



ROLE AND IMPACT OF INFORMATION TECHNOLOGY IN LOCAL GOVERNMENT OF NEPAL

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Abstract: IT strategies are well-planned, long-term approaches to connecting the government with citizens. To support their e-government goals, federal, state, and local governments are investing in the development of information technology strategies. E-government enhances and expands citizens' access to infrastructure and services. The purpose of this paper is to investigate the strategic role of information technology in e-government and the impact of information technology use. According to the study's findings, better IT strategy configuration with various projects, clear legislation, implementation guidelines, and standards are required. The study focuses on improving governance by incorporating information and communication technology (ICT) into public service delivery, i.e., increasing efficiency, accountability, and transparency.

Keywords: e-governance, ICT for development, service delivery, anticorruption, transparency, process reform

I. INTRODUCTION

Local governments are the bedrock upon which democratic governance is built. They are, in a sense, the citizens' governments. Local governments are governments in your neighborhood and on your doorstep. According to one widely articulated and accepted definition of democracy advanced by US President Abraham Lincoln, democracy is a system of, for, and by the people (Haney, J. 1944).

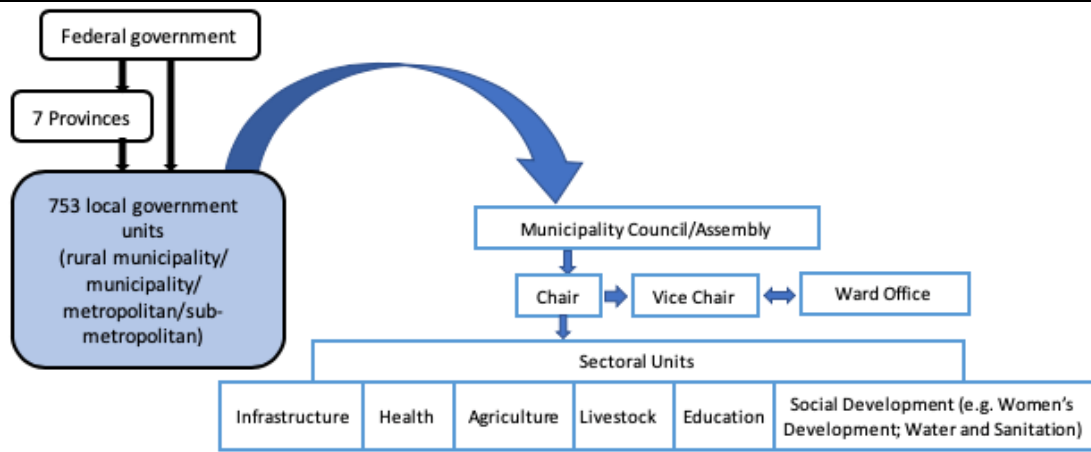
Today, over 70 countries around the world are implementing political and administrative reforms aimed at decentralizing and strengthening local governance (Sisk, 2001). As a result, democracy in its true sense is a form of decentralized governance.

According to Part 17 of the Nepalese Constitution, rural municipalities are governed by a Village Executive, which is led by a chairperson. The Village Executive is made up of the deputy chairperson, ward chairpersons elected from each ward in the rural municipality, four female members elected from the Village Assembly, and two members from Dalit or other minority communities. Part 18 of Nepal's Constitution states that the Village Assembly has all the legislative powers of the rural municipality.

It comprises the chairperson, deputy chairperson, ward chairperson, and four ward members elected from each of the rural municipality's wards, at least two of whom must be women. Members of the Dalit or minority community who are elected to the Village Executive also serve on the Village Assembly. Part 17 also includes provisions for a Judicial Committee led by the deputy chairperson and comprised of two other Village Assembly members. Schedules 8 and 9 of the constitution deal with powers that the local executive can exercise independently or in tandem with the federal and provincial governments.

At the local level, some authorities in rural municipalities have included the collection of various taxes such as entertainment, business, and residential taxes. The annual budget for rural municipalities will be at least Rs 10 million. The rural municipalities are also members of the National Association of Rural Municipalities (NARMIN), a governing body for Nepal's 460 rural municipalities.

The federal system concept has divided Nepal into seven provinces, 77 districts, and 753 local levels. Each province now has its government, in addition to the federal government in the center.



Local governance in Nepal resumed after a two-decade hiatus with the 2017 elections. It was the first election held under the new constitution.

Mayors, deputy mayors, chairpersons, vice chairpersons, and members of municipalities and rural municipalities were elected. The new local governments have been in operation for 5 years. On May 13, 2022, the second election is held, and newly elected people's representatives begin working. The new constitution portrays local governments as powerful, functional, and autonomous units of government. However, there are numerous challenges in putting constitutional provisions into action. The local government is the closest government to the people's daily lives.

What is information technology?

Information technology is the use of computers, storage, networking, and other physical devices, infrastructure, and processes to create, process, store, secure, and exchange all types of electronic data (IT). It is typically used in the context of business operations, as opposed to personal or recreational technology. Computer technology and telecommunications are both included in IT for business.

The IT department oversees making sure that all the organization's systems, networks, data, and applications are connected and working properly. The IT team oversees three major areas:

- deploys and maintains business applications, services, and infrastructure (servers, networks, storage);
- monitors optimize, and troubleshoots application, service, and infrastructure performance; and
- oversees application, service, and infrastructure security and governance.

Most IT personnel have various responsibilities within the team, which are divided into several key areas, including:

- **Administration:** Administrators oversee the day-to-day deployment, operation, and monitoring of an IT environment's systems, networks, and applications. Other duties that administrators frequently perform include software upgrades, user training, software license management, procurement, security, data management, and adhering to business process and compliance requirements.
- **Support:** Help desk personnel are trained to answer questions, gather information, and direct troubleshooting efforts for hardware and software. IT support frequently includes IT asset and change management, assisting administrators with procurement, handling data and application backup and recovery, monitoring and analyzing logs and other performance monitoring tools, and adhering to established support workflows and processes.
- **Applications:** Software is used by businesses to perform tasks. Some applications, such as email server applications, are obtained and deployed from third parties. However, many organizations maintain a team of skilled developers who create the applications and interfaces (such as APIs) required to deliver critical business capabilities and services. Applications can be written in a variety of popular programming languages and integrated with other applications to create smooth and seamless interactions between them. Developers may also be tasked with developing interactive business websites and mobile apps. The trend toward agile or continuous development paradigms necessitates developers becoming more involved in IT operations, such as application deployment and monitoring.
- **Compliance:** Businesses must adhere to a variety of government and industry-driven regulatory requirements. IT personnel plays a critical role in securing and monitoring access to business data and applications to ensure that such resources are used by established business governance policies and regulatory requirements. These employees are deeply involved in security tasks and regularly interact with legal and business teams to prevent, detect, investigate, and report potential breaches.

