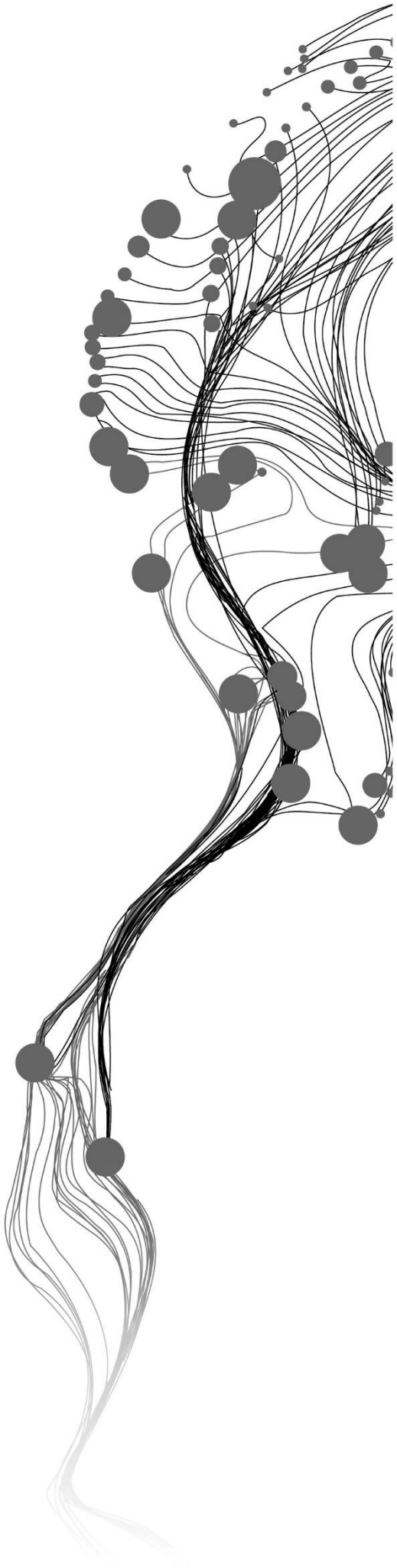
Transition to an electronic land registration system: rural landowner and organisational perspective on e-Sakor in Bhutan

KARMA TSHOMO
Enschede, The Netherlands, February, 2017

SUPERVISORS:
Dr. C. Richter
Ir. E.M.C. Groenendijk



Transition to an electronic land registration system: rural landowner and organisational perspective on e-Sakor in Bhutan

KARMA TSHOMO
Enschede, The Netherlands, February, 2017

Thesis submitted to the Faculty of Geo-Information Science and Earth Observation of the University of Twente in partial fulfilment of the requirements for the degree of Master of Science in Geo-information Science and Earth Observation.
Specialization: Land Administration

SUPERVISORS:
Dr. C. Richter
Ir. E.M.C. Groenendijk

THESIS ASSESSMENT BOARD:
Prof.mr.dr. J.A. Zevenbergen (Chair)
Dr. F. Masum (External Examiner, Land Management Consultant)
Dr. C. Richter (First supervisor)
Ir. E.M.C. Groenendijk (Second supervisor)

ABSTRACT

In the twentieth century many administrative and service systems had gone through computerization process and so did the land registration services in Bhutan. Expecting the manifold gain in speed of land transactions, the electronic land registration system 'e-Sakor' was introduced. The new electronic system is expected to achieve transparency and accountability exhibiting good governance. Good governance is considered a pillar for Gross National Happiness and an important condition in which all Bhutanese citizens thrive. The e-Sakor was established to solve various underlying problems of the traditional land registration process and to ease all land transactions without having to travel to National Land Commission Secretariat (NLCS) headquarter from different parts of the country. However, the landowners still register their land travelling all the way to headquarter to ensure their land transactions have reached and are on process.

Starting with the observation that landowners still travel to headquarters despite e-Sakor implementation, this study aims to examine why the landowners do not fully benefit from the process of implementing an e-land registration system from the point of view of the end-user and main beneficiary of this e-government initiative, namely the landowners in comparison with the perspective of NLCS staff involved in implementing e-Sakor. A field study was conducted in 'Trongsa' district in Bhutan. To build a theoretical background, scientific literature and e-Sakor related publications were reviewed. The data was analysed using the five factors influencing e-government implementation which were informed by the literature review. Semi-structured interview using a question guide was conducted to deeply understand the perspectives of implementers and potential beneficiaries. Participant-observation was one of the methods to observe the process of land registration and also the rural landowners who visited the office in all levels. The findings from the semi-structured interview and participant observation are structured into the factors identified from the literature review and compared to one another using a framework approach from the thematic analysis. This benefitted in identifying i) financial ii) technical iii) organisational and iv) social factors as the dominant factors in this study. The four factors intervene with one another making it possible to identify the main concerns on the basis of effects experienced by both the organisation and rural landowners. The main concerns are i) Local level capacities ii) the Internet and power connection iii) Long-term dedicated staffs iv) Trust from the rural landowners on the registration process and v) Geographic location and developmental activities.

The study has shown that all the themes identified on the rural landowner's side relate to safety and trust that their documents are being handled well and that they don't lose their land so forth. The big concern from the perspective of the intra-organisation is to save money underlying to make the system run with as little resources as possible and technology promises to increase efficiency in this respect. The study has shown that the maximum number of landowners who visits headquarter to follow up on their land transactions are usually 'sales' transaction. The results revealed that geographic location and developmental aspect plays a vital role in the land market. The districts that are near to the capital city with high value of land and districts with development activities receives high land transactions compared to the districts which are far from the capital city and without any development activities. In the final instance, the basic physical infrastructure of the internet and electricity are more influential factors in e-Sakor implementation.

Keywords: E-government, e-Sakor, NLCS, rural landowners, intra-organisation, perspectives, local, regional, headquarter, Bhutan

ACKNOWLEDGEMENTS

A grateful heart is a happy heart. I would like to express my sincerest gratitude to my supervisors Dr. Christine Richter and Ir. Liza Groenendijk for their continuous guidance and support throughout the study period. Equally thankful to Prof. Dr. J.A. Zevenbergen for his valuable comments during the proposal defence '*wear the cap of a researcher*' which helped me in positively carrying out my fieldwork and help refine the quality of my research. I am grateful to my all supervisors who has always motivated me to learn more.

My sincere gratitude for the encouraging and supportive response I have always received from Dasho Pema Chewang- Secretary and Mr. Tenzin Namgay, the Director of National Land Commission Secretariat of Bhutan.

My heartiest gratitude to Mr. Ugyen Tobgay, the Land Record Officer of Trongsa district, Bhutan for arranging the necessary for my field visit and helping me throughout the data collection. And also grateful to my sister-in-law and my beautiful niece for their welcoming stay in Trongsa.

I would like to thank my colleagues of NLCS for their support in data collection. Equally, thankful to all the rural landowners and the NLCS staffs who has happily shared their valuable time in the course of interviewing during my field visit.

I would like to thank my loved ones, my Mother for her love, blessings. Always grateful to my sisters and brother and in-laws for their endless love and being supportive at all time. Thankful to all my friends that I have made here- '*Thank you for making me feel home away from home*.'

This whole journey would not be possible without the love of my life, my husband Tenzy for always being patient, supportive and encouraging during all my lows- '*you are my best friend for life*.'

Finally, I would like to acknowledge all the people who have in some way contributed to my study.

Karma Tshomo
February 13, 2017
Enschede, The Netherlands

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

LIST OF ACRONYMS

ADB	Asian Development Bank
BMT	Bhutan Majestic Travel
BPC	Bhutan Power Corporation
DANIDA	Danish International Development Agency
FAO	Food and Agriculture Organisation
GNH	Gross National Happiness
GLTN	Global Land Tool Network
HMLR	Her Majesty's Land Registry
ICIMOD	International Centre for Integrated Mountain Development
ICT	Information and Communication Technology
ID card	Identity card
ITC	Faculty of Geo-information Science and Earth Observation, University of Twente
IT	Information Technology
JICA	Japan International Cooperation Agency
LRO	Land Record Officer
MOIC	Ministry of Information and Communication
NCRM	National Centre for Research Methods
NCRP	National Cadastral Resurvey Program
NLCS	National Land Commission Secretariat
NOC	No Objection Certificate
OECD	Organisation for Economic Co-operation and Development
RCSC	Royal Civil Service Commission
RGOB	Royal Government of Bhutan
UNDP	United Nations Development Programme
UN-HABITAT	United Nations Human Settlements Programme

GLOSSARY

Dungkhag	Sub-District
Dzongkhag	Regional Level (District)
E-Sakor	E - electronic, Sa - Land and Kor- about
Gewog	Local level (Block)
Lagthram	Land Title Certificate
Mathram chem	Meaning Red Book, a centrally maintained land record
Ngultrum	Bhutanese currency
Sathram	Land Title for record keeping
Thram	Land title record/data
Thromde	Urban area/city
Lokdrel	Electronic
Gup	Village representative
Geydrung	Office assistant/ clerk

1. INTRODUCTION

1.1. Background and justification

In recent years, the concept of electronic-governance has thrived rapidly with the advancement of Information and Communication Technology (ICT). 'Electronic-government', a strategic choice opted everywhere in the world for a consistent delivery of service in the government sectors (Gottschalk & Solli-Sæther, 2009). According to Alshehri & Drew (2010), "the purpose of e-government is not only the conversion of traditional information into bits and bytes and making it reachable via the internet websites or giving government officials computers or automating old practices to an electronic platform. But it also calls for rethinking ways the government functions are carried out today in order to improve processes and integration of e-functions and service" (p.79).

"To go in line with new technology and to adapt changing trends, the majority of countries all around the world are on the way to e-Governance. In this context, countries have introduced their own e-Government Master plans aiming to step forward in the direction of e-Governance. E-Government Master plans are initiatives of the government towards the inclusion of ICT in government sectors to achieve e-Governance goals," according to Gurung, Dangol, & Bhatta's (2016, p.3) case study on e-land administration service. In Mongolia, the Master plan of 2005 emphasises in enhancing the quality of the people's life whereby developing information technology infrastructure so to make the government activities and services online and accessible to every citizen. For this, kiosk machines, smart post, e-visa, e-procurement were introduced (Sambuu, Tudevdagva, & Erdene, 2008). Similarly, according to the master plan of 2006, the Government of Nepal envisions to focus on National ID, Land records information management system, smart driving license, broadband internet services to the district level, Human resource development in IT and online application system for public service commission (Pariyar, 2007).
In this context, the Royal Government of Bhutan (RGoB) developed Bhutan e-Government Master Plan in 2014 to drive social and economic development through ICT. The plan gives the complete vision of the ICT initiatives and their strategies. The plan also identified the requirement of institutionalising e-Governance structure, including setting up of e-Governance Program Management Office to ensure effective implementation (MOIC, 2014).

In order to speed up the land transaction process, National Land Commission Secretariat (NLCS) of Bhutan initiated a project, "Computerization of Land Registration system" in 1992 under the Swede survey consultancy, which was funded by Swedish Aid Agency and the UNDP. Under this project, a database was developed as a replacement for manually handling the data (Arbind Man Tuladhar, 2003).
The transition from a paper-based registration system to one that is entirely electronic is a very major one and it will change fundamentally the way in which the process of transferring land and recording transactions is conducted (HMLR, 2001). The people of Bhutan are currently experiencing a revolution in the land service delivery from paper-based to electronic registration of land. The new system can help landowners[1] to carry out the land transaction without much paperwork with the help of e-Sakor (E-Sakor

[1] This research will use the term landowner over the landholder. In the Land Act of Bhutan, 2007 the right to ownership of land is referred as 'landowner' and the term is used more frequently than 'landholder'. A landowner can be anyone who has the right to use the land.

translated as 'Lokdrel Sakor' Lokdrel meaning electronic, Sa= Land and kor=About) is an online comprehensive land information system comprising of the map, Thram (land detail) and related information which was launched in 2011. The electronic system was developed by NLCS in close collaboration with the Swede survey of Sweden. The system is designed to support land transactions via a simple web browser over the public Internet. It is an internal handling system to be used by the NLCS staff and gives access to Thram, Transaction, Census and geodata databases running in the NLCS Datacentre at the headquarter in Thimphu.

