ANALYZING CHALLENGES FOR THE IMPLEMENTATION OF E-GOVERNMENT IN MUNICIPALITIES WITHIN KATHMANDU VALLEY

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Abstract

Over the past decade, rapid progress in ICT has encouraged governments to incorporate new technology into their national development strategies. With the growing demands of citizens and changing global rules and regulations, governments are under pressure to deliver quality services at right time. E-government has recently emerged in Nepal that's why so many issues remain problematic for initiation e-services in local government. The current stages of municipalities within Kathmandu Valley were investigated by using four stage e-government maturity model (information, interaction, transaction, integration). An understanding of the current status of e-government in local government can help policy makers in the country pursue development of the public sector organizations on the one hand, and would be of importance for Nepal's economic future success on the other. Identifying the precise problem is important in order to overcome the inherent challenges. Valuable primary data is collected from questionnaire survey and content analysis. Different challenges regarding initiation of e-based services in municipalities are categories into Financial, Human, Organizational, Technical and Legal & other challenges. The current status of e-based services delivery initiatives in Municipalities and problematic challenges in implementation of e-based services initiatives were being investigated. Lack of strategic plans, change management, budget constraint, weak infrastructure, literacy, lack of construction knowledge, lacks of leadership supports, security and privacy are found to be the most problematic challenges regarding implementation of e-service in municipalities.

Keywords: ICT, Challenges, e-Government, Municipality

1. Introduction

Everyone human being has the right to take part in the government of his or her country. In 21st century Information Communication and Technology (ICT) is very powerful instrument for influencing the social thinking process and popular opinion building. The role of ICT is to improve government interaction with citizens. It facilitates citizen in exchanging information with government in faster, more generously and less expensively for decision-making and for development. They can improve government and strengthen democracy and citizen empowerment, and can help foster most transparent governance by enhancing interaction between government and citizens (United Nation, 2007). As the information revolution gradually permeates developing countries, more and more governments are embracing e-Government as a tool for enabling, enhancing and accelerating interaction with citizens, increasing effectiveness and efficiency in the delivery of government services, and improving transparency and accountability (World Bank, 2009). The term 'Local Government' is inclusive of municipalities, city council's administrative bodies' representative of government's role in geographically defined districts in promoting the social, economic, environmental and cultural well-being of communities. Local government also provides a high number of services, and up to 80% of citizen-government transactions take place at the local level (Podder, 2013). Local bodies are the front runners in providing service delivery to the public.

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The advent of the internet, digital connectivity, the explosion and use of e-commerce and e-business models in the private sector are pressuring the public sector to rethink hierarchical, bureaucratic organizational models (Ndou, 2004). The effective use of ICT in local government helps to strengthen good governance, which can make a significant contribution to the achievement of good e-Governance initiation. Major Objectives of e-Governance initiative are to increase citizen participation in local governance, to increase efficiency and efficacy of services delivered by the municipalities by introducing a range of on-line services, to enhance transparency in the working of local government outfits – specifically the municipalities, to provide expanded access to information resources to facilitate bottom-up citizen centric urban planning (Adhikari, 1997). To implement the spirit of the Local Self-Governance Act – 1999 (LSGA) into action, different services had been decentralized to the local bodies like Municipalities and VDC. As per the LSGA, the municipalities are providing urban services to their citizens. Almost all municipalities of Nepal have conceptualized to update its current information system by strengthening its linkages with communities and giving special consideration for improving the lift style of citizen. Most of the municipalities are depending upon the traditional systems and are basically focused on the physical infrastructure development. The objective of this study is to investigate current status of e-Government initiatives on municipalities and to identify the challenges for successful e-Services initiatives in Municipalities.