Examples of information technology

Five common examples of IT and teams at work:

- **Server upgrade.** One or more data center servers are near the end of their operational and maintenance lifecycle. IT staff will select and procure replacement servers, configure, and deploy the new servers, backup applications and data on existing servers, transfer that data and applications to the new servers, validate that the new servers are working properly, and then repurpose or decommission and dispose of the old servers.
- **Security monitoring.** Businesses routinely employ tools to monitor and log activity in applications, networks, and systems IT staff receive alerts of potential threats or non-compliant behavior -- such as a user attempting to access a restricted file -- check logs and other reporting tools to investigate and determine the root cause of the alert and take prompt action to address and remediate the threat, often driving changes and improvements to security posture that can prevent similar events in the future.

- **New software.** The business determines a need for a new mobile application that can allow customers to log in and access account information or conduct other transactions from smartphones and tablets. Developers work to create and refine a suitable application according to a planned roadmap. Operations staff posts each iteration of the new mobile application for download and deploys the back-end components of the app to the organization's infrastructure.
- **Business improvement.** A business requires more availability from a critical application to help with revenue or business continuance strategies. The IT staff might be called upon to architect a high-availability cluster to provide greater performance and resilience for the application to ensure that the application can continue to function in the face of single outages. This can be paired with enhancements to data storage protection and recovery.
- **User support.** Developers are building a major upgrade for a vital business application. Developers and admins will collaborate to create new documentation for the upgrade. IT staff might deploy the upgrade for limited beta testing -- allowing a select group of users to try the new version -- while also developing and delivering comprehensive training that prepares all users for the new version's eventual release.

Information technology (IT) strategies are organized and long-term approaches to connecting government with citizens. Federal, state, and local governments are investing in the development of IT strategies to promote their e-government goals. To investigate the strategic role of IT in government. The findings of this study indicate that better configuration of IT strategies with different projects, clear legislation, implementation guidelines, and standards are required. (Gajendra Sharma, Manish Pokharel, 2016) They conclude ability of people to adopt ICT is significant for economic, social, and political development. Clear legislation, implementation guidelines, and standards in terms of the technologies that are used to support e-government will need to be recognized by the respective governments, and closer collaboration will need to be established between different local agencies and central government to facilitate the smoother implementation and diffusion of e-government.

ICT Infrastructure developed by Local Governments is higher than in Rural Local Governments, and ICT-based human resource capacity is higher in urban areas than higher, and in Rural Local governments ICT Adaptation opportunities and threats, both are higher. People are highly educated so they want prompt service and it is only possible through ICT adaptation. Hence, the entire metropolis mechanism should be ICT-friendly (Rajeshwor Gyawali, 2018). The use of ICT for public service delivery can be more effective through integration, linkage, and inter-operability mechanism among government organizations, departments, and business entities (Shailendra Giri, Subarna Shakya, 2018). The success of public ICT projects is possible only when there is the active participation of all stakeholders (particularly citizens) (Altameem et al., 2006) and their acceptance in all aspects such as providing incentives to the private sector (because of the use of public money), acceptance of service offered and willingness to pay for the services by the end users.

To draw a clear picture of successful negotiations (execution of ICT projects through PPP) and operation, a tri-patriate model connecting the citizens' perspective, the government perspective, and the private sector's perspective is important (Bikram Acharya, 2018). IT projects are often fraught with cost overruns and delays. Moreover, once deployed, many systems fail to meet functional requirements or are too complex to be feasible for many organizations. This study details one agency's attempt to leverage technology to improve responsiveness and stimulate productivity. The implementation effort made it possible to capture pre- and post-implementation results. It concludes that the high-risk nature of IT initiatives is grounded in intangible resource requirements (Mary Maureen Brown, 2001).

Impact-oriented indicators should be well considered that includes public service quality, user satisfaction, innovation, and evaluation of e-government services (OECD, 2011). Other factors are quickness in the public sector, openness, transparency and public participation, and effective policy implementation. There is a need to observe improving policy factors for e-government capacity building, common standards, security guidelines, quality, completeness, depth, and spread of services, coordination, mindset, etc (Kalsi and Kiran, 2012). The emergence of e-government is witnessed due to the developments in ITs that are harnessed to provide the operations of government services (Alkhaleefah et al., 2010, Krishnan and Thompson, 2011).

Municipal Council, Ludhiana aims to introduce automation and governance through ICT and GIS to simplify and improve its performance to improve service delivery, provide better information management and ensure citizen participation in governance (Dinesh Sharda and Dr. Mahendra Singh Khichar, 2021). In large and diverse countries with low levels of ICT literacy, larger numbers of citizens may face problems because their service requests do not conform to standards. Mechanisms need to be designed to handle such cases (Subhash Bhatnagar, 2014).

As repeatedly pointed out in this paper, the limited impact of ICT on governance and empowerment in developing countries is a result of the failure to scale up and replicate successful pilots (Harris and Rajora 2006). It is necessary to create a proactive organization that can spot scalable and successful innovations in the use of ICT and that can support the organizations involved in the innovation to replicate such experiments in areas that they deem as being ready.

Overview of India in information technology

In India, local government refers to governmental jurisdictions below the state level. India is a federal republic divided into three levels of government: central, state, and local. The 73rd and 74th constitutional amendments recognize and protect local governments, and each state has its local government legislation. Local government in India has taken two distinct forms since 1992. Urban localities have Nagar Palika but derive their powers from individual state governments, whereas rural localities' powers have been formalized under the Panchayati raj system, as defined by the 73rd amendment to the constitution.

The democratically elected local government bodies in India are known as "municipalities" (abbreviated as "mc") in urban areas and "Panchayati raj institutes (PRI)" (simply known as "panchayats") in rural areas. Based on population, there are three types of municipalities: municipal corporations (Nagar Nigam) with more than one million people, municipal councils (Nagar Palika) with more than 25,000 but less than one million people, and municipal committees (Nagar panchayat) with more than 10,000 but less than 25,000 people. In rural areas, panchayats are organized into three hierarchies: gram panchayats at the village level, Mandal, or block panchayats at the block level, and Zilla panchayats at the district level.

Panchayats cover approximately 96% of India's more than 5.8 million villages and nearly 99.6% of the rural population. As of 2020, there were approximately 3 million elected representatives at all panchayat levels, with nearly 1.3 million of them being women. These members represent over 2.4 lacks (240,000) gram panchayats, over 6,672 intermediate-level panchayats samiti at the block level, and over 500 Zila Parishads at the district level. Following the 2013 local election, 37.1% of councilors were women, and local government spending accounted for 16.3% of total government spending in 2015/16.