The electronic-Sakor is expected to improve efficiency and quality of the services by creating access to land information from grass root level like local, regional and headquarter. The system is designed to support gradual decentralisation of decision making, to provide a transparent process to the land owners and to deliver faster public service (NLCS, 2015). The introduction of e-Sakor is to encourage landowners to take the possible advantages of it rather than travelling for days to reach headquarter just to check on their land transaction status or land details. With the help of e-Sakor, you can track the status of your land transaction and your land details from your home, regional and local office. This is one of the main advantages e-Sakor may offer to the landowners, especially rural landowners in areas that are remote from central offices of the NLCS. After its launch e-Sakor have accomplished in solving many problems. In the case of security of the land detail records and land documents, since it is by default saved in the server, the probabilities of losing the documents and details of land to accident and disaster have been decreased. The officials can track their work and the history of the land transaction can be traced anytime. This has helped to avoid any kind of manipulations of land details. Ever since the launch of e-Sakor, the land transaction documents have reached headquarter safely since it is uploaded online in the e-Sakor system from the regional office. In the past, the land transaction documents were verified and endorsed by the regional office and were sent to headquarter for further verification and approval by means of postal service and in this process, many documents went missing. Eventually, it was the landowners who have suffered from it. This is, therefore, a second improvement e-Sakor offers to landowners, namely the safe-keeping of their land records and correctness in detail.

However, Al-shboul, Rababah, Al-shboul, & Ghnemat (2014), noted that e-government is always associated with risks and several critical success factors. The success or failure of e-Government implementation depends on various factors. This is especially apparent in developing countries where there are many factors beyond the control of the project, most notably lack of bureaucratic inertia that prevents wholesale change from a new e-government system (Peterson, 1998). According to K.Boersma, A.Meijer (2009), i) improper use of new technology ii) systems lacking the re-design in accordance with the new technology iii) political and legal limitations and iv) people's attitude toward the new technology are the four factors influencing the e-government implementation.

Because e-Sakor experiences problems in being accepted and used by rural landowners, despite the above-mentioned advantages the new system offers. It is the latter factor, which this study seeks to address. Furthermore, apart from registering the land, the functions like tracking your land transaction status and checking your land details are not available till date although according to the World Bank (2016), the ranking for property registration has improved. National Land Commission Secretariat of Bhutan ranked 51 from 56 within a year (2015-2016). These indicators for ranking are based on the number of procedures taken, the time duration taken for the completion of the transaction and the cost for registering the property. Given the advantages, e-Sakor offers to rural landowners and the good evaluation

of NLCS's work by the World Bank begs the question, why rural landowners still travel to headquarter and use the paper-based approach to land registration.

Therefore, this study seeks to examine the implementation of e-Sakor from the perspective of the organisation and the rural landowners on the implementation of e-Sakor. The focus of this study rests on rural landowners because the majority of land in Bhutan are forested and rural. Also, the maximum number of landowners visiting headquarter are from the rural areas. A better understanding of rural landowners' perspective can help to identify potential deficiencies after the launch of the e-Sakor land registration system and therefore contribute to the efficient service delivery for the landowners. This study will be very helpful also to the National Land Commission Secretariat, which is main implementing agency since there is no literature on the new e-land registration system of Bhutan making it an interesting study area where any findings will be useful for NLCS in providing better service to the landowners.

1.2. Research problem

Though e-Sakor was established to solve various underlying problems of the traditional land registration process and to ease all land transactions without having to travel to headquarter from different parts of the country, the rural landowners are not making use of the system as anticipated, as explained in the previous section. With the number of landowners visiting headquarter remaining almost the same as in the past. The situation conveys that there is a discrepancy between the current services offered and landowners' expectations and knowledge thereof. The National Land Commission Secretariat have not investigated concerning this situation nor the e-Sakor system has undergone an evaluation audit or revision after its first launch in 2011 and the deficiencies that the system hold has never been fixed. The deficiencies in the system need to be resolved and this should help in delivering the service efficiently.
This study aims to contribute to the literature on e-government development in the domain of land administration in two main ways. First, it contributes empirically by exploring the transition of a land registration system from analogue to digital form in the case of Bhutan's e-Sakor. Second, it explores specifically the point of view of the so-called end-user and main beneficiary of this e-government initiative, namely the landowners in comparison with the perspective of NLCS staff involved in implementing e-Sakor.

1.3. Research Objective

This research aims to explore why rural landowners of Bhutan travel all the way to the Headquarter while e-Sakor is available to serve them at the local or regional levels. For this, I will study the implementation of e-government from the perspective of the intra-organisation and the rural landowners' perspective in Bhutan. This will help us in identifying the concerns in e-government implementation affecting both the organisation and rural landowners. The main objective can be broken down into the following sub-objectives:

1. To describe the development of e-Sakor to date
2. To identify factors influencing in the implementation of e-Sakor
3. To identify main areas of focus for further implementation of e-Sakor based on above analysis

1.4. Research Questions

Below are specific research questions for each sub-objective:

1. To describe the development of e-Sakor to date
    a. How is e-Sakor currently organised (actors involved, system, and background)?
    b. What are the aims of e-Sakor and the achievements?

2. To identify factors influencing in the implementation of e-Sakor
    a. What are the factors influencing e-Sakor implementation from and intra-organisational perspective?
    b. What are the landowners' experiences and practices in registering and transferring land with the National Land Commission Secretariat of Bhutan, which need to be accounted for further e-Sakor implementation?

3. To identify main areas of focus for further implementation of e-Sakor based on above analysis
    a. What are the most important issues to solve inside of the organisation on one hand, and on the side of landowners, on the other hand?
    b. What are the main concerns of both the organisation and the landowners?

1.5. Hypothesis

This research is based on the hypothesis that:
a) The perspective of rural landowners on the implementation and use of an e-government system, specifically e-Sakor, is different from the intra-organisational perspective and
b) Prioritising the factors influencing e-government implementation, specifically e-Sakor, based on the intra-organisation and the rural landowners' perception can contribute to the successful implementation of e-government

1.6. Conceptual framework

The conceptual framework shows the transition of land registration system from paper-based to digital and how the rural landowners' practices of land registration. The gap here is the rural landowners who travel to headquarter to check on their land transaction when there is the 'e-Sakor' at a local and regional level which is there to serve them. We can understand the gap by analysing the challenges of implementing e-government from the perception of the rural landowners in comparison to the perception of the intra-organisation and the literature. The analysis is carried on through the lens of (i) technical (ii) organisational (iii) financial (iv) social and (v) political factors as identified from the literature in section 2.1.

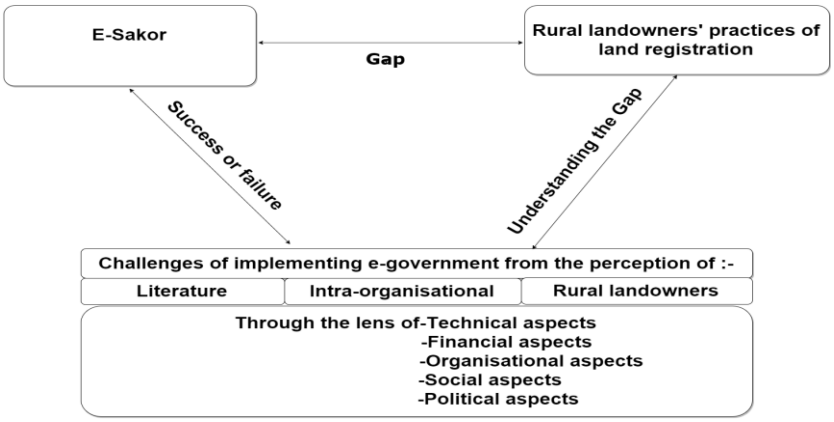


Figure 1: Conceptual framework

Therefore, the research will understand e-government implementation from the perspective of implementers (NLCS) and potential beneficiaries (rural landowners) in the case of e-Sakor. This is mainly to identify the area of focus during further implementation in order to provide better service to the rural landowners.

1.7. Thesis structure

The final thesis report will be presented in seven chapters. The content of the chapter is briefly discussed below.

Chapter 1: Introduction

This chapter offers an overall view of the research. It explains the general idea about the research topic and its related problem statement. To further understand this study, it will go in more depth with the background about the case study. Further, this chapter contains the main objective of the research, its sub-objectives, conceptual framework, hypothesis of the research and finally a thesis structure for the research.

Chapter 2: Literature review

This chapter gives the relevant definitions and understanding of electronic government and the factors influencing the implementation of e-government according to the literature. The five factors which are i) social ii) organisational iii) financial iv) technical and v) political factors will be informed from the framework adopted from the literature. Further, it will discuss their importance and their significance towards the implementation.

Chapter 3: Case description

This chapter explains briefly on the background of the land registration process in Bhutan and how it is structured alongside with the introduction of e-Sakor.

Chapter 4: Methodology and data collection

This chapter gives the ideas of methodologies and materials adopted for data collection and analysis of both primary and secondary data. It explains how answers were derived from each research objectives- the research techniques. The research design is included in this chapter along with maps showing the study area for the readers to have a clear idea on where the interviews and observations were held. The summary of the methodology text is presented in the flowchart which briefly describes the research implementation phase.

Chapter 5: Data analysis and result

This chapter consists of results derived from the data analysis mainly based on the perception of the rural landowners and the intra-organisation on an e-government system 'e-Sakor'. Further, a framework approach to thematic analysis for the answers derived from both the rural landowners and the intra-organisation which helped identify the five main concerns affecting both which the NLCS may consider during further implementation. The data analysis and derivative of results are based on the primary and secondary data collected through observation of the rural landowners and NLCS staffs, interview of the rural landowners and NLCS staffs and on-line related documents.

Chapter 6: Discussion

This chapter includes the discussion on the identified five main concerns which were informed from the chapter of data analysis and result.

Chapter 7: Conclusion and recommendation

This chapter includes the conclusion from the findings of the research and it briefly discusses whether the results have met the objectives. Finally, to end with a recommendation for further study considering the results alongside with recommendations for NLCS based on the results derived.

2. LITERATURE REVIEW

2.1. Introduction

The success of electronic government does not necessarily mean the operation of the system without any deficiencies but the service provider and users' acceptance of the e-services over the traditional services. The section 2.2 will explain the significance and challenges of e-government implementation according to various authors. Further, this benefits in identifying the factors influencing the e-government implementation according to the literature which will be used later in the data analysis and result section to contextualise the findings accordingly.

2.2. Challenges in implementing e-government applications around the world

Many countries have realised the importance of electronic government implementation and the enormous potentials it has to offer and this is why according to Al-Kaabi (2010), "the concept of e-Government has begun to spread among countries" (p.659). E-government does not have one definite definition- it has been defined differently by experts according to its drive of implementation. For instance, as defined by the World Bank (2016), "e-government" is the governmental services of information delivered to the citizens through the usage of the technology. These technologies are understood to be beneficial to increase efficiency and reduce corruption by depicting transparency. Similarly, Ronaghan (2002), defined e-government as "utilising the internet and the world-wide-web for delivering government information and services to citizens" (p.9) while OECD (2003), defines e-government as "the use of information and communication technologies, and particularly the Internet, as a tool to achieve better government" (p.13).

To go in line with the study, here "e-government" implicit as the web-based system used for transacting land and furthermore delivering land information through a unique security credential to the transferor and transferee to allow them to keep track of their land transaction status and check their land details without needing to visit the office personally. E-government is not only about potentials of the web portal, it entails more. In terms of e-government implementation in the land sector, it has especially facilitated in digitalization of maps, integration of databases and inclusion of digital and automatized governmental workflows in order to provide reliable services to the landowners. Most governments have a different perspective on e-government in accordance to their objective for implementation. Likewise many e-government initiatives in developing countries are categorised in accordance with the level of success attained which is very limited. There has always been a case of ineffectiveness (R Heeks, 2002).

In 2003, Richard Heeks noted that "to succeed in e-government and to properly identify design-reality gaps – one has to understand current reality. Yet this may be difficult to achieve" (p.9).
According to Nkohkwo & Islam (2013), the factors that influence in the implementation of e-government can be categorised into i) infrastructural ii) human iii) financial iv) political v) social-economic vi) organisational factor. The most dominating in the study is found as an infrastructural factor because of the number of citations by various authors, especially in Sub-Saharan Africa.