2. Rationale of Study

Modern governments are steadily transforming from the traditional department centric model to a citizen centric model for delivering services. Although ICT usage in persistent in both public and private sectors continues to experience exponential growth there is still, we don't know about how municipalities can maximize the benefits of ICT. Rural Urban Partnership Programme (RUPP) 2007, had Conceptualization of e-Governance in local government. Local bodies are the front runners in providing service delivery to the public. Even after the promulgation of new constitution of local bodies still remain the first link between the government and the public. Local bodies are the face of the governance for the public. E-Government can positively affect the public service delivery if and only if the local bodies are well equipped to deliver the e-service to the public. But e-based services initiatives have not been successfully implemented in any municipality. As Government of Nepal has recently formed number of municipalities in different districts. The quality of service delivery will be improved, enabling Local Governments to build a good image and trust by citizens. Local Government has shared problems with regard to e-based service will guide for other. Issues and challenges faced by proficient municipalities in its initiation of e-government will be guide for newly formed municipalities for meeting the national goal to implement e-Government.

3. Methodology

The study focused on understanding the current status of e-Government initiative and tried to explore the challenges for implementing e-based services in municipalities with in Kathmandu valley from and citizen point of view. Content analysis is used to fine the current phases of maturity model for e-Government in local government. Content analysis is a systematic and quantitative technique for studying communication messages and developing inferences concerning the relationship between messages and their environment (Podder, 2013). A number of website assessment indicators have been developed for assessing municipality websites. The website is assessed and rated based on information availability, service delivery, and public access features in municipality websites. A maturity model proposed by Podder B, 2013 which is implemented for evaluating Local e-Government is taken as based to measures the features and online services available through a local government website within Kathmandu Valley. A local e-Government maturity model comprising of four stages aims to include government citizen interaction and delivery of all government services. Each stage of the model can be understood as one

Table 1: Four Phases Maturity model for e-Government

Phases	Name	Description
Phase 1	Information	The first stage involves a website presence that provides an overview of useful municipal information for citizens. The website is considered to be static and enables citizens to access information and download forms. Citizens are viewed as consumers of information at this stage, in which communication is one-way and no online transactions take place.
Phase 2	Interaction	At this stage, Municipality have an enhanced website presence, with various capabilities that enable citizens to interact with local government. This stage involves two-way-communication, but lacks a full online transaction facility.
Phase 3	Transaction	In this stage, citizens can complete entire, secure online transactions of value that require confidential personal and financial information. For example, citizens are able to electronically pay taxes, fines, rates or fees. This stage provides citizens with facilities that allow them to do transaction with their local government online, any time and from any place.
Phase 4	Integration	This stage involves both internal and external integration. For external interfaces, governments build a single and unified portal providing integrated and seamless services instead of separate and distributed services.

element in formulating a strategic milestone of locale-Government development and progress. The four stages are seen as four spaces in a continuous development process in municipality, and should therefore be used as indicators for positioning the municipality in the e-Government landscape, rather than as absolute measures. A description of the four stages of the used model is given in Table 1.

3.1 Evaluation Rules

To evaluate the websites of municipalities, each of the 45 features in the assessment was given a score of '0' or '1.0' or '2.0', indicating the degree of completeness or the web based implementation of a particular feature. The details of the scoring used are as follows:

First stage: Information

Score: 0 – No information about a given service or function exists on the website.

1.0 – Very limited information is provided on the website.

2.0 - Substantially complete information is available on the website.

Second stage: Interaction

Score: 0 – Not able to interact with the Municipality online.

1.0 – Limited ability to interact with the municipality online.

2.0 - A form with pre-defined service types, together with other features, appears on the screen when a request for a service feature is selected.

Third stage: Transaction

Score: 0 – Unable to carry out a transaction online with Municipality.

1.0 – Making payment without completing process.

2.0 – Completing a process and making payment.

Fourth stage: Integration

Score: 0 – No integration with other departments of the municipal or with other government organizations.

1.0 – Partial integration is available.

2.0 –Complete multiple processes involving different government organization.