The National Satellite-Based Computer Network (NICENET) launch in 1987, followed by the District Information System of the National Informatics Centre (DISNIC) program to computerize all district offices in the country, for which free hardware and software were offered to State Governments, provided the necessary impetus for e-governance.

Following that, as technology advanced, e-Governance emerged. There are numerous e-Governance initiatives underway today, both at the federal and state levels. The Department of Electronics and Information Technology and the Department of Administrative Reforms and Public Grievances developed the National e-Governance Plan (NeGP) in 2006, intending to make all government services accessible to the common man while ensuring efficiency, transparency, and reliability of such services at an affordable price.

The NeGP has enabled many e-governance initiatives:

- **Digital India** was launched in 2015 to empower the country digitally. Its main components are:
 - Developing a secure and stable digital infrastructure
 - Delivering government services digitally
 - Achieving universal digital literacy
- **Aadhaar** is a unique identification number issued by UIDAI that serves as proof of identity and address based on biometric data. It is being used to provide many benefits to the members of society. One can e-sign documents using Aadhar.
- **myGov.in** is a national citizen engagement platform where people can share ideas and be involved with matters of policy and governance.
- **UMANG** is a Unified Mobile Application that provides access to central and state government services including Aadhar, Digital Locker, PAN, Employee Provident Fund services, etc.
- **Digital Locker** helps citizens digitally store important documents like mark sheets, PAN, Aadhar, and degree certificates. This reduces the need for physical documents and facilitates easy sharing of documents.
- **PayGov** facilitates online payments to all public and private banks.
- **Mobile Seva** aims at providing government services through mobile phones and tablets. The m-App store has over 200 live applications which can be used to access various government services.
- **Computerization of Land Records** ensures that landowners get digital and updated copies of documents relating to their property. In addition to the above,

State-level e-governance initiatives include:

- **E-Seva (Andhra Pradesh)** facilitates the payment of utility bills, and the issuance of certificates, licenses, and permits.
- **Khajane Project (Karnataka)** digitalized the treasury system of the state.
- **FRIENDS (Kerala)** is a single-window facility to pay taxes and other financial dues to the State government.
- **Lokvani Project (Uttar Pradesh)** is a single-window solution relating to the handling of grievances, land record maintenance, and providing a mixture of essential services.

ICT development in Nepal

In a world that has excelled in e-governance over the last 30 years by using information and communication technology, Nepal ranks 137th out of 193 countries in the e-governance development index (EGDI) (ICT). The United Nations defines e-governance as "the application of ICT in government operations, achieving public ends by digital means". As a result, the twin goals of e-governance are paperless and faster public policy decisions through bureaucratic processes and operations, as well as efficient and effective service delivery to citizens and businesses. The goal is good governance at all levels of government.

The Asian Development Bank has been assisting Nepal in the Governance Reform Programmed for over two decades (2001). Deependra Bahadur Thapa, then joint secretary in the Ministry of General Administration, prepared a study report on the importance and rationale of a paperless government. Nepal also passed the necessary legislation to make e-governance a reality. The Electronic Transaction Act of 2006 theoretically legalized digital signatures for "some" contracts and transactions, and the Information Technology Umbrella Act of 2014 is a significant legal advancement. These laws were supplemented by the IT Policy 2010, ICT Policy 2015, e-Governance Master Plan (eGMP) 2007, eGMP-II 2015, and 10-Year Master Plan 2011. This research is focused on the study of the Role and Impact of Information and Technology on the Local Government of Nepal. Information Technology is a very important medium of communication and automates the working system which is fast, secure, and more efficient. As Nepal has a federal system it has three governments, Central Government, State Government, and the Local Government. In the Central and State governments there is already much more ICT infrastructure to implement Information Technology in its system but Local Governments are very diverse some are in rural areas and some are in urban. The Local Government has much more responsibility towards the public for giving services but due to a lack of budget, they are not able to provide many more IT-based services. So, this research is based on the collecting primary data of all Local Governments on 300 or more respondents using structured questionnaires distributed using e-mails, online survey websites, social networking websites & one to one questionnaire requests. Secondary data mainly include the Ministry of Federal Administration and other government websites.

II. MATERIALS AND METHODS

Research design

The researchers have applied survey research to collect primary data from employees of government organizations about the use of Information Technology in different sections of the Local Government to provide service to the public.

Sources of data

The sources of data can be divided into two kinds:

1. Primary Data Sources: Some data specifically was produced for research, which was collected from various sources like
 - a) Online Survey Tools
 - b) One-to-One Questionnaire Requests
 - c) Personal E-mails
2. Secondary Data Sources: Some existing publications related to the ICT services in Local Government were also referred to in this research. Their sources are
 - a) Journals.
 - b) Websites

Data collection method

The primary data for the research was collected by using the survey method. The secondary data for the form website of the Ministry of Communication and Information Technology and Ministry of Federal Affairs & General Administration of Nepal & the objective of categorizing the IT services In Local Governments of Nepal. A simple random sampling method was used for primary data collection.

Study population

The Population for the research includes the number of Local governments that are using Information Technology services for administration work and providing services to the people.

Size of sample

The sample size for this research is 104 Local Governments.

Data collection instrument

A validated structured questionnaire is used as the data collection instrument for gathering inputs from the users of the ICT tools to give the services to the public, which served as the primary data for the research.

Data analysis and data interpretation

A questionnaire was made to generate responses from around 104 respondents who are adopting Information Technology to give services to the public. The responses can be used to analyze the data and derive appropriate results. This response will help to achieve the objectives of this research. Answers to certain questions can be found using the questionnaire method.

III. RESULTS

The questionnaire is sent to 753 Local Governments of Nepal. Which includes Metropolitan Cities, Sub-Metropolitan Cities, municipalities, and Rural-Municipality. The data interpretation and data analysis can be done as follows:

The response from the different types of Local Government from different Province is taken. Out of 104 responses from the Metropolitan, 2% responses from sub-metropolitan, 26% responses from the Municipality, and the Highest 72% from the Rural-Municipality. This shows that the Right to Information Act, of 2064 is not well implemented in Local Government. Although It is compulsory by law. The questionnaire is sent two times in Official Emails of Local Governments, Information Officers, and Information Technology Officers. It takes only 10 to 20 minutes to fill out if all answers are collected. The time frame for the questionnaire was given 15 days according to Right to Information Rules, 2065.