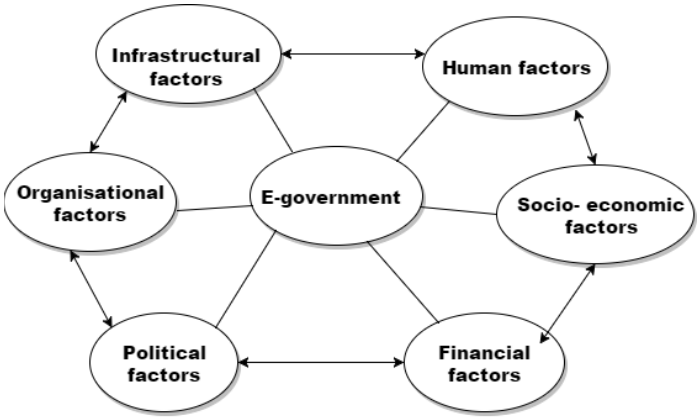


Figure 2: Thematic challenges on implementing e-government (Nkohkwo & Islam, 2013)

However, this study will look into the i) Technical factor (ii) financial factor (iii) organisational factor (iv) social factor and (v) political factor. The infrastructural factor is covered under the technical factor. Similarly, the human and socio-economic factors are discussed under social factor. This is mainly to avoid the repetition of themes identified.

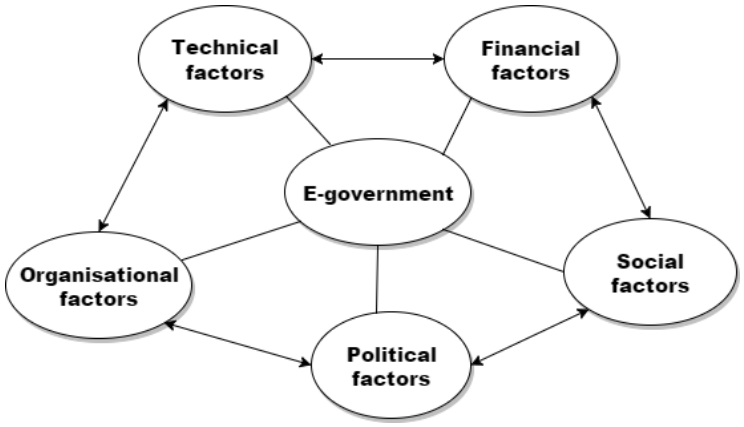


Figure 3: Factors influencing e-government implementation

Under the **technical factors**, the complexity of the system contributes to the rate of either success or failure in implementing e-government. So higher the complexity of the system higher the risk of project failure, likewise for the success the lower the complexity of the system, there are higher chances of project success (Melin & Axelsson, 2009). In fact, "a lot of money is invested by the organisation to develop a meaningful information system that can serve their purpose. But the status of the end user and their information required present a set of unique and different problems that need to be overcome" (Orlikowski & Robey, 1991, p.36).

The level of complexity in the new system, to achieve a successful implementation, the design of the system should be user-friendly and it is only possible if there is involvement of end users during the design phase (Baguma & Lubega, 2013). Issues such as protecting the personal details, implementing safety controls, maintaining records and undisrupted technical infrastructure and continuity of citizens as the centre of attention are the future challenges which should be monitored carefully. If not they are likely to present significant challenges to the development of e-government. (Jaeger & Thompson, 2003). Similarly, Signore, Chesi, & Pallotti (2005), indicated the importance of technical consideration for the information that has been gathered by the government which are politically sensitive and that the installation of

security mechanism may be appropriate. When we say 'security', we mean "protection of data against accidental or intentional disclosure to unauthorized persons, or unauthorized modifications or destruction" (Udo, 2001, p.165).

In the research led by Oudshoorn & Pinch (2003), the authors labelled the user and technology relations as two sides of the same problem. According to Dada (2006), for e-government to succeed in a developing country, it is first required to place the requisite technological infrastructure ready to work, in order for all citizens to access which includes dependable electricity, access to internet and telecommunications. The successful e-government model from a developed country cannot be adopted in a developing country without proper planning -predominantly due to the lack of infrastructures. Similarly, Organização das Nações unidas (2002), confirms that in the least developing countries the lack of ICT infrastructure stands out among the major challenges faced during implementation. This challenge may possibly deprive the less privileged people for accessing the modern technologies.

For the **financial factors**, financial constraints, the cost of internet and cost of e-government services pose a challenge to the successful implementation of e-government initiatives (Nkohkwo & Islam, 2013). As the implementation and maintenance of the computer systems require a high budget, many developing countries who started with funding e-government programs, find themselves in a tight spot. Even though the plan for effective and accessible e-government are worthy, due to the financial constraint the government entity holds back. (Alshehri & Drew, 2010). This point is further emphasised by Ebrahim & Irani (2005), since countries where the government organisations depend upon the central government for financial resources- they are seen as the major barrier for any e-government investments due to the insufficient financial resources allocated by the central government which seems hard sustain the e-government program.

Stefanie & Claudio (2011), emphasises on the "concerns about the costs of implementing and developing e-government, together with inappropriate cost/benefit analysis approaches, can constrain or block the flow of investment at the levels necessary to support future e-government innovation" (p.14). However, Organização das Nações unidas (2002), fears that due to the lack of financial resources and deficiencies in the e-government planning may fail to benefit in what it was envisioned for. Such as making it a citizen-centric for delivering services in accordance with the needs of the people- mainly bringing out transparency, efficiency, accountability at an affordable cost. At the same time, the potential of e-government can only be recognized if digital data and internet security are taken care of. This is linked with additional costs which may be a factor why a majority of governments still do not offer online services like utility payments, applying for licences or making forms available for download.

Andersen (2006), discusses that in the **organisational factors**, the employees' readiness for e-government plays a vital role in the successful implementation of e-government. The employees' ability to adapt to changed situations and needs should be prioritised before the implementation of e-government. The resistance to change to electronic ways (Alshehri & Drew, 2010) where Li (2003), stated that evolution of e-government has effect in the workplace where there is a transformation from analogue methods to electronic. Similarly making the staffs' adapt to a completely different form of providing services is a greater challenge.

In Bangladesh, a study on the perception of the government officials on an e-government system was conducted and found out that although more than 60 percent of respondents were unaware about the e-

government initiatives, they expressed their support for any initiative provided for the citizen (Hossan, 2006). The employees who are used to working in traditional way perceive e-government implementation at their workplace as a threat to their job or position. However, it is essential for the employees to be assured that the change won't risk their job, in fact, they should realise the positive possible changes it can bring after implementation. Moreover, the staffs could be reassigned with their new roles according to the skills they have developed through additional training (Working Group, 2002). Similarly, Tobergte & Curtis (2013), also acknowledges the need for additional training apart from training to operate the system. For this, educating the staffs and motivating them to adapt to the change has become essential.

Also, there is need of development strategy for e-government. Such strategy is intended to think through the likely changes that e-government could bring along including new roles and responsibilities to the staffs, internal transfer of staffs and reassuring the staffs about the ongoing change in the agency. Also, the strategy should prioritise the cost issue with it (Organização das Nações unidas, 2002). R Heeks (2002a), points out that often "there is failure in meeting the aims and objectives of initially set goals". This is often because some projects which have not involved the end users during design and implementation phase have mostly seen failure (Baguma & Lubega, 2013). Where Ciborra & Navarra (2003), thinks that among the greatest challenges reported were to define roles and track responsibilities of the various actors involved. Involvement of Stakeholders can represent the government and communicate to areas and people where the government initiatives have not reached.

Regarding **social factors**, trust plays a vital part for influencing the implementation of e-government. The citizen's consideration to make use of the online service is merely due to the trust in the environment and agency involved (Tassabehji, Elliman, & Mellor, 2007). Trust can generally mean to have faith in someone's capability. Trustor usually is the benefiter of the service. The unpleasant past experience particularly corruption, autocracy, political instability has made the citizens to distrust their government (J. Nugroho, 2014).

In order to gain trust from the citizens, the government should deeply understand their requirements before the promotion of e-government. This can only be possible with the inclusion of citizens in the development process which can help ensure citizens opening up for electronic services provided by the government -hence building a trust relationship. Kaur (2006), also expresses the importance of enhancing citizen involvement in any governmental initiatives and government's responsibility in increasing awareness so to clear the citizens about the objectives intended to achieve from such initiative.

Another social factor relates to digital divide issues prevalent in many developing countries. Although there are growing number of people making use of the services provided online, the digital divide barrier comes to existence when the services provided online are not beneficial to the people due to their inability to access the internet. While there are many other channels to provide services them, the inability to deliver online services to all citizens creates a gap in the e-government projects (OECD, 2003a). However, the digital divide can be considered also as a social factor, because of its lack of ability to utilise technology which may be caused by gaps from the internet users to efficiently take advantage of the medium (Organização das Nações unidas, 2002).

Stefanie & Claudio (2011) states that the gaps due to the inequalities may limit the acceptance of e-government programs. Social issues are usually apprehensive about the fit for use by different people. When we say different people, we mean that the interface must be fit for use for all ages of people,

incapacitated people, non-native language people, people with low literacy, etc. The services should be accessible from any parts of the world and at any time (Signore et al., 2005). According to Dardha & Ndou (2004), a basic training for the community people is requisite to be able to use the ICT facilities for accessing information and e-services.

E-literacy is one of the factors affecting the implementation of e-government. E-literacy can be defined as people who cannot take advantage of services provided by the government for the reason that they are not computer literate. However, Almarabeh & AbuAli (2010), acknowledges e-governments' potential for the social drawbacks which can benefit in drawing equivalent access to services for all.

Political factors can be mainly due to, the political interference. Many government projects have political influence. In general, people are usually found being corrupted when the authority has the political interest (Baguma & Lubega, 2013). Whereas according to Almarabeh & AbuAli (2010), transparency for the citizen is the focal factor for success or failure of e-government implementation. The citizens lack the understanding on how government decisions are enacted because of the lack of transparency and lack of participation or involvement of the citizens in any decision making. Lack of transparency instigates the official for favouritism or corrupt practices and also benefits them to cover their shady activities.

In sum, many studies have explored factors for success and failure of e-government implementation from an intra-governmental perspective, for instance in terms of financial and technological resources available and staff's capacity and acceptance of new systems. At the same time, researchers have pointed to the importance of user involvement for successful implementation; and have indicated the importance of defining and tracking the roles of all actors. These latter factors point to the relevance of considering the perspective of citizens as both user and beneficiaries of e-government projects.

The factors and challenges of implementing e-government are summarised in table one below.

Factors influencing implementation	**Specific challenges**
Technical	- The complexity of the system - Less involvement of end users - Concerns related to privacy and security - Hard-Soft gaps - Lack of reliable electricity and telecommunications - Lack of access to internet service
Social	- Digital Divide - Less acceptance and use of new technology - Gap in the accessibility - to make use of information and communication - Distrust- Lack of trust from the citizen on an e-government system - Lack of awareness - Low citizen participation
Political	- Political interference leading to corruption and favouritism - Lack of political support - Lack of political will - Lack of legal framework - Absence or lack of transparency

Financial	- Financial constraints, high-cost structure, - High cost to access the internet - High cost of e-government services
Organisational	- Failure to meet the objectives of the initially set goals - Lack of training for the employees - Employees' readiness and resistance to change to electronic ways - Lack of planning for e-government implementation - Engaging/meeting of the stakeholders are minimum - Poor leadership - Absence of additional training or education of staff - Lack of infrastructure. - Poor communication internally and overly complex projects - Ineffective in defining roles and responsibilities of actors involved

Table 1: Challenges in implementing e-government applications

2.3. Conclusion

This chapter depicted more of the e-government themes according to various authors influencing the implementation of e-government which is sectioned under their relevant factors. The five factors have been considered for this study specifically 1) Social factor 2) Political factor 3) Technical factor 4) Financial factor and finally 5) Organisational factor. Further, this section understands that the possibility of the result reflecting under the already identified themes or the data analysis could derive different results.

The introduction of e-Sakor in Bhutan will be analysed in this thesis as a case of e-government. The background of e-Sakor is reviewed in the next chapter set against the context of land administration in Bhutan more broadly.

