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E-Governance in Community Colleges: Examining Knowledge and Effectiveness

Hari Lal Mainali, Basu Dev Mainali
Chaturbhujeshwar Janata Multiple Campus

Abstract

This study aims to examine students' knowledge and perceptions of e-governance in community colleges, emphasizing its role in enhancing transparency, accountability, and administrative efficiency. Depending upon the Technology Acceptance Model (TAM) and Digital Divide Theory (DDT), the research employs a quantitative, realism based ex-post facto research. Data were generated from 136 students through simple random sampling using structured questionnaires after informed consent. Statistical analyses, including chi-square and independent samples t-tests, reveal that students possess moderate knowledge of e-governance, demonstrating greater familiarity with technological aspects than governance strategies. The findings suggest that while community colleges are advancing toward digital transformation, progress remains hindered by infrastructural and educational gaps. The study recommends integrating governance topics into curricula, implementing digital literacy programs, and enhancing ICT infrastructure to ensure sustainable e-governance adoption.

Keywords: e-governance, higher education, ICT, transparency, administrative efficiency

Corresponding Author
Hari Lal Mainali

Email
hari.mainali35@gmail.com

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Introduction

The integration of information and communication technologies (ICTs) in organizational governance processes is commonly referred to as e-governance (Malodia et al., 2021). E-governance facilitates efficient public service delivery and enhances communication between institutions and citizens. By promoting transparency, accountability, efficiency, and citizen participation, it supports the principles of good governance (Grigalashvili, 2022). Furthermore, e-governance strengthens transparency for stakeholders and reduces administrative burdens (Grigalashvili, 2022).

Higher education institutions (HEIs) worldwide have increasingly adopted e-governance to modernize administrative and managerial systems. Digital tools are widely used for record-keeping, admissions, communication, and examinations, forming the foundation for digital institutions. These applications enhance accessibility, transparency, and graduate employability. The effectiveness of e-governance relies on the system's ability to provide efficient, interactive, and service-oriented operations. Systematic use of ICTs to improve administrative efficiency, transparency, accountability, and service delivery in academic, financial,

and managerial functions constitutes e-governance in HEIs. Globally, e-governance is recognized as an essential transformative approach for digitizing institutional operations such as record management, communication, evaluation, and resource administration (Dwivedi et al., 2017).

The Technology Acceptance Model (TAM) explains how users adopt e-governance by focusing on perceived ease of use and effectiveness (Holden & Karsh, 2010). Conversely, Digital Divide Theory (DDT) highlights inequalities in ICT access and digital skills that exacerbate social exclusion and marginalization. Several South Asian countries, including India, Bangladesh, and Sri Lanka, have promoted integrating e-learning, digital finance, and e-administration within HEIs, following models seen in developed countries with fully automated digital campuses that optimize institutional efficiency (Copra, 2020; Altbach & de Wit, 2020). In Nepal, national initiatives such as the ICT in Education Master Plan (2013–2017), Digital Nepal Framework (2019), and the University Grants Commission's Quality Assurance and Accreditation criteria have advanced ICT-enabled governance in HEIs and public administration.

Problem Statement

Empirical studies demonstrate that e-governance has the potential to significantly improve transparency, accessibility, responsiveness, and academic management in higher education institutions (Sajid et al., 2024; Busmait et al., 2025; Dar, 2022). However, its effective implementation remains constrained by challenges such as inadequate ICT infrastructure, limited digital literacy, financial restrictions, and shortages of skilled human resources. These barriers hinder the full realization of e-governance benefits, particularly in developing contexts like Nepal. Moreover, research suggests that patterns of internet use such as frequency, purposes, and digital skills exert a more profound influence on the adoption of e-governance applications than demographic or socio-economic characteristics (Oktem et al., 2014).