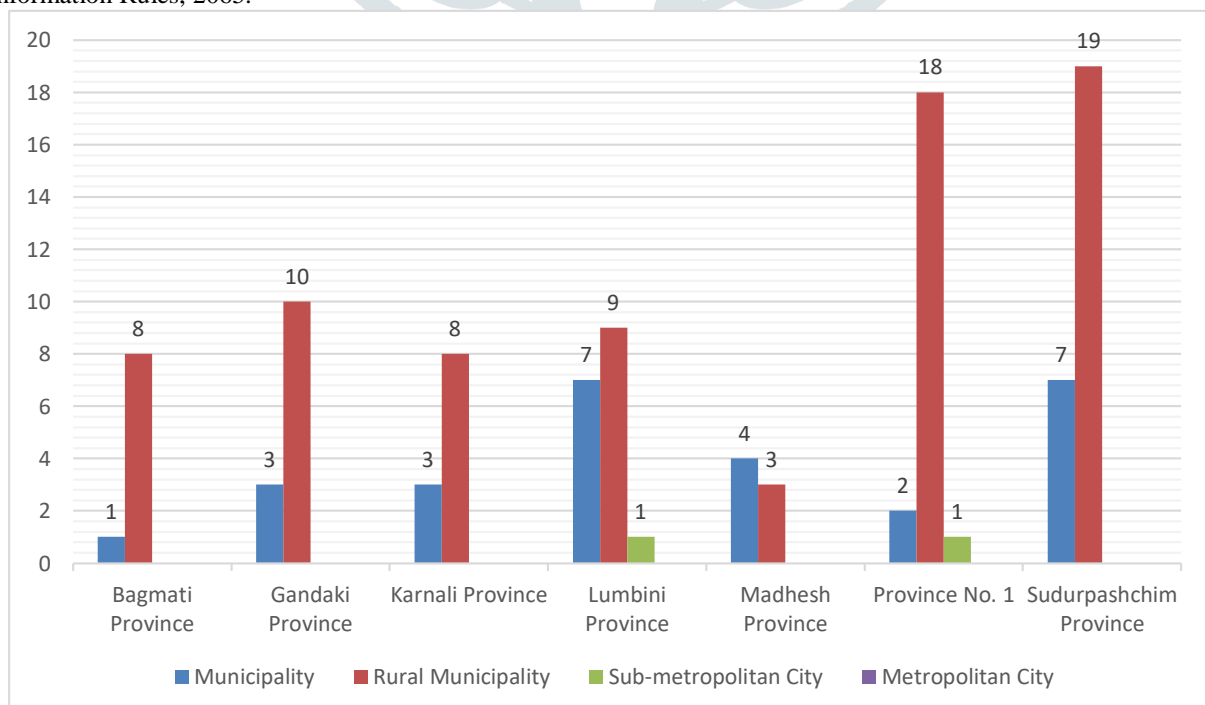


Figure I: Response of Participants from different provinces in Nepal

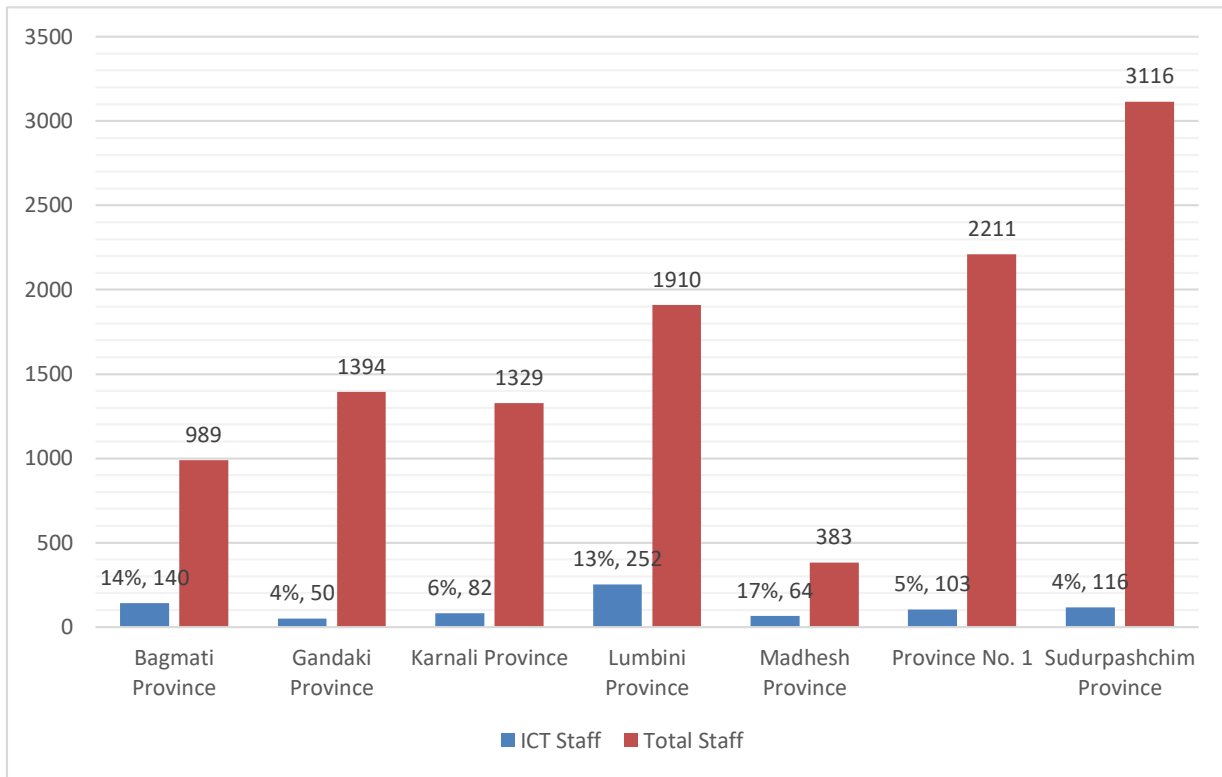


Figure II: Response of participants having basic ICT knowledge

From the given bar graph, we can analyze that the local government of the Gandaki Province has the lowest ICT staff which is 4% and the Madhesh Province has the highest ICT staff which is 17% out of the total staff employed in the Local Government of that Province. Role of the Information technology started in all Local governments of the different provinces of Nepal.

