure; suggests that many schools have not yet captured the full financial benefit that digital adoption can offer. Where digital transformation is deepened, particularly in administrative automation and fee-management systems, it is likely to reduce operational costs, improve financial record accuracy, and strengthen the institution's overall financial position (Khatib et al., 2025).

The study further concludes that digital transformation in these schools is shaped by both internal resource constraints, consistent with the Resource-Based View and Dynamic Capabilities Theory (Barney, 1991; Teece et al., 1997), and external institutional pressure from the Ministry of Education and the Diocese, consistent with Institutional Theory (Scott, 1995). Schools that have received diocesan support for ICT infrastructure and teacher training report more advanced digital practice, underscoring the importance of coordinated diocesan and institutional investment rather than reliance on individual schools acting alone.

10.2 Recommendations

In recommendation, CaPEIA schools in the Diocese of Kisii should prioritise investment in automated administrative and financial-management systems, since this was the weakest-performing indicator of

digital transformation and represents the area of greatest untapped potential for improving financial sustainability. Further, schools should expand the use of virtual classrooms, digital whiteboards, and online collaboration tools, building on the strong existing base of teacher digital competence, to widen access to instruction and support enrolment-linked revenue growth.

In addition, the Diocese should continue and expand its coordinating role, including capacity-building through Ministry of Education officers, curriculum guidance on digital learning, and support for shared ICT infrastructure investment across neighbouring schools to reduce the cost burden on individual institutions. Similarly, Boards of Management should institutionalise digital-readiness monitoring, using Quality Assurance officer assessments and regular infrastructure audits, to track progress and target investment where it is most needed.

10.3 Further Studies

Future research should examine the specific administrative and financial-management processes through which digital transformation translates into measurable cost savings and revenue gains in faith-based schools, and should test the relationship using multivariate models that control for related organisational capabilities such as governance quality and strategic planning.

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