To address these challenges, national initiatives like the Nurturing Excellence in Higher Education Program (NEHEP) have actively supported capacity-building efforts in e-governance across Nepalese higher education institutions, including community colleges (Bhagat et al., 2022; Ghimire & Mishra, 2025). Although such programs have laid foundational groundwork, grassroots-level implementation and, notably, the perceptions and knowledge of key stakeholders such as students remain underexplored. Understanding students' awareness and perceptions is essential because they are both direct beneficiaries of and active participants in digitized administrative and academic processes.

Therefore, this study seeks to fill this gap by assessing students' knowledge and awareness of e-governance and examining how these factors influence their perceptions of its effectiveness in enhancing transparency, administrative efficiency, and service delivery in community colleges. The study's theoretical framework is informed by the Technology Acceptance Model (TAM), which posits that greater perceived ease of use and usefulness lead to higher acceptance of technology (Ananda et al., 2025). By hypothesizing that increased student awareness positively affects their perception of e-governance outcomes, this research contributes to a deeper understanding of adoption dynamics in Nepalese HEIs. The findings aim to inform policymakers, administrators, and stakeholders seeking to strengthen e-governance capacities and foster sustainable digital transformation in community colleges (Mishra & Jha, 2023; Gautam et al., 2025).

Research Objective

Therefore, this study aims to assess students' knowledge and awareness of e-governance and

examine its perceived effectiveness in improving administrative efficiency, transparency, and service delivery in community colleges.

Methodology

To examine the knowledge and effectiveness of e-governance practices in community colleges in the Sarlahi district, Nepal is the aim of the study. The research is growing on a foundation of a quantitative approach with a descriptive cum exploratory research design. A quantitative research approach systematically collects and analyzes numerical data to test theories, identify patterns, and make predictions through structured, objective methods that yield statistically generalizable results (Pandey & Pandey, 2015). Similarly, descriptive cum exploratory research design combines the flexibility of exploratory studies with the systematic description of descriptive research to generate and clarify ideas. The study is entirely guided by the philosophical perspective of positivism. It is a paradigm based on measurement and rational analysis, asserting that true knowledge arises only from objective, quantifiable observation, and that anything unmeasurable cannot be known with certainty (Creswell & Creswell, 2018).

A structured questionnaires were administered to a randomly selected sample of 136 students at the bachelor's level from community colleges. The instrument's reliability and validity were examined, yielding an internal consistency coefficient ranging from 0.82 to 0.87. Before data collection, consent was obtained from both the college administrations and the respondents. Before collecting data, the respondents were informed of the objectives of the study and their right to leave during the information-giving process if they felt uncomfortable. The collected data were systematically analyzed, applying statistical tools such as central tendency, correlation, and regression.

Results and Discussion

Students have moderate e-governance knowledge, stronger in technology than governance, with gaps in infrastructure and digital literacy limiting adoption.

Table 1

Classification of Respondents based on Gender and Program in Community Colleges

		Frequency	Percentage
Gender	Male	56	41.18
	Female	80	58.82
	Total	136	100.00
Program	B. Ed.	92	67.65
	BBS	44	32.35
	Total	136	100.00

The data presented in table 1 shows that 58.82 percent of respondents are female and the remaining are male out of a total respondents from community colleges. The table further indicates a higher involvement of female students in the study. Most of the sampled students are from the Bachelor of Education (B.Ed.) program, making up 67.65 percent of the total in terms of academic program, while remaining of respondents are from the Bachelor of Business Studies (BBS) program. Overall, the respondent distribution highlights a female-dominated sample and a higher concentration of students in the education programs.

Table 2

Students' Knowledge in Application Areas of e-Governance

Variables	Education	Management	Total	Chi-square value	Sig.2 sided
E-governance system	36	16	54	4.754	0.191
Use of the government online services	18	4	22		
Use of technology in administrative works	6	2	8		
All of above	30	22	52		
Total	92	44	136		

Table 2 describes that knowledge about e-governance among college students found a slight difference between education and management group. However, statistical results found no statistically significant difference (χ^2 = 4.754, p = 0.191). Education students were more likely to recognize the e-governance system (36 vs. 16) and also showed higher use of government online services and administrative technologies. Management students, although fewer, showed more practical and confident responses in the "All of the above" category, indicating broader awareness and application. Generally, students from the education stream have detected wider participation in e-governance topics, while Management group students show a more focused and practical understanding.