3. CASE DESCRIPTION: LAND REGISTRATION AND THE INTRODUCTION OF E-SAKOR IN BHUTAN

3.1. Introduction

This chapter describes the background of the land registration process in Bhutan and how it is structured alongside with the introduction of e-Sakor. The National Land Commission Secretariat (NLCS) is the sole apex organisation for all the agencies responsible for land registration and cadastral survey in the Kingdom (NLCS, 2007). The following descriptions focus on rural land registration processes.

3.2. Rural land registration process in Bhutan

Bhutan comprises of twenty Dzongkhag (district/region) and two hundred five Gewogs (a group of village/local). The branch office of NLCS has been established at every region and local level. According to NLCS (2015), depending on the location of the land, the transaction is processed through the local office. The local office is the starting point for processing rural land registration.

As per the NLCS (2007), The Land Act of Bhutan states that the registration of deed is guided by law using the standard deed form which is signed by both the parties (buyer and the seller/landowner). The landowners involved in the land transaction, before going to the local office they should execute an agreement specifying details of the land. They can either draft the deed or use prescribed form. The landowners complete the land transaction form by themselves or can seek help from the local office staffs. The required land transaction forms consists of the i) NLCS standard forms specifying the personal details of the transferor and transferee and land details to be transacted ii) it is a prerequisite for the transferor to submit their land title certificate iii) citizenship identity card for both transferor and transferee iv) census copy of the transferor and v) No Objection Certificate (NOC). All the family members of the transferor who are +18 years in the census should sign in the NOC. This act is mainly to let the family members, be informed about the land transaction and to avoid any future disputes or claims.

The land transaction in progress is then left for public viewing for 30 days, during which landowners have a stake in the land being a contest. If there are no complaints the land registrar will complete endorse the forms and submit to the regional office. If the transaction involves fragmentation of land, field survey will be carried out. During the field survey, adjacent plot owners must be present. They should accept the boundary by signing in the boundary endorsement form in order to avoid any boundary disputes in the future. The land registrar in the regional office will register the transaction in the online land transaction e-Sakor. At the National Land Commission Secretariat, the Rural Land Division will scrutinise and approve the transaction for solid plot transfer. Otherwise, the transaction for plot fragmentation will be routed through the Cadastral Information Divisions which is one of the divisions in NLCS (NLCS, 2015). The cadastral and land registration division is under one umbrella which in a way is to avoid complex procedures.

To go in line with the description of the rural land registration process, the figure below illustrates the land registration process for solid land transfer.

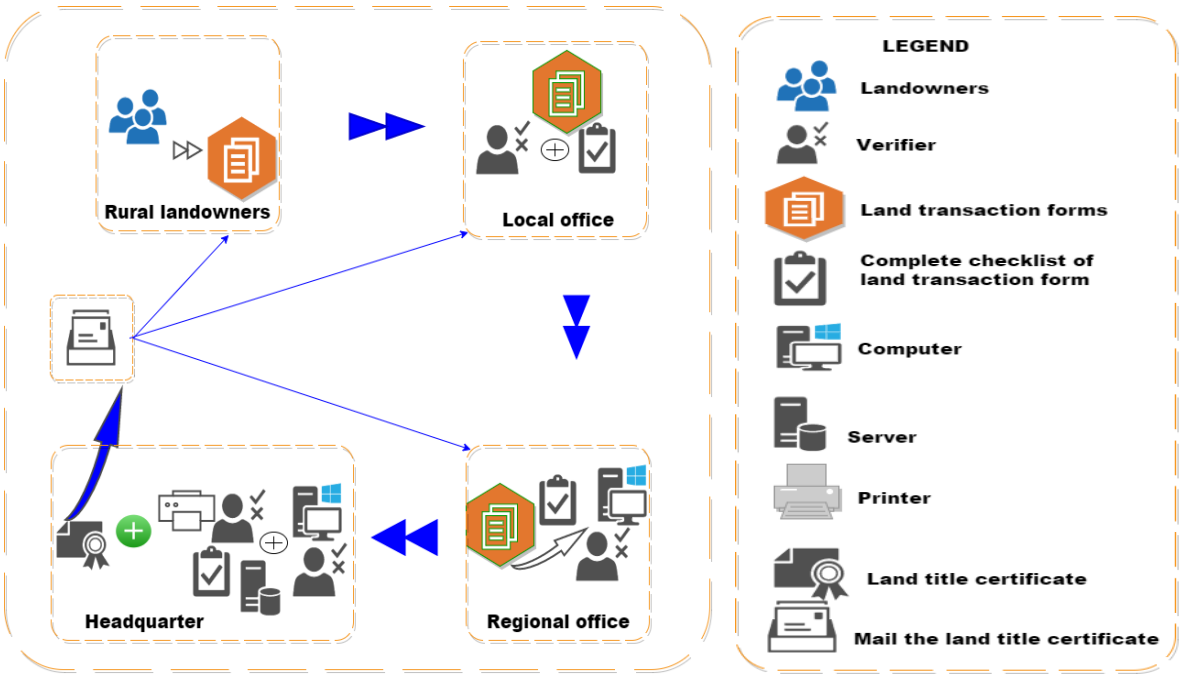


Figure 4: Flow diagram for land registration process for solid plot transfer (Source: author's own)

3.3. The introduction of e-Sakor

The land registration service is categorised into rural and urban and they handle the land registrations separately. All records (soft and hard copies) are centrally stored in the Headquarter (NLCS). In the earlier days, all the records of the land information or title deeds were written manually in Martham (meaning red book). The people of Bhutan are experiencing a fundamental change in the processes of registering land from a service system that is paper-based to electronic registration of land.

In 2011, NLCS in close collaboration with the Swede survey of Sweden developed an online land conveyance system known as e-Sakor (e-electronic, Sa-Land, Kor–about).The e-Sakor is expected to improve efficiency and quality of the services by creating access to land information from grass root level like local, regional and headquarter and the system is designed to support gradual decentralization of decision making, to provide transparent process to the land owners and to deliver faster public service (NLCS, 2015).

The e-Sakor is made available to those regions/districts which have completed National Cadastral Resurveying Program (NCRP). NCRP is currently one of the biggest projects in Bhutan initiated by His Majesty the King Jigme Khesar Namgyal Wangchuck. The project started in June 2008 and by the end of 2014, the cadastral surveying has covered almost all the rural areas.

4. METHODOLOGY AND DATA COLLECTION

4.1. Introduction

This chapter focuses on the methodology carried on for data collection during the field visit to Bhutan. To answer the research objectives and questions this chapter is divided into two sections. The first section describes the study area 'Trongsa' where most of the interview and observation was carried on. The second section will explain the materials used and research strategy carried on for answering all the research questions in order to attain the objectives of this study.

4.2. Research Design

Research Sub-objective	Research Question	Methods of Data collection	Data Source	Results
-To describe the development of e-Sakor to date	- How is e-Sakor currently organised? - What are the aims of e-Sakor and the achievements?	- Semi-structured interview - Participant observation	-Interview transcripts -Observation transcript	-Description of e-Sakor formulation- it's aims, problems and actors involved
-To identify factors influencing in the implementation of e-Sakor	- What are the factors influencing e-Sakor implementation from and intra-organisational perspective? - What are the landowners' experiences and practices in registering and transferring land with the NLCS of Bhutan, which need to be accounted for further e-Sakor implementation?	- Semi-structured interview - Snowballing sampling - Participant observation - Shadowing	-Interview transcripts/ -Observation transcript	-Description about the intra-organisational perspective sorted by factors from literature and identification of factors not yet included in literature -Description on the rural landowners' experiences and practices on how they register their land and their experiences sorted by relevant factors which need to be accounted during further e-Sakor implementation
-To identify main areas of focus for further implementation of e-Sakor based on above analysis	- What are the most important issues to solve inside of the organisation, on one hand, and on the side of landowners, on the other hand? - What are the main concerns of both the organisation and the landowners?	- Semi-structured interview	-Interview transcripts	-Comparison of intra-organisation and the landowners' perspective based on the relevant factors -Identifying the main concerns affecting both the organisation and the landowners

Table 2: Research design matrix

4.3. Study area selection

My study area is in the most central region of Bhutan known as 'Trongsa'. It is one of the important regions in the kingdom due to its historical and ecological contribution. It covers an area of about 1810 Sq km, with an elevation ranging from 1000 to 5000 meters above sea level with the total population of about 19,000. Agriculture farming is the main source of income for the majority of the population (BMT, 2016) (See photo 2 in the appendices). Trongsa region comprises of five village blocks (local) namely Drakteng, Korphu, Langthil, Nubi and Tangsibji.

The study area was selected based on the following consideration to derive the research objectives:

i. E-Sakor has been implemented in Trongsa
ii. The headquarter dealing official receives heavy land transaction from Trongsa
iii. Many landowners visits headquarter despite the long travel
iv. Maximum number of people speaks the National Language given the limited fieldwork time
v. Acquaintance at regional office given the limited fieldwork time

The e-Sakor implementation has not covered all the twenty regions in the country. This is due to the National Cadastral Resurvey Program (NCRP) which is ongoing in the last few regions. NCRP is setting the environment for the implementation of the e-Sakor system by digitalising the newly surveyed land details along with maps which are all being updated in the system making it possible for the e-Sakor system to be initiated. After the introduction of e-Sakor in Trongsa, there have been active land transactions and an increase in the number of rural landowners visiting headquarter compared to the past.

Since my research seeks to find why rural landowners travel all the way to headquarter despite the long journey, given the short time for field work and time required for travelling, Trongsa was the best choice for the study area. It generally takes around 10 hours by bus from Trongsa to reach Thimphu (NLCS Headquarter) if the road conditions are favourable. Due to the unfavourable road conditions caused by the eastern highway road widening project- it took me 15 hours to reach Trongsa.
The acquaintance at the regional office was the only respondent who helped me prepare for the data collection prior to the fieldwork and have assisted me throughout my data collection.

The local study areas in Trongsa were selected based on the following considerations:

i. Highest number of land transactions
ii. Highest number of landowners

I decided to visit Langthel and Dragteng gewog (local) out of five gewogs and this was merely based on the highest number of land transactions received till date as per the regional staffs. Also, a maximum number of land owners who visited the regional office for queries were mostly from these two local areas.

Dragteng Gewog - It took 3 hours by car to reach Dragteng from the regional office
Langthel Gewog - It took 3 and half hours by car to reach to Langthil from the regional office

Below the figure 5 shows i) An overview map of Bhutan showing the location of Thimphu where the headquarter of National Land Commission Secretariat is located and also the location of the study area 'Trongsa' ii) map of Thimphu showing the location of NLCS, Headquarter iii) map of Trongsa showing the regional office which is located in the Trongsa Dzong/ fortress iv) map of the local level chosen for the study area.