The research was able to identify and develop suitable research methods. The method used in the study is Qualitative and Descriptive. Major data collection techniques used in the study were questionnaire survey and content analysis. As the study was designed to understand the issues and challenges of implementation of e-services in local government from demand sides, a set of questionnaire were prepared for service seekers. Different statements were placed for the respondents to know their attitude which was measured in a strongly agree to strongly disagree

five-point Likert Scale Format. A quantitative research methodology using a survey questionnaire has been selected as the primary data collection method for finding the current challenges for implementing ICT based services in municipalities. Numbers of closed format questions were used limiting individual responses to multiple choice. The views from 1 to 5 taking 1 for strongly disagree and 5 for strongly agree in five-point Likert Scale to measures the central tendency. This enabled the information to be grouped and analyzed statistically using SPSS. The survey questionnaire was distributed to a total of 225 citizens, who came to different municipalities in Kathmandu valley for different purpose. From 225 questionnaires distributed, 194 responses were received which is a very good response rate of 86.22%.

4. Result and Discussion

4.1 Municipalities Website Analysis

The quality of the websites depends on the amount of content, its usefulness and how often it is updated, as well as navigability, usability, search capacity, accessibility, and download time. Much of this is assisted by user-centered design techniques. Information is collected through the evaluation of websites and e-Government maturity in Municipalities within Kathmandu Valley. The website analysis scores of the 18 Municipalities within Kathmandu Valley (access date 28th June 2019) is shown in Table 2. The total scores were obtained by adding together the scores for each item. Thus, the maximum possible total score for each website was 90. Table 2 also shows the website analysis scores for each stage.

Table 2: Website maturity scores within Kathmandu Valley

S. N.	Municipality's Name	Information (Max 44)	Interaction (Max 15)	Transaction (Max 14)	Integration (Max 12)	Total Score (Max 90)	Remarks
1	Budanilkantha Municipality	24	6	0	2	32	
2	Chandragiri Municipality	32	5	0	2	39	
3	Dakshinkali Municipality	40	12	0	2	54	
4	Gokarneshwar Municipality	20	9	0	2	31	
5	Kageshwari Manohara Municipality	32	7	0	2	41	
6	Kathmandu Metropolitan	40	9	0	2	51	
7	Kirtipur Municipality	37	11	0	2	50	
8	Nagarjun Municipality	26	9	0	2	37	
9	Shankharapur Municipality	22	5	0	1	28	
10	Tarakeshwar Municipality	20	8	0	2	30	
11	Tokha Municipality	26	7	0	2	35	
12	Lalitpur Sub metropolitan	37	7	0	2	46	
13	Mahalakshmi Municipality	22	5	0	2	29	
14	Godawari Municipality	36	9	0	2	47	
15	Bhaktapur Municipality	36	6	0	2	44	
16	Changunarayan Municipality	19	5	0	0	24	
17	Madhyapur Municipality	28	7	0	2	37	
18	Suryabinayak Municipality	32	6	0	2	40	