Table 3

Gender Based Students' Knowledge in the Key Functional Dimensions of e-Governance

Variables	Male	Female	Total	Chi-square Value	Sig. 2-Sided
Electronic governance system	20	34	54	6.448	0.092
Use of the government online service	6	16	22	-	-
Use of technology in administrative works	2	6	8	-	-
All of the above	28	24	52	-	-
Total	56	80	136	-	-

The analysis of Table 3 shows there is no significant gender-based difference in students' perceptions of e-governance (χ^2 = 6.448, p = .092) in community colleges. Though students from the female category appeared somewhat more positive and aware of its functions. Generally, management students have presented better practical knowledge of using technology and governance online services, but education program students displayed more theoretical understanding but less hands-on experience. Generally, the majority of the students recognized the importance of e-governance in strengthening administrative efficiency, highlighting growing digital awareness across both faculties.

Table 4

Analysis of Students' Perception of the Effectiveness of e-Governance in Community Colleges

Variables		f	Sig.	t	df	Sig. 2 Tailed	Mean Difference	Std. Error\ Difference
Smooth administrative process	EVA	4.884	.029	1.266	134	.208	.21739	.17175
	ENVA			1.419	113.703	.159	.21739	.15317
Transparency and accountability	EVA	19.478	.000	3.476	134	.001	.66601	.19160
	ENVA			4.241	132.161	.000	.66601	.15706
Decrease corruption and source misuse	EVA	13.735	.000	.905	134	.367	.1937	.2140
	ENVA			.981	104.573	.329	.1937	.1974
Easy to contact with administration	EVA	1.507	.222	3.093	134	.002	.54150	.17505
	ENVA			3.384	106.933	.001	.54150	.16002
Promptly available information	EVA	.407	.524	.352	134	.725	.07115	.20203
	ENVA			.365	93.226	.716	.07115	.19475
Reduces physical presence	EVA	4.657	.033	.515	134	.608	.12253	.23805
				.534	93.403	.594	.12253	.22931

Note. EVA- Equal Variance Assumed EVNA- Equal Variance Not Assumed

According to table 4, an independent sample t-test was conducted to examine students' perceptions toward the effectiveness of e-governance practices in community colleges across selected dimensions. Levene's Test for Equality of Variances was first applied to determine the homogeneity of variances. When the p-value was less than 0.05, equal variances were not assumed, and the alternative t-test values were considered. The results show that there is a statistically significant difference in perceptions related to transparency and accountability ($t(132.16) = 4.241$, $p < 0.001$) and ease of contact with administration ($t(106.99) = 3.384$, $p = 0.001$). This indicates that students recognize e-governance as having a strong positive influence in promoting transparency and facilitating communication with administrative bodies in the community colleges.

However, no significant differences were observed in the smooth administrative dimensions process ($p = 0.208$), corruption and source misuse decrease ($p = 0.367$), information availability soon ($p = 0.725$), and physical presence reduction at the office ($p = 0.608$). These findings suggest that while e-governance processes have improved communication and accountability, their effectiveness in minimizing corruption, streamlining administrative procedures, and enhancing information dissemination remains limited.

Overall, the statistical results imply that students perceive e-governance as moderately effective, particularly in fostering transparency and accessibility. Further improvements are needed to optimize administrative efficiency and reduce manual dependencies in institutional processes.

Discussion

The study results indicate that students possess a moderate level of knowledge and awareness of e-governance, with greater familiarity regarding its technological components particularly internet use ($M = 1.91$, $SD = 0.285$) compared to their limited understanding of its role in facilitating smoother governance processes ($M = 1.40$, $SD = 0.491$). Similarly, students demonstrated moderate awareness concerning functional aspects such as transparency, grievance handling, and corruption control, but their comprehension of these

governance functions remains weak. This disparity suggests that digital familiarity is predominantly technical and does not extend to a conceptual grasp of governance mechanisms.