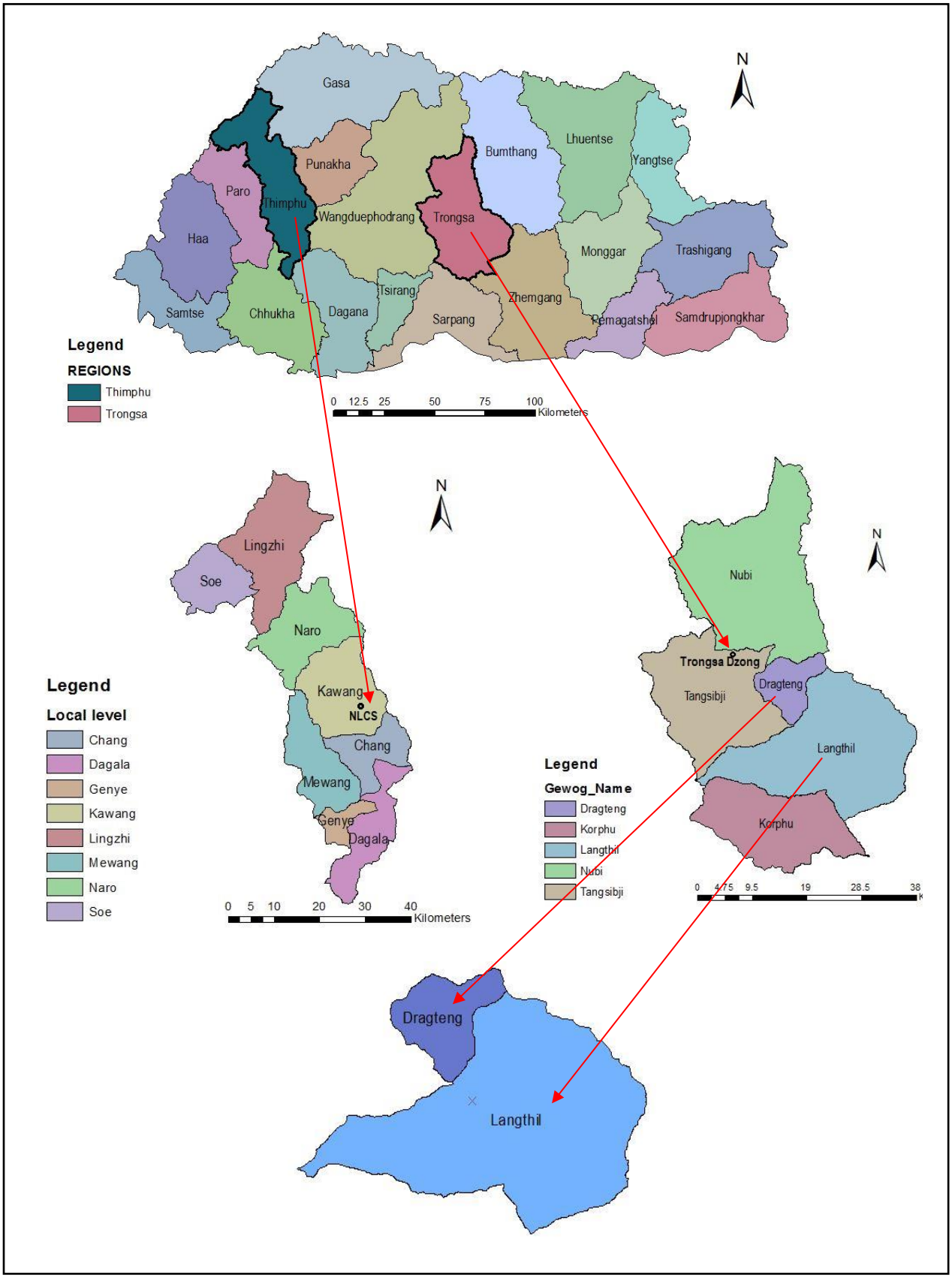


Figure 5: Map of Bhutan Showing Thimphu (Headquarter) and Trongsa (study area)

4.4. Methods

This research is a qualitative approach and it aims at understanding the perceptions of rural landowners-based on their practices and experiences as potential users of the e-Sakor and their perception on registering their land through e-Sakor in the hope of identifying where the problem and opportunities (for improvement) lie. Equally considering the perception of the intra-organisation which will be considered for a thematic analysis in the later section of data analysis and results. This approach of thematic analysis framework helps identify the main concerns to focus on during the further implementation of e-Sakor.

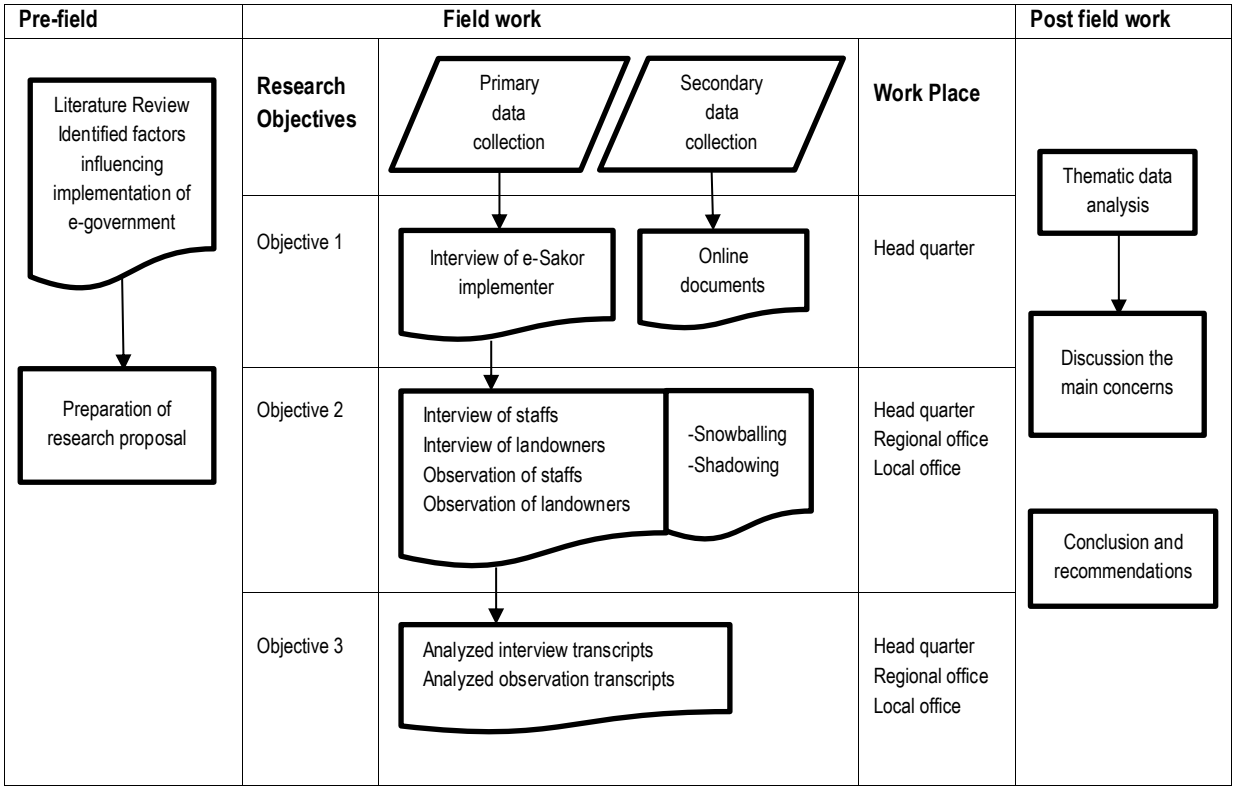


Figure 6: Description of research implementation phase

The qualitative approach consists of three parts. First, included a desk study on the literature review for the first analysis section, where I identified the factors influencing implementation of e-government according to the literature. This element of methodology helped to contextualise the findings and compare it to existing literature in the thesis. It also explains the meaning of each factor identified based on examples from the literature and as such guided the sorting of material collected into the corresponding factors identified in the literature. In order to triangulate the information from documents, and my own experience working for the organisation and to get a broader perspective on it, first I addressed objective one for the description of the e-Sakor formulation. The online resources were informative for this objective, additionally, I conducted a semi-structured interview with the ICT staff at National Land Commission Secretariat (NLCS) who is involved in the development of the rural e-Sakor system. I have sorted interview and the document data, problems and the achievements that I have identified, in terms of the factors which I had previously identified in the literature (Social, Technical, Organisational, Financial and Political).

Through the Land Record Officer of Trongsa Region, I collected some information for my study area and planned for the field visit. The semi-structured interview was conducted using a guide that helped me

during the process on questions and topics to be covered. Second my research includes semi-structured interview with the intra-organisation and the rural landowners because I wanted the interview to be somewhat conversational so that it will be both sided which helped me to understand the answers provided by first the staffs on their perception on the e-Sakor implementation and importantly the answers derived from the landowners with regard to their experiences according to the factors identified from the literature. In this manner, I derived the answers for my second objective in identifying factors influencing the implementation of e-Sakor. The semi-structured interview was conducted with four groups of rural landowners (i) landowners who visited the local office (See photo 5 in the appendices) (ii) landowners who visited the regional office (See photo 6 in the appendices) (iii) landowners who visited the headquarter (See photo 7 in the appendices) and (iv) I personally visited some of the rural landowners in their house (See photo 8 in the appendices). The findings from the interview helped me identify themes for the factors according to the intra-organisation and rural landowners' perspective and this way I narrowed the factors which had further an in-depth study during objective three.

To carry on my semi- structured interviews I used the purposive respondent sampling strategy because the researcher can intentionally choose the size and content of their sample in order to maximise their learning from their project. In making these selections, researchers may choose not only which people to include in their study, but what time, places, events or interactions (Lynch, 2008). Snowballing sampling was useful here since during the interviewing of rural landowners I was directed to some landowners and when I reached for that landowner I explored many unexpected things which seemed beneficial for the research (See photo 8 in the appendices). The third method, I used for data collection is participant observation since I was involved with the rural landowners to get a deeper insight into their lives. And I observed the process of land registration in all levels and for this kind of observation, event sampling was necessary since I decided prior to the observation on what type of events I need to observe or record so that I don't have to concentrate on the other events. I started with the headquarter because this is where the rural landowners (who travel all the way to the headquarter) come. I observed what the rural landowners do after reaching headquarter and why do they really visit headquarter. I visited the regional office because I wanted to understand what landowners do there and to contribute to the objective 2 into the practice I went to the local office to (i) get to know the landowners, where they live and meet them there and also (ii) to continue describing the process. This was one way of doing snowballing sampling.

To deeply understand how the rural landowners register their land in local and regional office, shadowing was a good technique to adopt in this research (See photo 9 in the appendices). Before the shadowing, I interviewed the rural landowner about their activities (including their families) in a daily basis and their practices and experiences in registering and transferring their land with the National Land Commission Secretariat. I was allowed to shadow a landowner and the Geydrung (office assistant) at the local office and observe the formalities for land transaction procedure before forwarding to the regional office. After the shadowing, I conducted a semi-structured interview with the landowner on their perspective on an e-Sakor system with a focus on the factors that were identified. The shadowing technique was conducted for few hours.

In total eleven semi-structured interviews were conducted with the NLCS staffs, 5 semi-structured interviews with the rural landowners who visited headquarter, 15 semi-structured interviews with the rural landowners at the local area which included snowballing sampling at Dragteng and Langthil gewog of Trongsa. Seven rural landowners who visited regional office were interviewed. Participant observation

namely shadowing was conducted with one staff at every office for their land transaction procedures. A number of observations were made for the rural landowners who visited the NLCS headquarter.
To that I have reached 'data saturation' of possible responses to the question of 'how many qualitative interviews is enough?' with my overall number of interviews (both with landowners and NLCS staff) – would be an overstatement, because of the relatively short time of this study and its exploratory nature has given that e-Sakor is new and it is the first to explore its development from a perspective peripheral to the capital and the project's main implementers. It is, for instance, surprising that during data analysis it became apparent that the political factor is relatively underrepresented in the interview materials. This may be because I was not in the field long enough to gain insights into political factor. However, while collecting data, when I realised that the answers derived from the interview were repetitive, that is how I found out that the saturation has reached.

After collecting all my data from semi-structured interviews, participant observation and document review- for factors from the perspective of landowners I analysed notes from conversations and observation with landowners and their interactions with staff. Similarly, for the perspectives of intra-organisation, I considered the transcripts from observation and interview with the staffs to know more why according to them the rural landowners still visits headquarter. The data are processed according to the framework I have adopted from Nkohkwo & Islam (2013) where the factors that influence in the implementation of e-government are categorised into (i) social factor (ii) financial factor (iii) organisational factor (iv) political factor and (v) technical factor.

It is a thematic analysis since I sorted out the data according to these main themes as discussed in the literature review, and reflected upon them to distill which ones are important from the perspectives of rural landowners' practices and experiences; and if there are other important themes that emerge from my study. 'One of the most common approaches to qualitative data analysis entails what is often referred to as thematic analysis' (Bryman, 2012). According to Bryman, the themes and sub themes are identified from a detailed reading of the transcripts which are applied in the framework approach where the subthemes are determined by the core themes for each case in the matrix.

Similarly, to analyse my data I used the five factors in three different sections which are the factors influencing e-government which will be informed by the literature review. For the second section, the factors are identified according to both intra- organisation and rural landowners' perspective. Addressing the main research focus is in the third section, the combined interpretation of empirical data focuses on identifying main concerns affecting both the organisation and the rural landowners. Based on the answers derived from the objective two, a thematic analysis was carried to identify the main areas of focus for further implementation of e-Sakor. Prioritising the data collected on the basis of the rural landowners' perspective on the e-Sakor process and the reasonings for their travel to headquarter and similarly the intra-organisation perspective can help us understand where the problem actually lies in so that this research may be used as the basis for the betterment of services for the rural landowners.