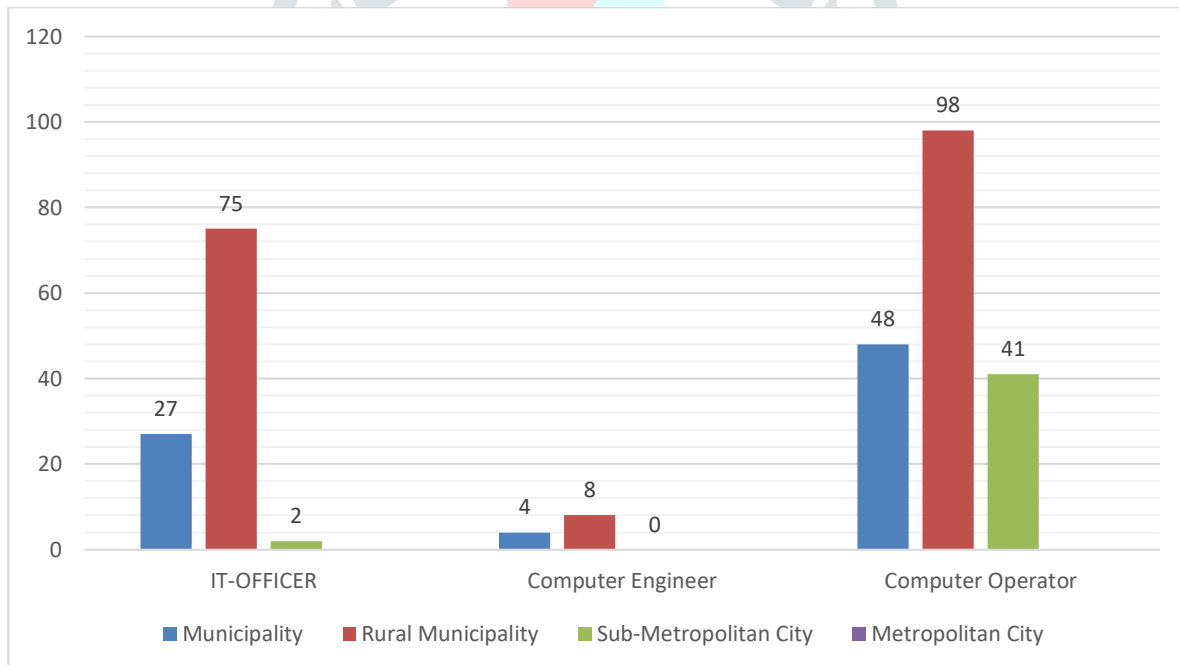


Figure III: Bar graph showing the number of Dedicated ICT Staff in Local Government (IT-Officer, Computer Engineer, and Computer Operator)

The given bar chart gives the count of the total IT-Officers, Computer Engineer and Computer Operator in Local governments. From the survey, all all-Local Governments have a dedicated IT-Officer. All the Local Governments have more than one computer operator in their office. But in the case of Computer Engineer, only a few Local Governments have dedicated.

This study revealed that about 71% of the Rural-Municipality provide an Information center that citizens can access, 63% of municipalities provide an Information center to the citizens and 100% of Sub-Metropolitan cities provide an information center that citizens can access. This is possible due to Information and Technology.

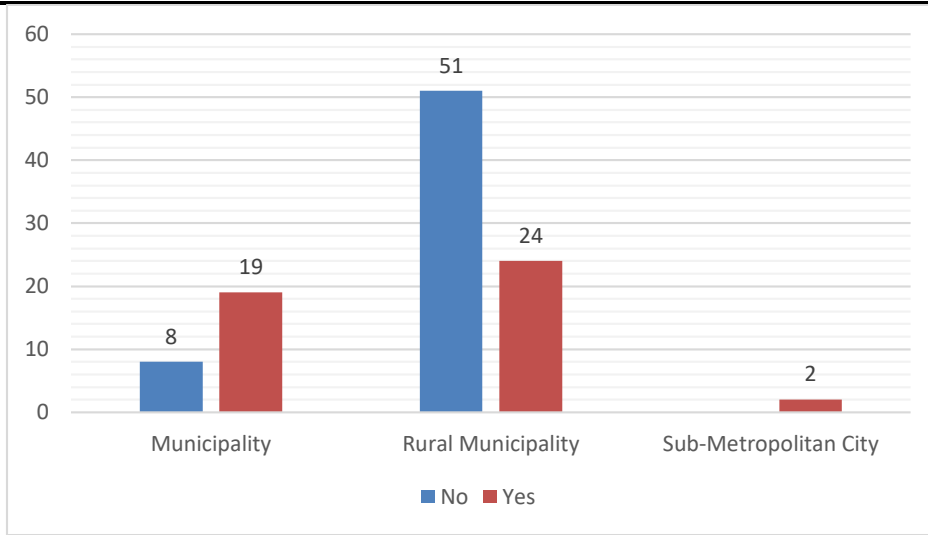


Figure IV: Bar graph showing the availability of working fixed telephone connection in local government

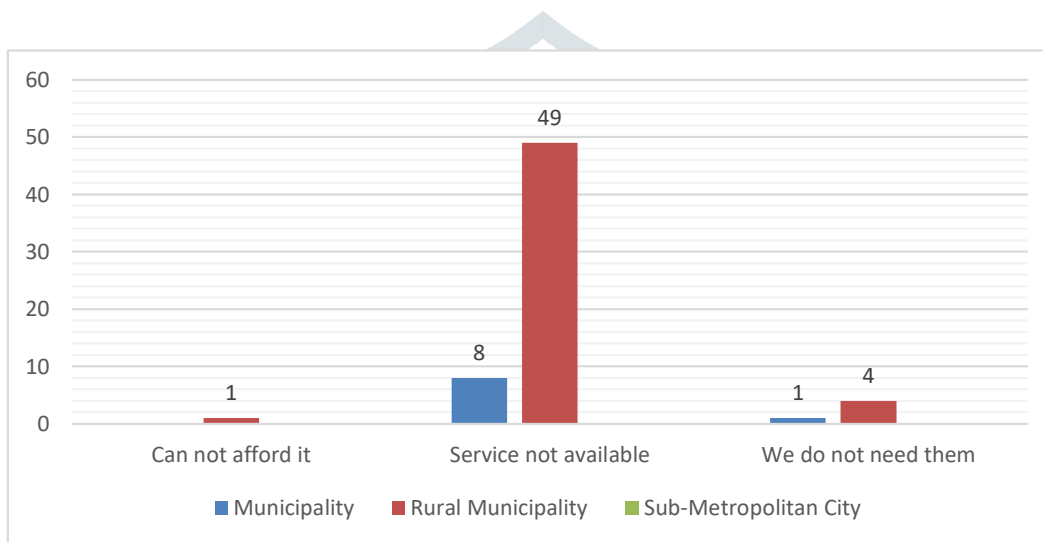


Figure V: Bar graph showing the response of participants for not having a working telephone in their local government setting

For the implementation of Information Technology in Local Government Communication is very important. The telephone is the basic need for communication with anyone in anywhere in the world. In this survey, most of the local governments do have not fixed-line telephone connections. Since Rural-Municipality are located in rural areas of Nepal, fixed-line telephone infrastructure is not available as the reason for not having a fixed-line telephone is shown in Figure V.