Within the functional domain, transparency achieved the highest mean score (M = 1.63, SD = 0.514), whereas information flow scored the lowest (M = 1.28, SD = 0.450). This pattern reflects that students recognize e-governance's role in promoting openness but underestimate its importance in systematic communication and data management within institutions. Hence, students' digital competence appears more focused on operational technical skills than on the administrative and conceptual dimensions of e-governance.

Statistical analysis via independent samples t-tests revealed significant differences in student perceptions regarding transparency and accountability ($t(132.16) = 4.241$, $p < .001$) and ease of contact with administration ($t(106.99) = 3.384$, $p = .001$). These findings suggest that e-governance is perceived as effective in enhancing transparency and facilitating communication between students and administrative bodies. However, no significant differences emerged in perceptions related to softer administrative processes ($p = .208$), corruption reduction ($p = .367$), timely information availability ($p = .725$), or minimizing the need for physical office presence ($p = .608$). Thus, while e-governance improvements in openness and accessibility are evident, operational efficiency gains and administrative streamlining lag behind.

Overall, students perceive e-governance as moderately effective, with evident strengths in transparency and accessibility but notable weaknesses in administrative efficiency, corruption mitigation, and information management. This aligns with the Technology Acceptance Model's premise that technology adoption depends on perceived usefulness and ease of use (Holden & Karsh, 2010), underscoring students' confidence in digital tools but limited understanding of their governance implications.

These results corroborate finding by Dar (2022), who reported enhanced transparency and responsiveness in higher education institutions facilitated by e-governance. Nevertheless, enduring challenges such as deficient ICT infrastructure, limited human resources, and inconsistent policy frameworks highlighted by Sajid et al. (2024) and Busmait et al. (2025) continue to constrain effectiveness. Furthermore, the findings resonate with the Digital Divide Theory (Reynolds, 2021), which points to disparities in access, digital literacy, and connectivity as critical obstacles to equitable e-governance adoption.

The evidence indicates that Nepalese community colleges are in an intermediate phase of digital transformation. E-governance has begun to improve transparency and communication, yet shortcomings in digital infrastructure, comprehensive user training, and institutional commitment remain significant barriers. To fully harness e-governance benefits, institutions must advance beyond technology adoption towards cultivating a robust e-governance culture through targeted education, strategic investment, and supportive policy measures (Bhagat et al., 2022; Ananda et al., 2025; Mishra & Jha, 2023; Gautam et al., 2025).

Conclusion

The findings of this study offer valuable implications for policymakers and administrators in community colleges seeking to establish sustainable and inclusive e-governance practices. To move beyond technical adoption and foster a participatory governance culture, e-governance concepts should be integrated into academic curricula, enhancing students' conceptual understanding of transparency, accountability, and institutional efficiency. Concurrently, the modernization of ICT infrastructure and digital administrative systems is essential to improve operational efficiency and reduce reliance on manual processes. Sustained financial and technical support from bodies such as

the University Grants Commission and provincial authorities through initiatives like the Nurturing Excellence in Higher Education Program (NEHEP) is critical to advancing digital transformation in higher education institutions.

While this study contributes important insights, its focus on community colleges within Sarlahi District, Nepal, limits generalizability. The reliance on quantitative, cross-sectional data captures perceptions at a single point in time but overlooks deeper qualitative dimensions and temporal changes. Future research should adopt mixed-method approaches with larger, geographically diverse samples, including viewpoints from administrators and policymakers, to gain a comprehensive understanding of e-governance adoption and its institutional impacts.

Practical recommendations involve embedding e-governance modules and workshops in university curricula, expanding ICT infrastructure by improving internet access and establishing secure digital databases, and providing continuous ICT training for students, faculty, and staff. Establishing robust monitoring and evaluation frameworks will facilitate ongoing assessment of e-governance effectiveness. Additionally, fostering partnerships with private-sector technology providers can ensure access to innovative, affordable digital solutions tailored to community colleges' needs.

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