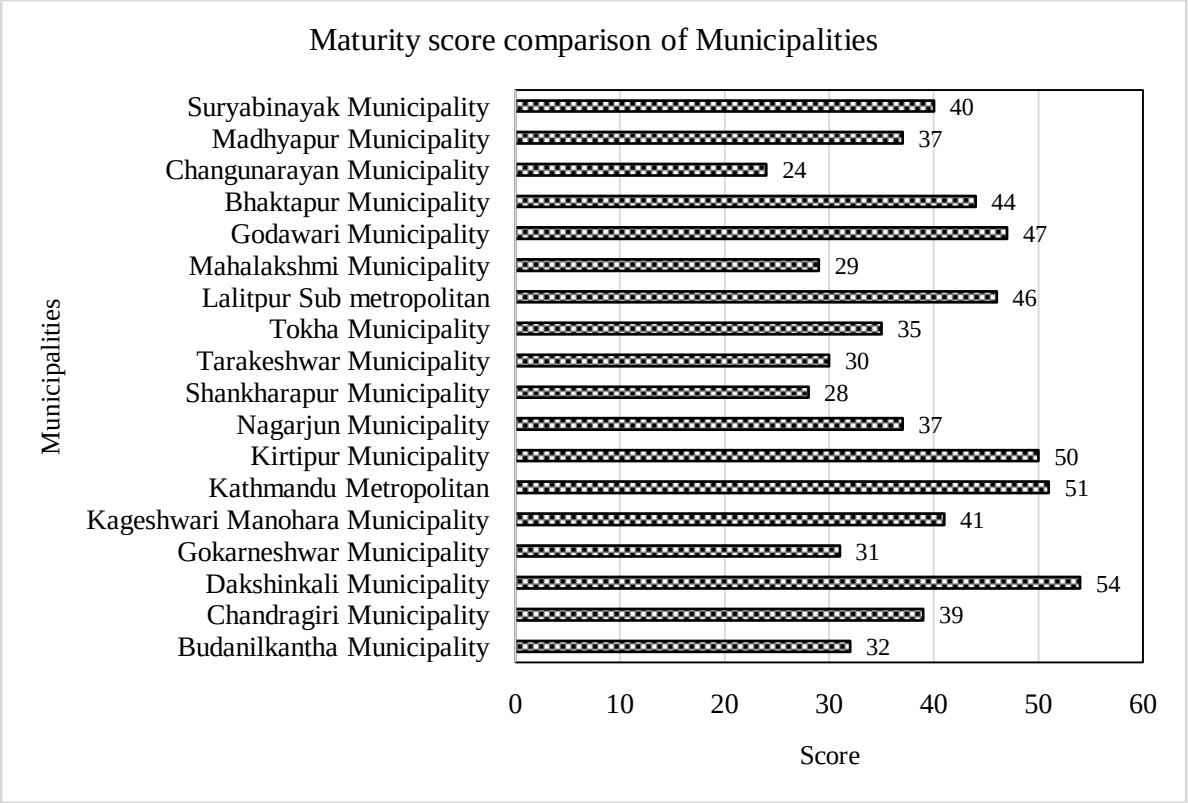

Fig. 1 Score comparison of municipalities within Kathmandu Valley

The content analysis of municipalities' websites was based on the presence or partially presence or absence of information and services on the website. Scores of each stage of maturity were added to obtain total score presented in Fig. 1 Dakshinkali Municipality has secured the top position with score of 54 (60%) while Suryabinayak Municipality is at the bottom with score of only 24 (26.66%). Few scores under Transition stage and Integrated stage means that municipalities have not provided online services financial transaction services to their citizen as well as website was standalone and no integration have been done with online services from other governmental organization. All websites evaluation scores were relatively high in the Information stage, this shows that municipalities provide information about services and activities through its websites. Table 2 data show that there is a great deal of variability in scores of different municipalities within Kathmandu Valley. The majority of municipalities provide relatively limited online facilities for their citizens to interact with them.

4.2 Challenges for successful implementation e-Government initiatives

There are several challenges and barriers that can delay progress of e-Government implementation. The variety and complexity of e-Government initiatives implies the existence of a wide range of challenges and barriers to its implementation and management. This section will briefly introduce the most important and common challenges for implementing e-Government in local government. The challenges grouped based on their similarities resulted in five different aspects such as Financial, Human, Technical, Organizational, and Regulator & others.

4.2.1 Financial Challenge

The lack of financial support for capital investment in new Information and Communication Technology is one of the major challenges in implementing e-based services in municipalities. The funding for e-Government programs is also the most serious and significant barrier for the implementation of e-Government

due to lack of capital; high operation cost for e-Government implementation, the high cost of implementation and maintenance of the computer systems and networking setup, hardware, software, training and education, are seen as major Challenges for municipalities to initiate e-based services. Budget constraint for ICT investment is a major challenge in the implementation of the e-service in municipalities. Fig. 2 shows that 21% of the respondent strongly agreed with mean value 3.96on budget constraint for ICT.

