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Enhancing Rural E-Governance through Improved Digital Access: A Case Study of Sudurpashchim Province, Nepal

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Abstract

This article investigates how improved digital access can foster effective rural e-governance in Sudurpashchim Province, Nepal. The province, marked by its geographical remoteness and limited infrastructure, continues to struggle with digital inclusion. A quantitative survey approach was employed, targeting 300 rural respondents selected via purposive sampling. The study assessed internet accessibility, ownership of digital devices, digital literacy, and usage of online government services. Findings indicate that only 35% of the population has consistent access to the internet, mainly through mobile phones, while 65% remain digitally excluded. Major barriers identified include limited connectivity, unaffordable digital tools, and lack of awareness or training. Additionally, respondents from digitally connected areas showed a higher tendency to use government services online, such as applying for official documents or accessing agricultural support. The research highlights how digital exclusion leads to a perpetuation of marginalization in public service delivery. To address this, the study proposes targeted policy interventions including the expansion of broadband networks, community-based training programs, and affordable device schemes. The findings offer valuable insights for policymakers aiming to strengthen inclusive e-governance in underdeveloped regions. This research contributes to the broader discourse on digital equity, public service innovation, and rural development through evidence-based policy recommendations.

Keywords: *E-Governance, Digital Access, Rural Nepal, Internet Use, Sudurpashchim Province, Digital Inclusion*

Introduction

Sudurpashchim Province (SUP), located in the far-western region of Nepal, is one of the most geographically and socio-economically marginalized areas in the country. It comprises remote hills and plains, where physical connectivity and infrastructure development have traditionally lagged behind other provinces. While the federal structure in Nepal aims to ensure balanced development, the digital divide between

urban and rural areas remains a major challenge, especially in provinces like Sudurpashchim.

Sudurpashchim Province, encompassing nine districts, is characterized by a predominantly agrarian economy, high poverty rates, and limited industrial development. The region's rugged terrain and dispersed settlements pose significant challenges to infrastructure development, including roads, electricity, and telecommunications. These factors contribute to the digital divide, as residents in remote areas have limited access to digital technologies and services.

E-governance, defined as the use of information and communication technologies (ICT) to deliver government services to citizens in an efficient, transparent, and accessible manner, has emerged as a transformative tool in public administration (Tennakoon, 2020). Globally, digital governance has improved service delivery, increased citizen engagement, and promoted inclusive development. However, rural areas in developing countries continue to face multiple barriers including poor internet infrastructure, low digital literacy, and lack of awareness of online services (Addo & Senyo, 2021; Naqvi et al., 2021).

In Nepal, although the government has introduced several digital initiatives under the Digital Nepal Framework, the reach and effectiveness of these programs in rural areas like Sudurpashchim remain limited. According to Bhagat (2023), increasing digital adoption in Nepal is paralleled by rising digital exclusion in remote areas. Giri (2019) notes that access to services in rural Nepal is often hindered not only by geography but also by a lack of digital tools and skills. Thus, digital accessibility plays a critical role in shaping the success of rural e-governance.

Digital inclusion is crucial for ensuring equitable access to government services, especially in rural regions. It enables citizens to participate in governance processes, access essential services, and improve their socio-economic conditions. Therefore, understanding and addressing the barriers to digital inclusion in Sudurpashchim Province is vital for the successful implementation of e-governance initiatives.

Problem Statement

Despite national efforts to advance digital governance, rural regions in Nepal, particularly Sudurpashchim Province, continue to face significant challenges in

accessing and utilizing e-governance services. These challenges are rooted in poor internet infrastructure, high device and service costs, and limited digital literacy.

Objectives of the Study

a. To assess the state of digital accessibility in rural areas of Sudurpashchim Province.

b. To identify the barriers that prevent rural populations from utilizing digital governance services.

c. To compare service utilization between populations with and without access to digital tools.

d. To provide policy recommendations for enhancing digital inclusivity and e-governance.

Review of Literature

In the Context of Nepal E-governance in developing countries has received growing attention, with studies highlighting its potential to improve administrative efficiency and civic participation. Kuzior et al. (2023) emphasized that digital infrastructure and technological advancement are essential for smart and inclusive governance. Grigalashvili (2022) clarified the conceptual differences between e-government and e-governance, stressing the importance of both in enabling responsive administration.

In the Nepali context, Maharjan et al. (2021) found that Nepal's digital systems face challenges such as low software usability, lack of trust, and inadequate digital readiness. Bhagat (2023) noted the rise in cybersecurity issues that further hinder e-governance. Giri (2019) underlined the structural barriers such as insufficient internet access, unreliable electricity, and limited ICT infrastructure as key obstacles to implementing e-services in rural Nepal. Pandey and Risal (2019) discovered that community participation, digital awareness, and social dynamics significantly influence the effectiveness of e-governance initiatives. Buddhacarya et al. (2019) discussed the potential of mobile technology and social media in promoting digital services.

Naqvi et al. (2021) stressed the need for integrating IoT and cloud technologies in public administration. Ridwanullah et al. (2019) reported that e-governance systems significantly improve service satisfaction. Sahoo et al. (2022) applied multi-criteria decision-making methods to optimize e-governance practices in India. Al-Rzoky et al.

(2019) advocated for real-time analytics for improving digital services. Bojang et al. (2019) outlined the challenges of ICT adoption in developing countries, including sustainability concerns.