4.5. Conclusion

This chapter provides a sequential description of the methods adopted to derive answers for the specified objectives. This study helped to contextualise the findings and compare it to existing literature in the thesis. The selection of study area, the data collected, the methods to collect the data, and how they were processed, were all conducted keeping the research objectives in mind. The next chapter in the data analysis and result, the primary and secondary data are used in order to derive the research objectives.

5. DATA ANALYSIS AND RESULT

5.1. Introduction

In this section, the e-Sakor system will be described as follows. First, the context of its implementation will be summarised. Second, its main aims and achievement status will be reviewed. Third, stages of e-Sakor which will be mainly focusing on the land transaction stages. Fourth, the actors involved in e-Sakor and their roles and responsibilities. Finally, the plans for the near future which are all collected and analysed from an interview of the staffs at NLCS who are involved in the e-Sakor-system.

5.2. A description of e-Sakor's status and structure

Despite numerous resurveys, the country was still tightly gripped with land issues of all kinds, disputes, illegal encroachment, particularly pertaining to regularisation of excess lands. In order to resolve land issues and to generate an accurate and a reliable land information base, the Land Act 2007 states that the whole country must be systematically resurveyed. His Majesty the King of Bhutan, commanded that all land issues must be resolved once and for all. In pursuant to the Land Act 2007 provision and the Royal Command, the National Cadastral Resurveying Program abbreviated as NCRP was launched in 2008 starting with Lhuntse (eastern most part of Bhutan) with the following objectives to:

- Resolve all land disputes
- Build up land tenure system and security of ownership
- Establish a consistent and multipurpose land information system
- Improve land administration services
- Promote good governance

During the course of NCRP, thousands of pending transactions were cleared by delivering the service to the doorsteps of the people. Till date, NCRP has completed the first round of surveying. The cadastral and the land title records generated by NCRP created a conducive environment for the introduction of E-Sakor system. His Majesty and the royal government has helped provide all the resources needed to implement NCRP and e-Sakor system.

The table depicts the foremost aims of e-Sakor together with their achievement status according to the senior ICT staff at NLCS headquarter who is currently involved in developing an e-Sakor system for the rural division. The achievement status of e-Sakor aims and objectives is further explained in section 5.3 and section 5.4 below.

Main aims and objectives of e-Sakor	**Achievement Status**	
Manifold gain in speed of land transactions is expected	✓	Achieved
To decentralise decision making to the local governments	×	In progress
E-Sakor to have a public interface through the NLCS web portal where: ▪ Number of information to be made accessible to the public ▪ The transferor and transferee can monitor the status of their land transactions	×	In progress
Enhancement of accountability and transparency of land transaction procedure	✓	Achieved

Check and balance to protect the security of the land titles	✓	Achieved
It will minimise the multiple mortgaging of the same land and transaction of mortgaged land	✓	Achieved
Landowners can view their land details and map information online from anywhere in the world	×	In progress
It can also be used to see if your plot is being illegally transacted or not	×	In progress
Prospective buyers can access information about plots that they are interested in buying by verifying location, mortgage information, ownership type and acreage	×	In progress
Enhance land market and provide a conducive environment for ethical practice in land marketing	×	In progress
Minimise the manual work	✓	Achieved
Minimise the usage of papers	✓	Achieved

Table 3: The aims and objective of e-Sakor and their achievement status

5.3. Main aims and objectives of e-Sakor

Processing land transactions online are one of the primary applications of E-Sakor, the land transactions from the region will be submitted online to the NLCS for approval. The issue of land title certificates will also be decentralised to the local governments. The manifold gain in speed of land transactions is expected. Decentralisation of any decision making to cut short the process ultimately aiming to provide a quick service to the landowners. E-Sakor wants to do away with the process where all the decisions have to be routed from the NLCS headquarter. It aims at giving the authority to the local governments in times of dispute or land issues which can be solved by them.

E-Sakor will have a public interface through the NLCS web portal, the transferor and transferee can monitor the progress of their land transactions, which should enhance the accountability and transparency of land transaction procedure. The E-Sakor system aims to provide access to land information for remote offices like local and regional. Earlier, there was no audit trail for the land transaction. E-Sakor plans to have a built in check and balance in the system namely 'user hierarchy' which aims to avoid any manipulations or carelessness by the actors involved during the process of the land transaction.

Also the key modules of E-Sakor- the mortgage module is meant to register reliable and up to date mortgage information pertaining to all registered land and to share the information with the financial institutions. It will minimise the multiple mortgaging of the same land and transaction of mortgaged land. Minimal paper usage and minimising manual work - journey to a digital world adds up to the objectives of e-Sakor. Landowners can view their Thram and map information online from anywhere in the world. It can also be used to see if your plot is being illegally transacted or not. Prospective buyers can access information about plots that they are interested in buying by verifying location, mortgage information, ownership type and acreage. Thus, it will enhance land market and provide a conducive environment for ethical practice in land marketing.

5.4. Achievement status of e-Sakor aims and objectives

In the olden days, the land registration was processed manually and the paper usage was very high. With the introduction of an e-Sakor system which expected to minimise manual work and the usage of papers have been achieved positively. The introduction of e-Sakor has helped improve the efficiency- earlier on average, the land registrar transacted around 5 land transactions per day, now the land registrar could most notably register 15 land transactions on average per day which means that the speed in land transactions have improved as expected.

The e-Sakor has a built in check and balance in the system. The conventional way of check and balance is the user level like Registrar-> Surveyor-> Verifier at Regional office, the Registrar and Surveyor work shall be verified by the Verifier and forwards it to NLCS. And at NLCS it will pass through Mapper->Map Verifier-> Verifier->Approver. All this 'user hierarchy' is there for the system check and balance. At the same time, NLCS also use the most used technology where every user with their respective role; the system will keep an audit trail which is the basis for the check and balance.

With regard to the security of the data, every user is provided with user credential which is system generated and are kept confidential. This process contributes to being responsible for what you do- and to exhibit transparency throughout the land transaction process. However in terms of digitally displaying transparency to the users are still under process due to the technical and financial instability. The plans have not come into effect but to make it up for this, the NLCS are still sharing the land information to the concerned landowners if not to an authorised person. The e-Sakor has achieved to a certain level in preventing multiple mortgaging of the same land and transacting the mortgaged land which in the earlier days was hard to detect.

Any small land issues still need to be routed to headquarter and resolved there. The plan for decentralisation of decision making to local governments has still not started and neither did the decentralisation of land title certificates has come to play. The concerned landowners still need to visit NLCS to check on their land transactions or if there is any suspicion of their land being illegally transacted since the functions like monitoring their land transactions is not available as well, the prospective landowners also visit headquarter to assess land details before sealing the deal with the landowner.

The aims such as making land information and maps available online where landowners can easily access it from any part of the world are also not available. The e-Sakor planned to make the tracking and monitoring functions available at the local and regional office but at the local level the e-Sakor system has still not implemented and for the regional offices, these functions are not made available. These are some important reasons where the landowners (rural and urban) visit headquarter for queries which they fail to get it from the local and regional office.

5.5. E-Sakor land transaction activities

This section covers an activity diagram depicting the e-Sakor land transaction process together with a description of the land transaction activities explaining the roles and responsibilities of actors involved at each level (local, regional and headquarter).

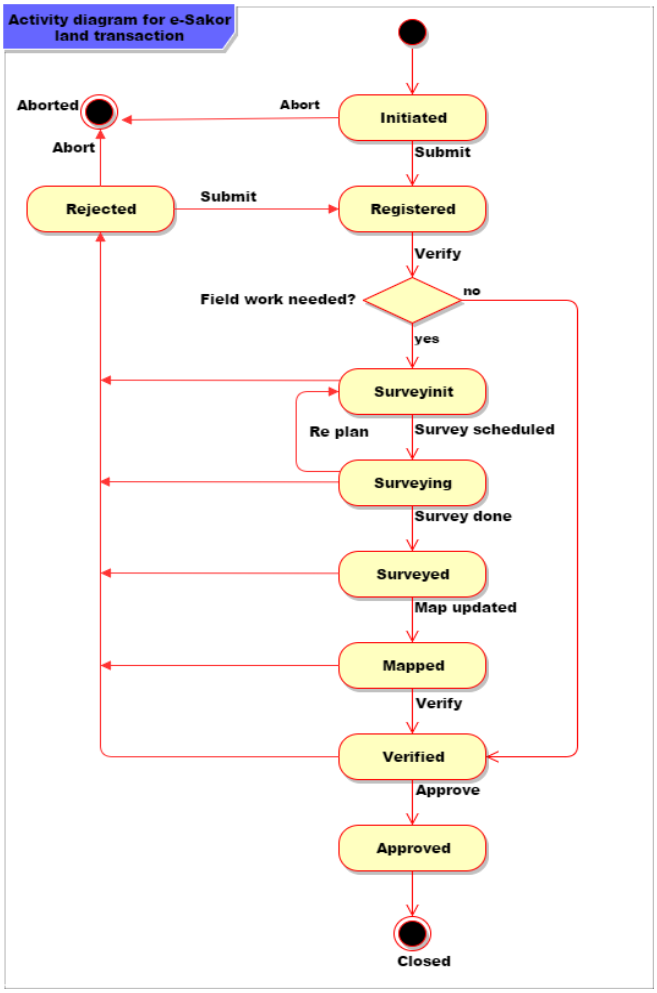


Figure 7: Activity diagram for e-Sakor land transaction

5.5.1. Procedure and actors involved in land transaction at the local office

The Gup (village representative) and Geydrung (office assistant) at local office are the two staffs usually involved in any land related activities. The Geydrung is responsible for giving assistance for completion of land transaction forms to the rural landowners. While the Gup is responsible for confirming the land transaction form (every page) with a seal and sign of acknowledgement that the land transaction forms have been verified. In the case of a missing seal or sign in the transaction form- they are usually sent for re-verification from the regional office and headquarter. This is to avoid any kind of manipulation after the submission of the land transaction document.

After the completion of the land transaction document, it is left for the cooling period for a month. According to the land registration procedure, the local staff are responsible for displaying the list of lands being transacted on the notice board at the local office for public viewing. As per the local staffs, in order

to make it more effective, they personally call all the family members for their consent. The Geydrung is responsible to personally deliver the land transaction documents to the regional office.

5.5.2. Procedure and actors involved in land transaction at the regional office

At the regional office, the Land registrar assistant verifies the land transaction documents for initiation in the e-Sakor system. Initiation involves entering all the basic data of the concerned transaction document and the scanned copy of the land transaction document itself. Once the land transaction is initiated in e-Sakor, it is submitted for further verification to the Land registrar in the regional office itself. The initiated transaction can either be rejected or approved for approval at headquarter. Rejected can either mean error committed at the local level or by the Land registrar assistant at the regional office during initializing process.

The land transaction which has been approved for registration can either be solid plot transfer or fragmentation of the plot. For the solid plot transfer- it is directly sent to the land registrar for final approval at headquarter. The survey planner, surveyor and mapper are responsible for the new survey or fragmentation of plots. Due to lack of manpower at the regional office, the surveyor manages the role of all (survey planning, surveying and mapping).

5.5.3. Procedure and actors involved in land transaction at headquarter

The transaction is received by the mapper of Cadastral Information Division in Headquarter in the case of fragmented plots. The mapper is responsible for examining and verifying the surveyed updates on the map. The final approval for the verified map is completed by the Head of the Mapping Section. If error, it follows the same procedure that is it reaches to the concerned staff or office for verification.

Once it is approved by the Mapping Section, it reaches the concerned Assistant land registrar or Land registrar assistant (the role in the land transaction is same for both the actors) in headquarter. They are responsible for verifying the initiated land transaction in the e-Sakor system. After the verification, they update the land transaction as per stated in the documents and the system if they tally. The approved land transaction documents are further verified by the Head of the concerned Section and followed by the final approval from the Head of the Division for the issuance of the land title certificate.

The administrator role (ICT staff) is for the administration of the system. Any system malfunction or human error is reported to the system administrator for rectification. In the whole process, the landowner comes in context only at the local office during the submission of their land transaction document.

5.5.4. Plans for the near future

NLCS will be working on the following plans under the supervision and funding from the World Bank.