4.2.2 Human Challenges

One of the main factors affecting the roll out of e-Government in a country is the level of human capacity. The issue of human capacity is twofold – one refers to the skills and capacities within the public administration needed to implement e-Government projects, whereas second refers to the boarder community – citizens that need to possess IT literacy to fully benefit from e-Government applications (Kharel, 2012). Majority of respondents believe that lack of leadership support is the major human challenge for initiative e-based services in municipalities. 52% respondents strongly agree and 30% agree with mean value of 4.25 on lack of leadership support as the barriers of implementing e-based services in municipalities as shows in Fig. 3. The lack of ICT skills is another challenge to an e-Government implementation, especially in developing countries.

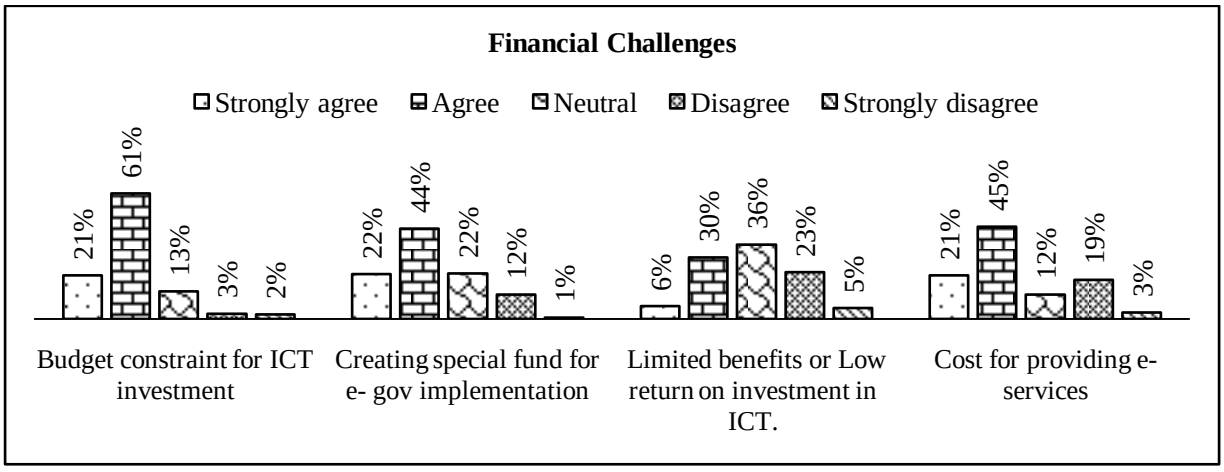

Fig. 2 Bar graph of Financial Challenges

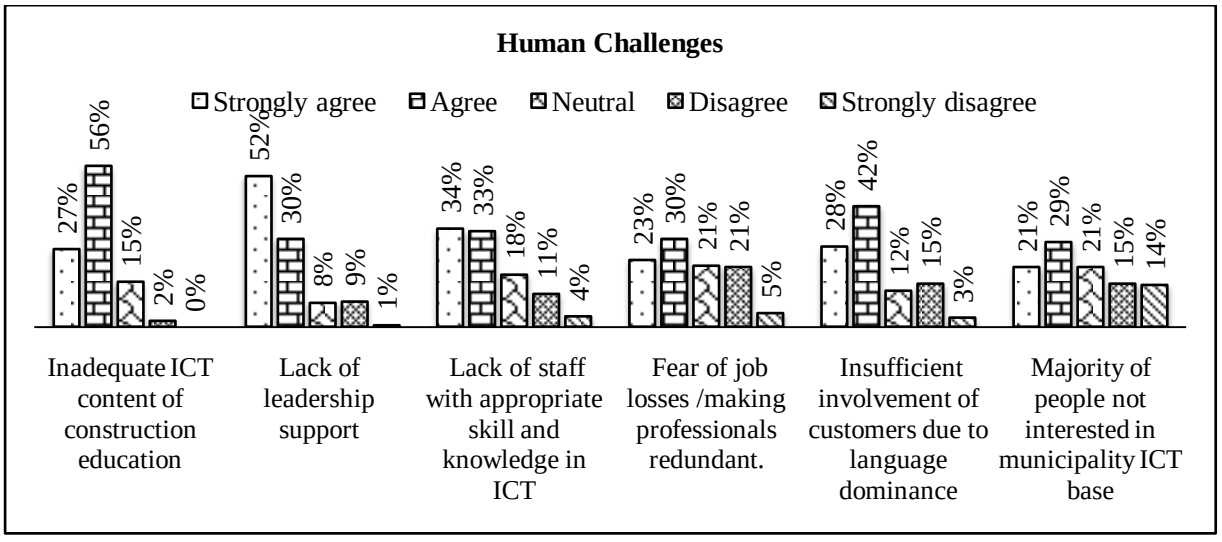

Fig. 3 Bar graph of Human Challenges

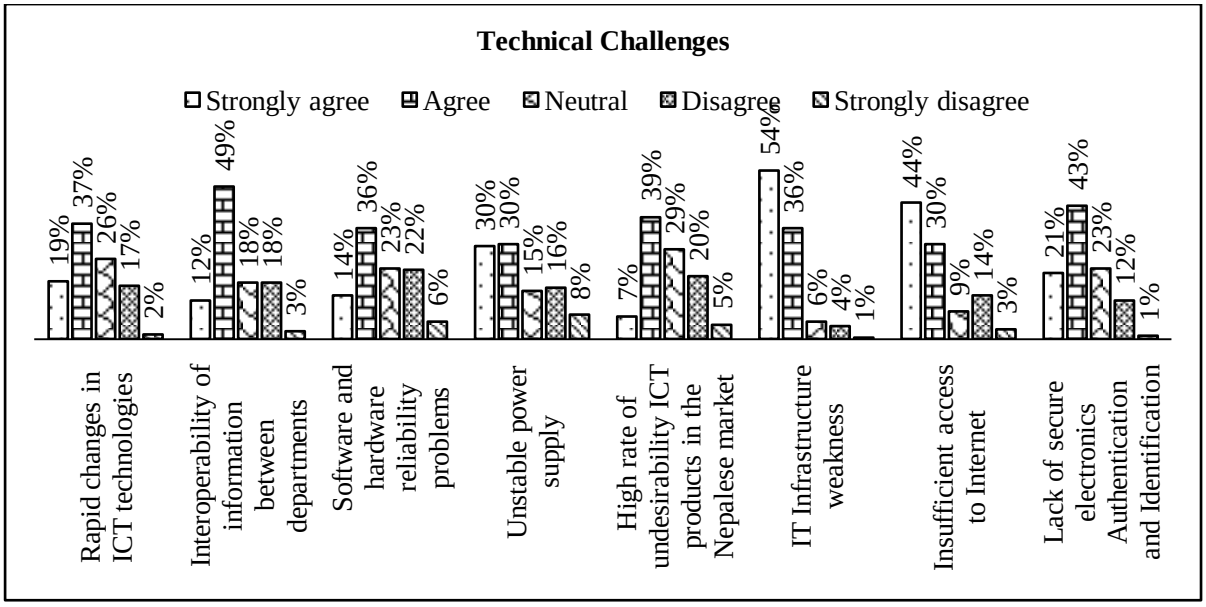

Fig. 4 Bar graph of Technical Challenges

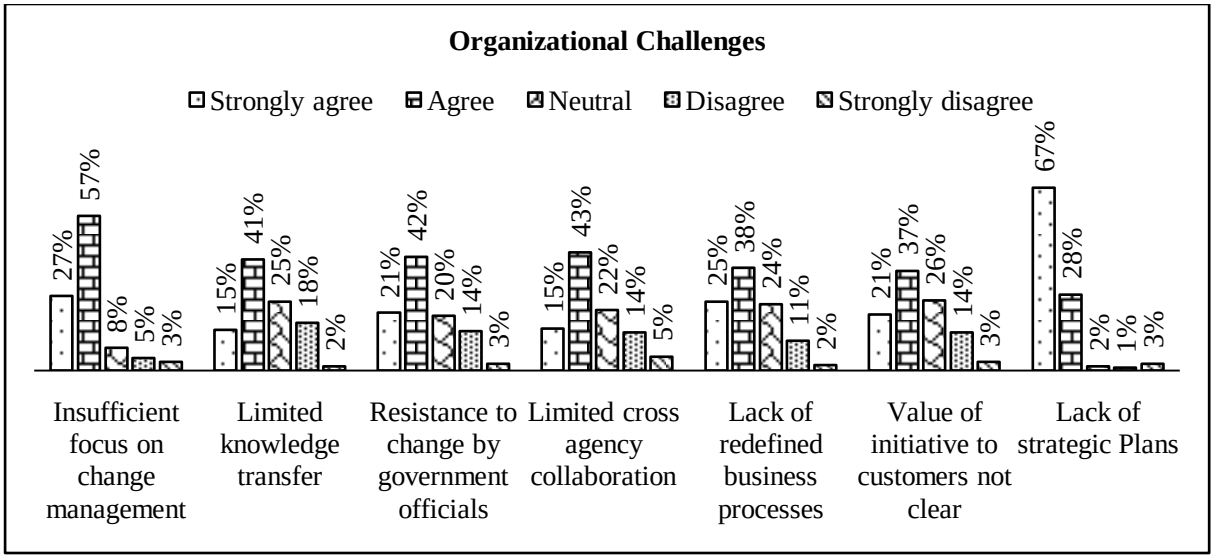

Fig. 5 Bar graph of Organizational Challenges

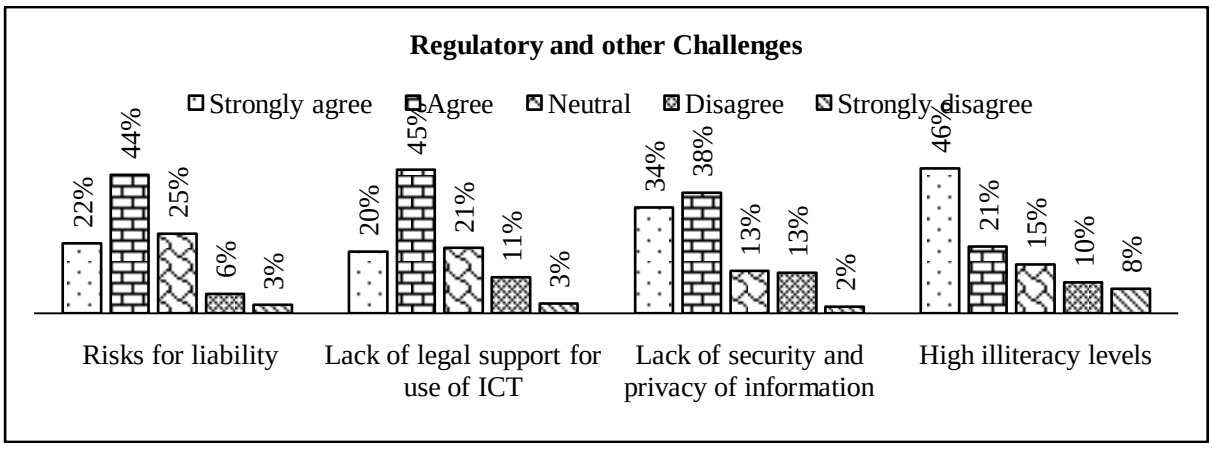

Fig. 6 Bar graph of Regulatory and Other Challenges

4.2.3 Technical Challenges

ICT infrastructure is recognized to be one of the major challenges for initiating e-Government services. ICT infrastructure is driving force for organizations to implement e-services. The infrastructure for the municipality is the physical part of the e-model for municipalities. The equipment and connectivity whether wired or wireless are the backbone of information exchange both within municipality and between the other agencies. Lack of technical infrastructure is a major bottleneck for countries aiming to implement and maintain e-Government(Kharel, 2012).Data collected by questionnaire survey are presented in Fig. 4 which shows that54% of respondents strongly agree and 36% agree with mean value of 4.39 on weak ICT infrastructure as challenge for initiation of ICT based services.