Badu (2024) focused on the challenges of implementing e-governance in the local bodies of Sudurpashchim Province. The study identified top challenges including ICT infrastructure, ICT literacy/awareness, laws and policy, finance, privacy and security, and the digital divide. The research emphasized the importance of government empowerment, stakeholder recognition, and active engagement to address emerging needs and ensure the success of e-governance projects.

Shewale and Laturkar (2019) discussed the success of Common Service Centers in Maharashtra. Abah et al. (2019) identified inadequate legal frameworks and infrastructure as key challenges in Nigeria. Lee-Geiller and Lee (2019) proposed a democratic model for citizen-centered e-governance. Zulmasyhur et al. (2024) recently emphasized the role of digital transformation in governance reforms.

Research Gap

While various studies have explored e-governance at national or urban levels, few have concentrated on rural areas, particularly Sudurpashchim Province. National policies often overlook localized needs and conditions. There is limited empirical data that addresses how digital infrastructure, affordability, and training gaps affect the actual use of e-governance tools by rural citizens. This study aims to fill this gap by examining real experiences of rural users and non-users to identify how and why disparities exist.

Significance of the Study

The study contributes localized, evidence-based findings to inform both policymakers and digital inclusion advocates. By assessing ground-level realities of digital access, this research helps uncover the gaps between policy design and practical implementation. The insights provided can aid in designing more inclusive and efficient rural e-governance strategies by aligning digital services with community needs, infrastructure capacity, and user capabilities. Moreover, the study serves as a reference for future researchers and development agencies focusing on digital transformation in underdeveloped regions.

Research Methodology

This research followed a quantitative approach using structured questionnaires. The focus was to understand the level of digital access and its correlation with usage of e-governance services. A purposive sampling method was adopted to select 300 participants from different rural municipalities across Sudurpashchim Province. The sample included individuals with varying access to internet services, digital devices, and literacy levels. Data were collected through field surveys conducted in person. Respondents were asked to complete a structured questionnaire designed to assess their digital access and behavior. Below is a sample of the questionnaire and their tabular format.

Table 1

Research Questions

Question Number	Question
Q1	Do you have regular access to the internet at home or on your phone?
Q2	What type of digital device(s) do you own? (Smartphone, Computer, None)
Q3	Have you ever used any government services online? (Yes/No)
Q4	If yes, which services have you used? (e.g., utility bill payment, ID)
Q5	Have you received any formal training in using digital tools? (Yes/No)
Q6	What are the main challenges you face in using digital services?

Results and Discussion

The collected data were analyzed using descriptive statistics to determine the percentage of respondents with internet access, device ownership, usage of online government services, and digital skills training. The analysis also involved cross-tabulation to identify correlations between digital access and the utilization of e-governance services. Table 2 shows the descriptive statistics of respondents.

Table 2

Descriptive Statistics of Respondents

Respondent ID	Internet Access	Device Type	Used E-Services	Trained in Digital Skills
1	Yes	Smartphone	Yes	No
2	No	None	No	No
3	Yes	Smartphone	Yes	Yes
4	No	Feature Phone	No	No
5	Yes	Computer	Yes	Yes
6	No	Smartphone	No	No
7	Yes	Smartphone	Yes	No
8	No	None	No	No
...	...	...	...	...

Table 2 shows the status of the access and uses of the digital services among the respondents. The results show that majority of the respondents have access to digital services.

Table 3

Data Summary Table

Digital Services Usage	% with Access	% without Access
Internet Access	35%	65%
Smartphone Ownership	40%	60%
Used Online Gov Services	30%	70%
Trained in Digital Skills	20%	80%

The results show that only 35% of respondents had consistent internet access, with mobile phones serving as the primary means of digital interaction. Those with access were more likely to use government digital services such as applying for citizenship

certificates, paying utility bills online, and accessing agricultural subsidies. About 30% of respondents had used such services. Meanwhile, 65% of respondents still relied on manual methods or visits to physical offices due to limited or no access to the internet.

A significant number of respondents 60% did not own a smartphone or computer, indicating that affordability is a major constraint. Moreover, only 20% of participants had received some form of digital training. These individuals demonstrated more confidence and frequency in using online platforms, underscoring the importance of digital literacy programs.

Regions with better digital connectivity also exhibited greater use of digital platforms for governance. Interview feedback revealed that areas with community Wi-Fi hubs or ICT centers had significantly better engagement with e-services. On the other hand, lack of infrastructure and awareness in other villages led to total reliance on paper-based services. This unevenness reflects not only infrastructural gaps but also social and educational disparities.

These findings support the conclusions of Pandey and Risal (2019), who argued that digital tools alone are not enough without awareness and training. Furthermore, it aligns with global trends noted by Kuzior et al. (2023), where successful digital governance depends on access, affordability, and education

Conclusion

The study concludes that digital accessibility significantly influences the adoption of e-governance in Sudurpashchim Province. Poor internet infrastructure, lack of affordable devices, and low digital literacy are major obstacles. However, evidence shows that regions with better access and training make greater use of digital public services. To promote inclusive governance, the government should invest in expanding broadband coverage, subsidize devices for low-income families, and implement community-based digital literacy programs. Bridging the digital divide is essential to ensure equal access to public services and inclusive development in rural Nepal.

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