Budget Allocation for the ICT in Local Governments

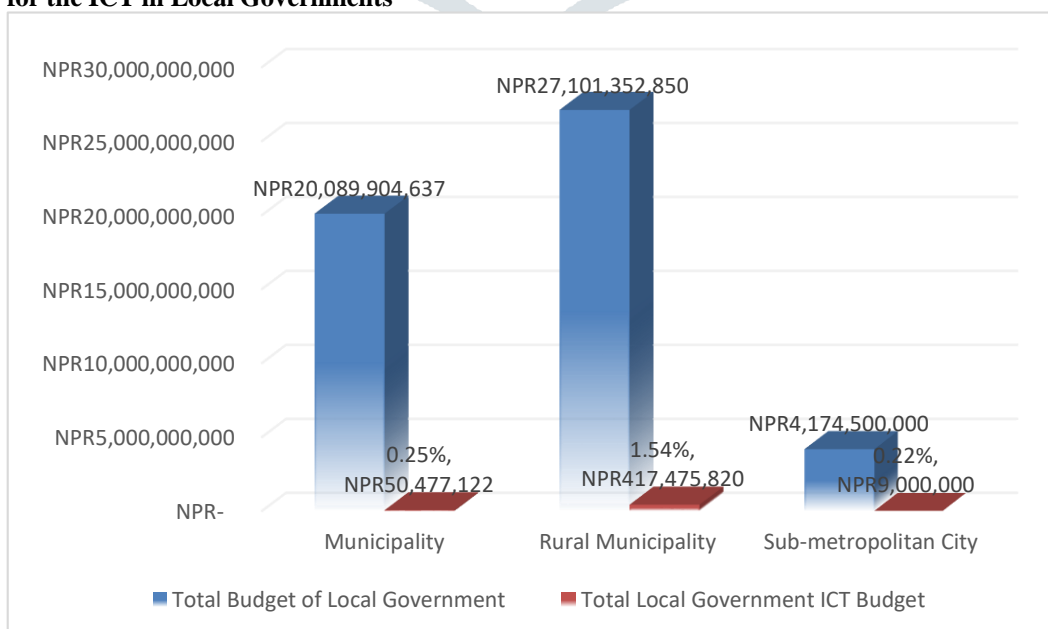


Figure VI: ICT Budget of local government

Developing the infrastructure of the Information Technology budget is a necessary part. Without a budget, we cannot establish ICT-based services and e-governance. The above bar graph of different types of Local Governments' budget allocation. Rural municipalities are more focused on developing ICT infrastructure than others. Here Rural Municipality allocated 1.54% of its total budget for the Information Technology Sector, Municipality allocated 0.25% of its total budget and the Sub-Metropolitan city allocated only 0.22% of its total budget. So Local Governments are focusing on the development and implementation of Information and Technology.

In Local Government, there are different branch offices, and ward offices located in different places. To make the communication between them it is necessary to have some communication medium to send and receive news, notices, and information. So local governments are trying to establish ICT-based communication. From this survey, 34% of local governments have used Leased lines through private ISP, and 28% have Leased Lines on NTC which is a government base telecommunication company. 9% have used Virtual Private Networks and 29% still used hard copies or traditional ways of communication.

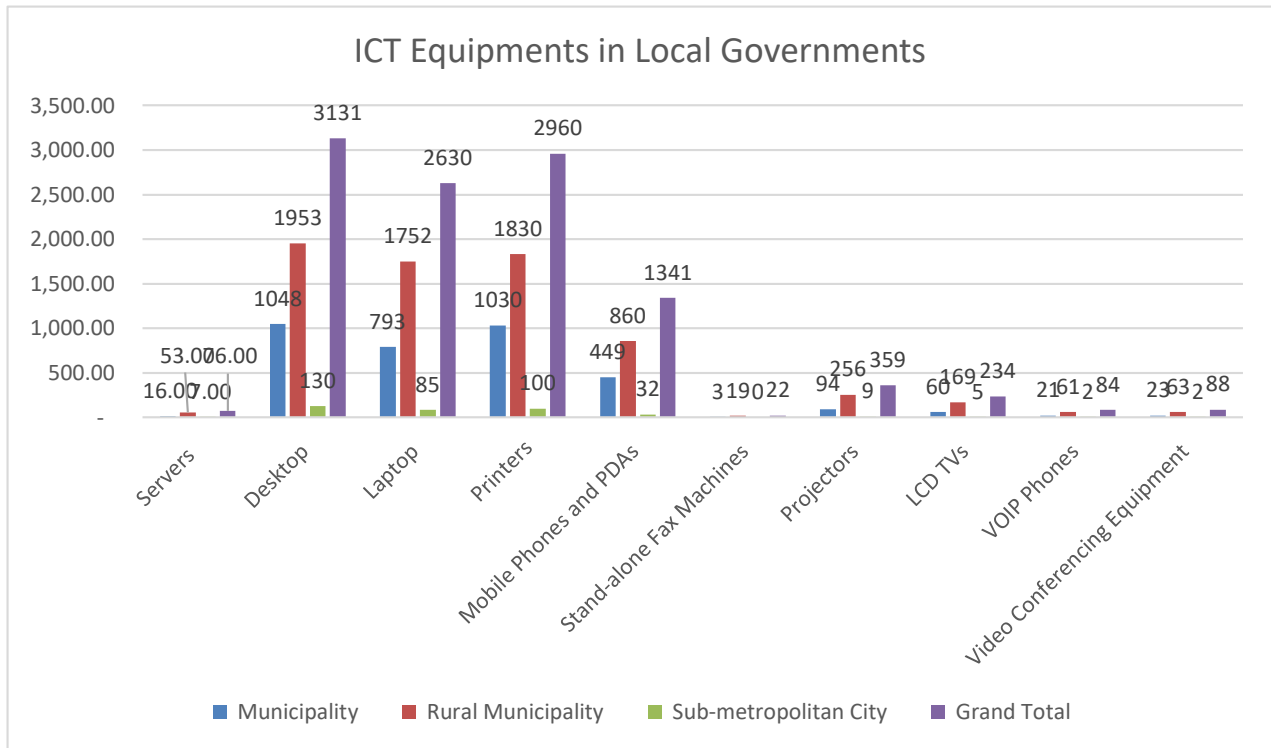


Figure VII: ICT equipment used by local government

ICT components are the main backbone of Information Technology. In Local governments of Nepal. In the survey availability of the different ICT, components are asked. In every Local government, two or more two desktop computers, laptops, and printers are available for the working purpose. As we can see in the above graph, desktop computers and laptops are mostly used for daily administrative and service-based work. Then printers are mostly used for printing letters and documents. Many local governments are using the server to host web-based applications and store data. So local governments are rapidly adopting Information Technology to establish e-governance. For better use of Information Technology and faster ways of communication between branches within the office LAN (Local Area Network) plays a very important role. This survey revealed that 65% of the Local Governments are using the LAN for the improvement of communication with each other within offices or branches. Still, 35% are not using this technology may be due to a lack of infrastructure or skilled manpower, or budget.