4.2.4 Organizational Challenges

To consume fruitful results of e-Government it is recommended that a collaborating agency may be formed to bring the organization closer. Collaboration and cooperation at local, regional and national levels, as well as between public and private organizations, are important elements in the e-Government development process. Lack of strategic plans is one of most significant organizational challenges for implementing e-based service initiatives in municipalities. Similarly handling change management properly is also another major challenge for implementing e-based services. 67% of respondent in survey strongly agree and 28% agree with mean value of 4.56 on lack of strategic plan as major challenge in e-Government. Insufficient focus on change management with mean value of 4.01 is another organizational challenge for implementing e-based services as shown in Fig. 5.

4.2.5 Regulatory and Other Challenges

Many studies have found that security is one of the most significant challenges for implementing e-Government initiatives. Security means protection of all information and systems against any disclosure to unauthorized access, or unauthorized modifications or devastation. Thus, it refers to protection of the information systems, assets and the control of access to the information itself.

ICT literacy is mandatory to empower people in using online services provided by government. Countries like Nepal have low literacy rate in general and information technology in particular. From Fig.6, it's seen that illiteracy is another major challenge on implementing e-based services. 34% strongly agree and 38% agree with mean value of 3.88 onlack of security and privacy of information as one of challenge for e-Government.

5. Reliability and Validity

Statistical Reliability is the most often used to evaluate internal consistency. Internal consistency typically measures a construct through a variety of items within the same instrumentation. Cronbach's α assumes that all items being considered for each construct are identically scored, as, for example, through Likert scales (Boudreau, 2014). Cronbach's Alpha was used to test for reliability of the questionnaire. To test the internal consistency Cronbach's alpha test using the reliability command in SPSS. To interpret the output, acceptable levels of Cronbach Alpha for attitude scales is 0.7 and above [Burns, 2008]. The rules of thumb provide the following rating: "_< .6 - Poor, .6 to <.7 - Moderate, .7 to <.8 - Good, .8 to <.9- Very good, _>.9 - Excellent".

Calculated Cronbach's alpha was 0.859 for response of service seeker on challenges to implement e-based services, which is Very good level of reliability for research. The results of the questionnaire can thus be trusted upon.

Mann-Whitney test (non-parametric test) has been conducted to test the hypothesis. Null hypothesis has been accepted. The results of this analysis as follows: 'The Mann-Whitney U-test showed that there was no significant differences on accepting challenges for e-Government services initiatives in Municipalities between male and female service seeker.

6. Conclusion

The findings and implications of this study reveal

Nepal is still lagging behind in utilizing information and communication technologies for delivering Local Government services online. The study has analyzed the effectiveness of e-based services provided by Municipalities within Kathmandu Valley from Citizens points of view. The current stages of 18 municipalities within Kathmandu Valley was investigated by using four stage e-Government maturity model (information, interaction, transaction, integration). From those analysis it is found that all municipalities have provided information stage services only. Few interactive services are being provided by some municipalities, whereas the capability for online transactions are not present in any local government. Seamless internal and external integration of online government services are not observed in any municipalities. Challenges for implementing successful e-based services initiatives are investigated in five different aspects like a Financial Challenges, Human Challenges, Technical Challenges, Organizational Challenges and Regulatory & other Challenges. Questionnaire survey method were used to collect information regarding effectiveness of presently provided services and challenges to implement e-based services effectively in local government. Lack of strategic plans, change management, budget constraint, weak infrastructure, literacy, lack of construction knowledge, lacks of leadership supports, security and privacy are found to be the most problematic challenges regarding implementation of e-service in municipalities.

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