- To improve on e-Sakor system error that has been identified
- To initiate e-Sakor at the local level
- To make the land information and tracking of land transaction available
- SMS alert for the landowners who do not have access to the internet

5.6. Factors influencing in the implementation of e-Sakor

5.6.1. Factors influencing e-Sakor implementation from an intra-organisational perspective

In this section, the factors influencing the implementation of e-Sakor will be described from an intra-organisational perspective, namely the staffs of NLCS. The analysis from the interview and observations of the staffs have been identified and structured according to the factors identified from the literature: Social, Financial, Organisational, Political, and Technical factors.

5.6.1.1. Social Factors

The pattern of spreading e-awareness which was initiated from headquarter staffs to regional staffs and so forth to the local staffs but somehow the pattern did not reach the rural landowners as expected. The e-awareness is perceived as the ability to recognise the initiatives of the government for the societal benefit- *"The landowners should understand that the new system is here to stay for good"* (Land registrar at Headquarter on 29-09-2016). There remained always the case of a maximum number of no show whenever there was land sensitization program for the landowners. Instead, the landowners sent a family member to represent them while they work as they feared of being blacklisted by the village representative.

There is the existence of digital divide among the landowners. The digital divide refers to the landowners who have and can access the internet and landowners who do not have and cannot access the internet and take benefit from the provided e-government services. This can be further described with an example from the existing events- besides e-Sakor service, NLCS also has a web service named as 'geo-portal' which has been made publicly available. This service allows the users to access the maps and the data and also they can share their map and data. Till date, there have been many users who have shared and also downloaded maps. This conveys us that this service is being used but also it conveys that the services are being used only by the e-literate users. Likewise, the land forms for all concerns are uploaded on the website of the NLCS and such information are only known to the landowners who can and have access to the internet. They directly download them from the website and print it for their first registration procedure whereas for the rural landowner who cannot or do not have access are deprived of these free services provided by NLCS due to their incapacity.

It is prominent that there are active land transactions in areas which have or has a plan for developmental activities compared to the areas with less or no developmental activities. The land transaction starts from sales, inheritance, exchange and substitution of land. The dealing official for the region which has high transaction has to deal with heavy visitors in a day compared to the other regions. In the study area Trongsa due to the development activities namely College of Language and Cultural Studies and two ongoing Hydro Power Projects and the road widening project – the land market has become active. Similarly, for other regions like Trashi Yangtse, Mongar, Wangdue, Punakha, Bumthang and Trashigang receives high transaction due to the developmental activities.

From the perspective of staff working in the NLCS the most important social factors influencing the implementation of e-Sakor currently are awareness of the system at the local level and access to the internet among landowners.

5.6.1.2. Financial Factors

Most of the respondents at NLCS measured the budget constraint as the most imperative factor currently hindering the smooth implementation of e-Sakor. The fact that NLCS is not an income generating Organisation, most of the projects initiated are funded by outside donors namely World Bank, JICA, ICIMOD. Although NLCS has the capacity of generating income, since Bhutan is in the vision of Gross National Happiness as mentioned in earlier chapter –the land transaction is processed free of charge which includes surveying fees as well. This is also to ensure that all the landowners register their land formally. The land tax and the amount paid to avail the land title certificate are both controlled by the Ministry of Finance which indicates that NLCS has no authority over the generated revenue. These elucidate why NLCS is a donor dependent.

However, the lack of financial resources has affected to build out the system and has withheld the plans for enhancing the e-Sakor system. The system has never undergone auditing after the launch in 2011 and neither did the system's deficiencies been rectified. Since there is a lack of IT expertise in the organisation, a helping hand is a prerequisite when it comes to building a system or correcting them.
Due to the budget constraint, the staffs on contract have not received a proper formal training and as a way out the organisation is providing in-house training for the staffs (mostly contract) which according to them is hard to sustain on its own in the long run.

5.6.1.3. Organisational Factors

Organisational factors influencing the implementation of e-Sakor are closely related to social and financial factors described above. Financial constraints influence contract situations and training of the organisation's staff. Social factors, especially e-awareness described above, influence the interactions between organisation's staff and landowners, in turn influencing trust in the system. These relations will be explained in more detail in the following paragraphs.

The NLCS has more contract staffs than the regular staffs. They were recruited to solve the staff deficiencies to carry on the big project National Cadastral Resurvey Program (NCRP) which was not probable without enough staffing. "*The training should not always be about 'clicking' – there should be enough training provided occasionally to motivate the staffs who have just adapted to a new system. They should be trained to be e-ready so to take responsibility for the task they do and know what lies beneath it but this is possible only if the funding is available"* (Land registrar at Headquarter on 29-09-2016).

To fill in the gap created due to the lack of staffing, there has been a frequent change of hands in the Organisation which has led to transfer of staffs internally or externally. Due to frequent change in hands, there is improper handing taking which in the end results in loss of documents or delayed work progress affecting the landowners directly.

NLCS has approached to the Royal Civil Service Commission (RCSC) of Bhutan who is overall responsible for recruiting governing employees for the issue persisting the recruitment of all the contract staffs who have been working for NLCS for more than seven years. To which the RCSC has approved partially, the NLCS have recruited 51 contract staffs to the regular post of Land Record Assistant. The slots are for the staffs who have qualified 12th grade (NLCS, 2016). The RCSC has not confirmed the approval for the recruitment of contract graduates till date. According to the Civil service act of Bhutan 2010 which conditions that graduates who wish to work for the Government should appear for the RCSC examination. Upon the successful passing of the examination, they shall be recruited as the civil servant

(RCSC, 2010). The contract staffs working at NLCS have either appeared the RCSC examination but not qualified or have not at all appeared the examination.

Because of the current events, it is most notable that the contract staffs have less sense of belongingness and this could be due to their frustrations on the insecure job whilst their contract term is nearing to an end ~ negative employee attitude which could be related to the absent staffs causing delayed work. These have brought a serious 'trust' issues from the landowners who have travelled all the way to visit the concerned officials but ineffective. But then again, there are the dedicated staffs both contract and regular who have been appreciated for their sincere service to the landowners "*It is unfortunate that some of the landowners had a bitter experience but it would be even unfair if the whole organisation is judged on basis of that- there are many staffs who are excelling in their work including some of the contract staffs"* (Land registrar at Headquarter on 30-09-2016).

The landowner visits NLCS for the belief that their work is completed faster if they visit the office personally. The speculation among the landowners has started due to the consideration of urgent cases. "*this kind of speculations can only be due to the lack of awareness programme, if the landowners are well sensitised on the number of days it requires to complete the transaction then they won't visit the office unless it's very urgent. We usually process the land transactions on first come first basis but it so happens that sometimes the landowners visits us requesting to process their land transaction first although it has just reached. They say it is the very urgent case and so we cannot deny it since they came all the way here"* (Land registrar at Headquarter on 30-09-2016).

The staffs at the local office are not recruited by the NLCS, they are elected by the people of the village. The staffs are under qualified which according to the staffs at the regional office is the foremost cause for their delayed work. So far, e-Sakor is not implemented in the local office and it has been observed that maximum duration is taken in between the local office and regional office. As per the respondents at the regional office- they find many errors while verifying the land transaction forms received from the local office which is a frequent occurrence. It generally takes time for the Geydrung to visit the regional office and reprocess the land transaction document which has been rejected. The delays at the local office are usually caused due to the lack of human resource and unfavourable road conditions (See photo 10 in the appendices).

Furthermore, there has not yet been an effective stakeholder meeting for e-Sakor due to less interest from the stakeholder members. Stakeholders are the representative of the Organisations, Ministries and representative of the people. The e-government element 'e-Sakor' function and the system as a whole could not be explained and acknowledged well by the members of the stakeholders. Stakeholder meetings are conducted to ensure the spread of the pattern of awareness and that its benefits reach to the users as a whole.

5.6.1.4. Political Factors

No political factors could be identified in the analysis nor were much discussed during the interview for the reason that most of the decisions were made by the top levels at Headquarter. However, it was mentioned that there is no e-Sakor policy nor there is land policy– till date, a copy of draft version for the land policy has been released and the land policy final version is being expected to be released sooner. It aims to help act as a guidance for continuous swift progress in work.

5.6.1.5. Technical Factors

NLCS is aware of the deficiencies the system hold such as the functions to track your land transaction, making the land details publicly available, tracking the history of the land transactions and decentralisation of decision making which were initially planned to be implemented during the launch of e-Sakor in 2011- *"Implementing e-Sakor in the local office would be of a greater challenge since firstly the lack of staffing issues. Second, it depends on the availability of electricity- the electricity has not reached few parts of rural Bhutan. Furthermore, internet access and after that good network connection is a concern"* (ICT staff at Headquarter on 27-09-2016).

The rural electrification has extended for many remote areas and to more difficult terrain and for the remote areas which are not technically and economically possible for on-grid rural electrification to reach, these village people are provided with solar home systems especially used as a supply of electricity (ADB, 2015). The internet connection in the rural part of Bhutan is very weak and there is fluctuation in the connection to which sometimes it takes up a whole day to upload a single land transaction document. The internet fluctuation has an enormous amount of effect on the progress of the workflow.

In this final instance, the basic physical infrastructure of the *internet and electricity* are more influential factors in e-Sakor implementation than the training of local staff or awareness among landowners; and these factors closely intertwine with one another.
The big concern from the perspective of the intra-organisation is to save money underlying to make the system run with as little resources as possible and technology promises to increase efficiency in this respect. However, it has to be noted that technical factors influencing e-Sakor implementation are all closely linked to social, organisational and financial factors already discussed above.

5.6.2. Landowner's experiences and practices in registering and transferring land with the NLCS of Bhutan to be accounted for e-Sakor implementation

In this section, the factors will be identified so that it can be accounted during the further implementation of e-Sakor. The factors are based on the rural landowner's perception on their experiences and practices in registering their land. The factors have been categorised similarly to that of the intra-organisation that is Social, Financial, Organisational, Political and Technical

5.6.2.1. Social Factors

Social factors identified pertain mainly to different reasons for landowners visiting NLCS offices instead of using e-Sakor services. These factors relate to places of residence and family relations, time taken for transactions to process and urgency from the perspective of landowners as well as the type of transactions necessary, lack of trust in proper transaction processes based on negative past experiences, and a lack of awareness of the existence of e-Sakor. These factors will be described in more detail in the following paragraphs.

There are many categories of landowners who visit headquarter for various reasons-

- Landowners who live in the capital city
- Landowners who live nearby capital city and
- Landowners who live far away from the capital city

For those landowners who lives or lives nearby prefers to visit headquarter personally rather than waiting and be informed by the local office on completion of their work- *"I have come to collect my land title certificate of Punakha region personally since I live and work in Thimphu. I think it would be unnecessary expense to travel to Punakha*

while you can request and get it from Headquarter if not I have to take leave from my work and travel to Punakha just to collect the land title certificate" (Landowner at Headquarter on 27-09-2016).

Most of the landowners visited headquarter to follow up on their land transactions and to collect their land title certificate which generally takes the time to reach them after the completion of the transaction. Some of the rural landowners, instead of visiting headquarter, they send their relatives or family members to check on their land transaction status and follow up on their behalf- *"I have come to follow up on my sister's land transaction. Since my sister is busy with her daily farm work in the village- she has asked me to check on her land transaction which has been sent from the Regional office recently. The regional staff have provided the transaction number to track her land transaction, I work in one of the private company as an office assistant"* (Landowner at Headquarter on 28-09-2016).

The rural landowner who visits headquarter, it is either due to urgent issues where they were advised to personally visit the concerned staff and request them for speedy work or either to process their mortgage letter. And similarly to check if their land transaction is taking more time than it is required to –
"The bank wants us to get a letter from here in order to process our mortgage- they were saying this is because our land title certificates have still not been issued. I come to see the dealing official for clarification" (Landowner at Headquarter on 29-09-2016).
"I am here to follow up on my land transaction which had been rejected earlier according to the regional staff. I came to know about it only when I went to follow up in the regional office. The regional staffs say that my transaction document has been verified and it has been sent again to headquarter for approval. So I thought to check on my land transaction and collect my land title certificate while I pay a visit to the traditional medicinal hospital" (Landowner at Headquarter on 30-09-2016).