Computer Connected in LAN (Local Area Network)

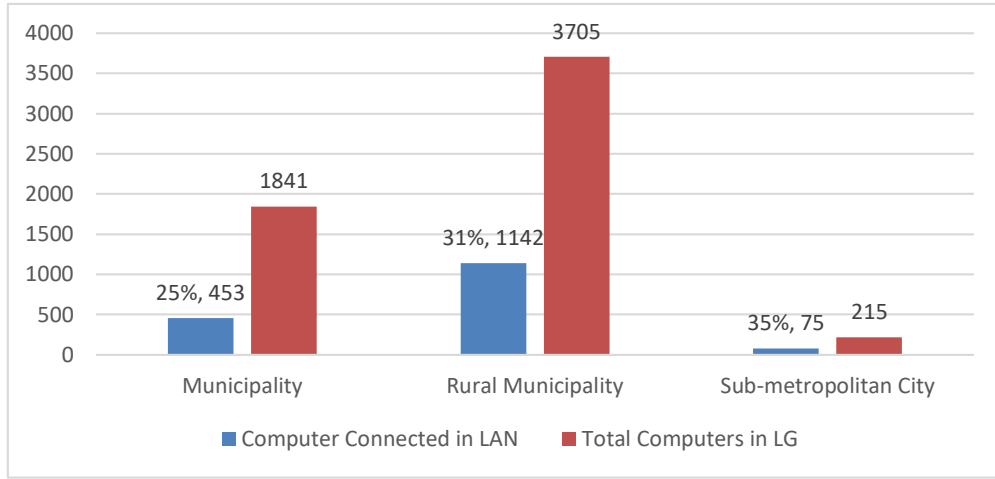


Figure VIII: Bar graph showing the computer connected in LAN

As we know most of the work in the Local government is digitalized or computerized, we have also taken a survey of how many of the available computers are connected to the Local Area Network. As in the above bar graph, 25% of computers are connected to LAN in Municipality, 31% of computers are connected to the LAN in the Rural-Municipality and 35% of the computer are connected in the Sub-metropolitan City. So, most of the available computers are not connected to LAN in the Local government to date.

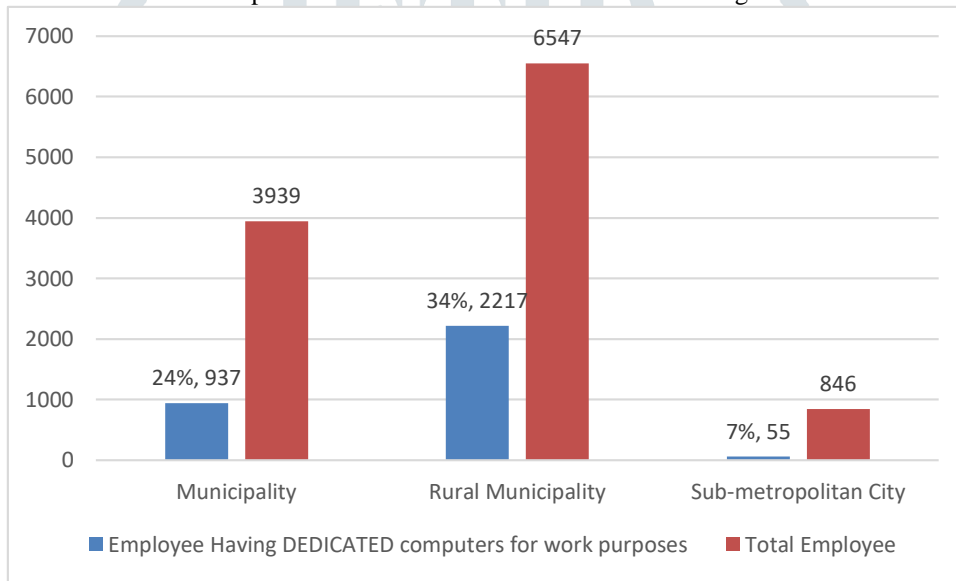


Figure IX: Bar graph showing the availability of dedicated computers for work

An intranet can be defined as a private network used by an organization. Its primary purpose is to help employees securely communicate with each other, store information, and to help collaborate. In Nepal, 31% of Local governments are using the intranet and 69% are still not using it. It shows that local governments are aware of the private network and data safety of the government.

In the modern era of technology without computers, it is very difficult to do work. All the administrative work is done through the computers. So, for the faster delivery of services and administrative operations, each employee should use the computer for the work rather than manual. The Bar Graph data of total employee's vs employee's dedicated computers used for work shows that in Municipalities only 24% used computers for work, in Rural-Municipality 34% of the total employee have used computers and in Sub-metropolitan Cities, only 7% of employees are using dedicated computers.

In a survey, we asked how important the usage of computers is for your Local Government. Then we set the three answer criteria. 12% of the total local governments say Important, 2% says Moderately Important and 86% of the Local Governments say very important. This shows that Information Technology plays a very important role in service delivery and positively impacts local governments.

The Cost of buying bandwidth from ISP in Local Governments

As the Internet is the backbone for the implementation of Information Technology, we take a survey for the different local governments whether the service is affordable or not. As from the above pi-chart, 61% say it is affordable at their local level. 12% have very affordable and 14% say not sure and 13% say unaffordable. Due to geographical structure and difficulties, it is very difficult to extend ISP services in a rural part of Nepal. So, the government should invest in the construction of infrastructure in rural areas.

The reliability of the Internet connection in Local Governments.

As the ISP is available at the local level the reliability of the internet connection should be good for the continuous work and smooth flow of services. From the surveyed data 62% have good reliability, 15% have very good reliability and the remaining are poor, or very poor.

The speed of the internet connections at Local Governments

The quality of the services depends on the quality of the internet. If the speed of the internet is stable then we can flow the services smoothly. The pie chart of the speed of the internet in different local governments shows that 46% have the fast speed of the internet. 30% have slow internet, 12% have very fast and 10% have very slow internet. So mainly in the rural part of the local government have slow speed due to the wireless radio communication. And some places have only 3G and 4G connection of the telecom which is very slow for the daily use of the internet.

The websites of Local Governments and their condition

To ensure the e-governance in the local government website is the main platform for the flow of news and information to the people. The Nepal Government makes it compulsory to have a website to broadcast its news and notices to the public by local government. In our survey, all surveyed local governments have a website. This is a good example of implementation of the Information Technology for good governance and e-governance.

Only having a website is not enough for good governance. To be good e-governance the website must be updated frequently and kept UpToDate so that the public gets the latest news and information in time. According to our survey, 63% of local governments have updated their website several times a day according to their needs. 16% updated once a day, 10% updated once every few days, 6% updated once a week or less frequently, 4% are updated twice a day and 1% says daily updated.

Social Media officially used by Local Governments

In this modern era of technology, most people are engaged in social media. The best way of communication is through social media. We can easily broadcast our messages, news, and notices through social media. According to our survey, almost all local governments are using social media for communication. The present study shows that 32% of Local government are using Facebook as their official social media, 20% are using Facebook, Twitter, and YouTube, 18% are using Facebook and Twitter both.

The condition of the Official social media used by the Local Governments

Having social media in the local government is not enough for implementation of the e-governance. For the good implementation of Information technology and good governance, the official social media should be UpToDate. From the survey we found that 62% of local governments are updated several times a day, 14% are 2% twice a day, 12% once a day, once every few days, and 5% are once a week or less frequently updated their social media.

Official Emails in Local Governments

Official Emails are the main way of communication with the local government. Email is used daily to send and receive mail from different offices and the public. Nowadays without email, there is not possible to have faster official communication for sending and receiving important documents. In this study we found that 37% of Local government have Emailed the only main office and 63% have Emailed every office of the local government. All local governments have their official emails.

Software and E-services Used in Local Governments

The e-service and software are used to establish e-governance. In our survey, we ask local governments whether they used some e-services developed by central local governments. This study shows that SuTRA (Sub-National Treasury Regulatory Application) is used by 100%, VERSP-MIS software developed by the Ministry of Home Affairs, Department of National ID and Civil Registration is used by 99%, Database Software by 46%, and Office Applications by 98%.

Findings of the study

- Information Technology is the main backbone for the implementation of e-governance. The IT strategy is an organized and long-term approach to connecting the government with citizens.
- The local governments are investing in Information Technology to give services to the public faster and easy access to all.
- In the new federal system, the central government is more focused on Information technology-based services which make governance easier and more transparent.
- Many Local governments lack the ICT infrastructure because they are located in very rural places and due to geographically challenging.
- The ICT manpower is very less due to the lack of training and equipment.
- The local governments follow the rules made by the central government so they are implemented many applications developed by the Nepal government to insure e-governance.
- All most all local governments have their website, official emails, and social media accounts to broadcast notices and news to ensure the right to information.
- The response rate is very low in the local governments if the public is demanding the information due to the irresponsibility of the Information officer. So, the right to information act and regulations are not properly followed by most Local governments.
- The problems of dedicated internet and phone lines are seen in the rural local governments in Nepal.
- The dedicated ICT budget allocated by the Local Governments is very low for the development of the ICT infrastructures.

Limitation of study

Information Technology has a great role in local government. Many Local governments cannot reply to the survey questionnaires. So, in data analysis, we use the sample data method. If all local level replied then we can analyze with total population data and the result may

be 100% accurate. So Local governments are not focused on giving information to the public who demand the Information according to the Right to Information Act, of 2064.

Improvement Plans

There are many suggestions for the local government for the implementation of Information technology. For the good implementation of e-governance, local governments should have good, dedicated IT teams. The IT officer at Local Governments should have good knowledge of e-governance, system, hardware, software, networking, and system administration. The Local Governments should allocate enough budget for the development of the ICT infrastructure so that e-platforms should be operated. The employees at Local Government should give good ICT-related training so that the workflow increases and fast and good services are delivered to the public.

IV. CONCLUSION

The research was carried out among samples from the different Local Governments of Nepal. We have collected different data to analyze whether the Implementation of Information Technology is implemented in the Local Governments. According to the research data, many local governments are improving the implementation of Information Technology by adopting e-services and manual works are overridden by computers. The findings presented in this paper will hopefully inspire other researchers and local governments to further investigate this topic. Information Technology is the backbone of e-governance and in coming years the implementation of this technology in Local Governments in a more advanced way. In conclusion, the role and impact of Information Technology in Local Governments of Nepal are in their early stage. It makes a huge difference to the public but should be improved in the future.

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REFERENCES

- [1] <https://mofaga.gov.np/local-contact?visible=753>
- [2] <https://plgsp.gov.np/>
- [3] <https://apihimalmun.gov.np/>
- [4] <https://sudurpashchim.gov.np/>
- [5] <https://www.tandfonline.com/doi/full/10.1080/02681102.2019.1596654>
- [6] <https://ieeexplore.ieee.org/document/9211290>
- [7] <https://journals.sagepub.com/doi/10.2190/ET.43.1.f>
- [8] <https://nap.nationalacademies.org/read/763/chapter/4#12>
- [9] <https://onlinelibrary.wiley.com/doi/pdf/10.1002/j.1681-4835.2002.tb00047.x>
- [10] <https://www.researchgate.net/publication/228461455> Information Technology in Nepal What Role for the Government
- [11] <https://onlinelibrary.wiley.com/doi/abs/10.1002/j.1681-4835.2002.tb00047.x>
- [12] <https://www.emerald.com/insight/content/doi/10.1108/PAP-01-2022-0006/full/pdf?title=a-study-of-the-capabilities-and-limitations-of-local-governments-in-providing-community-services-in-nepal>
- [13] <http://www.nppr.org.np/index.php/journal/article/view/4>
- [14] <https://www.researchgate.net/publication/338986653> ICT TOOLS AND SERVICE DELIVERY A CASE OF NEPALESE CIVIL SERVICE
- [15] <https://www.emerald.com/insight/content/doi/10.1108/07419050610660753/full/html>
- [16] Gajendra Sharma, Manish Pokharel, *THE STRATEGIC ROLE OF INFORMATION TECHNOLOGY IN E-GOVERNMENT: A CASE OF NEPAL*, Vol 8, No 1, 2016 ISSN: 2146-0744 (Online)
- [17] Shailendra Giri, *International Journal of Computer Science and Mobile Computing*, Vol.7 Issue.4, April- 2018, pg. 47-52
- [18] Rajeshwor Gyawali, *Nepalese Municipal Governance: A comparative case study of Kathmandu and Lalitpur metropolitan cities*, 05/10/2018
- [19] Bikram Acharya, *Modeling local government's Perception towards implementation of ICT infrastructure and services through Public Private Partnership Mechanism: Case of Nepal*, 01/02/2018.
- [20] Mary Maureen Brown, *The Benefits and Costs of Information Technology Innovations: An Empirical Assessment of a Local Government Agency*, Vol. 24, No. 4 (Jun. 2001), pp. 351-366 (16 pages)
- [21] Dinesh Sharda and Dr. Mahendra Singh Khichari, *Role of ICT in Municipal Government with special reference to Municipal Corporation Ludhiana Punjab*, *International Journal of Advanced Academic Studies* 2021; 3(2): 15-18
- [22] Subhash Bhatnagar, *Public Service Delivery: Role of Information and Communication Technology in Improving Governance and Development Imp*, NO. 391 March 2014