There are landowners who had bitter experience processing their land transaction in the past, where some of them took more than the required time. While for others their land transaction document went missing, either the documents did not reach headquarter for processing or it did not reach regional office after the completion of land transaction, since the forwarding letter of completion and the land title certificates are sent through postal service. These activities in the past have created a trust issue among the landowners - *"To get my work done I had to travel to headquarter numerous time. They always say that they will send it to the regional office once my work is done but once I get back to my village, again there is nothing- It was a land acquisition case. When the Govt took my land for some developmental activities as they have mentioned it was so easy with lesser formalities but when I had to get my land substitute back it almost took me a year and they sent me from office to office. I am sure my work would still have been pending if it was not for the head of the division that I visited personally after too much frustrations. From his directives, only the process was quick from the dealing officials' side"* (Landowner in local level on 5-10-2016).

Most of the landowners whose land transaction type is 'Sales' usually are the ones who visits headquarter to request or for follow up. For the reason, so that the transferor and transferee could settle their payment at the earliest- *"I have come to collect my land transaction. The regional office land registrar says he has sent it yesterday. I am in urgent need. I hope I get my land title certificate at the earliest. My transaction type is 'sales'. I have some payment to be received from the transferee after the completion of the land transaction"* (Landowner at Headquarter on 29-09-2016).

5.6.2.2. Organisational Factors

The following factors relate to issues inside the organisation from the perspective of landowners.
There is distress in losing their land transaction documents due to frequent change in hands within the organisation. Some of the landowners had an unpleasant experience from the past where it required a lot of time to find their documents and for some of them there was a difficulty in processing their documents from the beginning since the documents could not be recovered- *"I am here to talk with the regional head of the office if it is okay to take my correspondence letter for land dispute to headquarter personally. I am in fear that they might misplace my document once again like the earlier correspondence. The officer seemed new and was trying to help, though"* (Landowner in regional office on 10-10-2016).

The change in the duration of the land transaction process has been noticed by the rural landowners as well- *"The differences in the services offered in the past and currently are visible and I think I am grateful to see this kind of changes. The change is massive. I did my land transaction back in late 90's, it was an inheritance land from my late mother. It was a lengthy process back then. I remember visiting the district court several times to check on my court verdict approval. After few visits there, the staffs asked me to follow up at NLCS and when I visited NLCS, my transaction document has not been received by the dealing officer. I was sent from office to office a number of times. If I remember correctly, it took me more than a year to get my land title certificate. The changes I see now is the 'time' and my documents had reached the dealing officer safely before I could visit her. I am content with what is being provided currently. The change is good"* (Landowner in local office on 6-10-2016).

The local office was not established back then. The landowners had to travel to the regional office for any kind of land issues or land transactions to be processed. Then it was all routed through the district court in Thimphu (Capital). After the approval from the court, it was then sent to the National Land Commission Secretariat for the registration in the land title record and issuance of land title certificate to the landowners. The process took years to complete a transaction. For this reason, there were many landowners who avoided and prolonged processing their land transaction legally instead they transacted their land with a piece of agreement between the two parties which later became the reason of their land disputes. By the enactment of The Land Act 2007, the Court process was removed from the frame in an aim to shorten the duration of the land registration process.

The biggest concern from the perspective of the rural landowners is feeling safe that their land is handled well by NLCS.

5.6.2.3. Political Factors

There was not much discussion on this factor as well since the rural landowners that were interviewed at the local, regional and headquarter appeared unaware of the activities of the organisation.

5.6.2.4. Financial Factors

Most of the rural landowners who were visiting and who have visited headquarter have their family or relatives living in Thimphu so it was eminent that the accommodation was not a problem for most of them. Unlike for the rural landowners who do not have a family or relatives living in the capital city, they depend upon the local and regional staffs for any queries.
Although the land transaction forms are meant to be provided free by NLCS- the local office has stopped providing them and now they are required to buy it from the nearest community centre paying a minimal amount.

5.6.2.5. Technical Factors

Some landowners relate e-Sakor with the use of computers in general. For the landowners who have visited or were visiting headquarter were aware that their land transaction has been sent through computer and the landowners were provided with a transaction number from the regional office to check their transaction status- *"While I went for my health check-up, I also visited NLCS to follow up for my land transaction. It was a sales transaction. The land registrar at the regional had already given me a number, he said I should show the number to know where my land transaction has reached. He told me that now our land transaction documents are not sent through postal service but through the computer and it is safe. I got my land title certificate within few days after my visit"* (Landowner in local level on 5-10-2016).

The rural landowners appeared least concerned in what e-Sakor has to provide as they bring out their illiterateness to use the computer. The rural landowners were more expressive for their land transaction completion without any distress and emphasised the need of e-Sakor at the local office after realising that it could fasten the completion duration of any work with regard to land.

5.7. To identify main areas of focus for the further implementation of e-Sakor based on above analysis

Based on the thematic analysis structuring intra-organisation's and landowners' perceptions into respective factors, the following section compares the two in order to identify the main themes which are a concern to or are affecting both.

This can help resolve budget constraint since it is the big problem by identifying the main areas which need to be focused during resource allocation and during the further implementation of e-Sakor. Further illumination of the table is synthesised to understand the identification of the main areas.

5.7.1. Thematic analysis for intra-organisation and rural landowners' perspective

Factors	Intra-Organisation	Rural Landowners	Comparison
Financial	Train staffs Build up system	Expenses incurred to visit headquarter	The lack of financial resources has affected in the implementation process of e-Sakor. Due to which the staffs lacked formal training and the system deficiencies have never been rectified. The rural landowners are not aware on the system deficiencies neither they know that most of the staffs have not received formal training to use the system. For them, the expenses incurred to travel to headquarter mattered them. It especially affected those rural landowners who had no one living in the capital city which made their travel costly.
Technical	Electricity Internet coverage	Internet literacy Accessibility	Due to the weak internet connection, often it takes a whole day to upload a single land transaction in the e-Sakor system, especially at the regional office. While for the rural landowners, the e-Sakor service does not seem friendly because of the low computer literacy especially among the rural landowners.

Organisational	Contract staffs Staff transfer	Absent staffs Delayed works Loss of documents	The staffs at NLCS are mostly on contract, they have been recruited to fill in the gap. Due to less sense of belonging from the contract staffs which could be related to the absent staffs- this action is directly affecting the rural landowners who visit headquarter to meet the concerned official. Internal and external transfer of staffs to fill in the gap for the lack of staffs at NLCS. Improper handing taking has led to loss or misplacement of the documents of the landowners. In the end, the works are being delayed.
	Awareness of e-government (e-Sakor)	Usability concern (of internet and e-Sakor services)	The intra-organisation perceives less awareness among the landowners as a problem whereas the landowners appeared that the awareness of e-Sakor's existence is least necessitate. Instead of the awareness program, they were apprehensive with support in interacting with the system at local level.
Social	Past activities lacked efficiency and effectiveness	Trust issues	The NLCS initiated e-Sakor program mainly to provide an efficient and effective delivery of service which they presumed to be lacking in the past. Through the unpleasant experience from the past, the rural landowners have trust issues with NLCS.
	More land transaction	More concern	The favourable geographic location and developmental activities have an effect on both. The concerned dealing official receives more land transactions and the landowners are more concerned towards their land, making them too frequently travel to headquarter.
	Accepting urgent case	Speculations among the rural landowners	The consideration of urgent cases of landowners who visits headquarter has created a speculation among the rest of the rural landowners that your work is handled quicker if you visit the head office personally.
Political	Not much discussed	Not much discussed	There was not much discussion with regard to the political issues mainly since both of them were not involved in it and the decisions were made by the highest decision maker in the Organisation.

Table 4: Thematic analysis for intra-organisation and landowners' perspective

5.7.2. Identified main concerns

Listed below are the main concerns which have been identified to be affecting both the intra-organisation and the landowners and furthermore they are all interrelated to each other.

1. Local level capacities: both staff and technology
2. Internet and power connection
3. Lack of dedicated, regular, long-term staffs at local, regional offices and headquarter
4. Trust in registration process on part of rural landowners
5. Geographic location of dynamic land use changes and development

1. Local level capacities: both staff and technology

The plans to decentralise the decision making is challenging due to lack of financial resources, lack of implementation technologies and low personnel capacities for the potential use of e-Sakor use services and technologies at the local level. The lack of technical capacities has caused delays, especially in transaction process between the local and regional level. The local office is the front office to NLCS where the landowners first come in contact with. On the other hand, the staffs at the local office are not employed by NLCS, they are elected by the people of the village and mostly the staffs are less qualified.

Despite the fact that the Geydrung is underqualified and lacks training, he takes the responsibility to deal with the landowners first. The rural landowners at the local office were apprehensive about the number of staffs present at the local office. This also shows that the capacities, which local office staff and hence landowners rely on to process information cannot be easily replaced with a digital system as it requires knowledge of local situations and explanations of the situation of both landowners and office staff.

2. Internet and power connection

According to Power Corporation of Bhutan, they are still struggling to reach grid electricity to some difficult and remote areas which are targeted to be completed in 2016 (BPC, 2015) and the fact that Bhutan first experienced the Internet in 1999. Until the end of 2003, there was only one Internet Service Provider (Druknet- a company of Bhutan Telecom Limited) in the country which was sponsored by the Government. At present, there are few Internet Service Providers and most are limited to specific regions of the country (Tobgay & Wangmo, 2008).

"Although computers were first introduced in the country in the early 1980s, its applications and use remained limited until the introduction of internet and world wide web in 1999" (Tobgay & Wangmo, 2008). As per the statistic report of the World Bank (2015), the internet usage in Bhutan has increased significantly from 0.0% in 1990 to 39.8% in 2015. The fixed broadband service which is generally used by the government sectors in Bhutan has only reached to some selected places according to Ministry of Information and Communication (MOIC, 2016).

The ICT sector is facing several challenges to providing full coverage of internet facilities and the fact that Bhutan is a mountainous country with the sparsely scattered population. Similarly, other developing countries also face ICT challenges such as lack of resources, lack of ICT policies, lack of ICT infrastructure, lack of ICT expertise, lack of human resource from ICT background. These challenges add up in deteriorating the quality of internet in developing countries (Marshall & Taylor, 2015).

3. Lack of dedicated, regular, long-term staffs at local, regional offices and headquarter

The NLCS staffs are mostly on contract. They were recruited to solve the staff deficiencies to carry on the big project National Cadastral Resurvey Program in Bhutan which was not probable without recruiting them. Compared to the regular staff, the contract staff has less sense of belongingness. This is apparent because of their job insecurities. This has negatively affected the workplace where the staffs were frequently found absent.

On the other hand, there are staffs both regular and on contract, who were recognised for their selfless dedication towards their work and they have been appreciated by the landowners too. Most of the contract staffs did not receive formal training to use the system while most of the respondents find the system easier to operate without additional training.

4. Trust in registration process on part of rural landowners

Due to the ongoing project NCRP, there are frequent shuffling of staffs internally and also externally which have brought a distress within the landowners due to their experience from the past where their documents went missing and at times they had to start the process from the beginning. These all situations has not let go their past experiences which have affected their trust level. The landowners still follow their own culture for registering their land where they travel all the way to headquarter just to ensure that their land transactions have reached and are on process. But there are landowners who have a positive experience while dealing with NLCS and confidence in the changes brought by NLCS for their betterment. However, the past negative experiences have the competence to overshadow positive experiences with the dedicated staff.

5. Geographic location of dynamic land use changes and development

It is observed that different regions in the country experience a different kind of land transactions. Favourable geographic location and occurrence of developmental activities are vital factors in determining the volume of land transactions taking place in a region. The map below (figure 8) displays the locations with high transaction due to its favourable geographic location which includes Thimphu and regions around it. Favourable geographic location in this study is considered as developed regions like Thimphu and places nearby it, with a high value of land. These regions mostly experiences a large volume of land transactions which mostly includes sales transaction. Therefore, landowners frequently visit NLCS headquarter from this region for sale transactions and the visit is generally with the intention to speed up the transactions to finalise their sale deals.

On the contrary, the map (figure 9) displays regions receiving high land transactions concerning transactions between the organisation and rural landowners because of the ongoing developmental activities. In this case, landowners visiting NLCS headquarter frequently are generally to follow up on the transactions with the concern of losing their land.

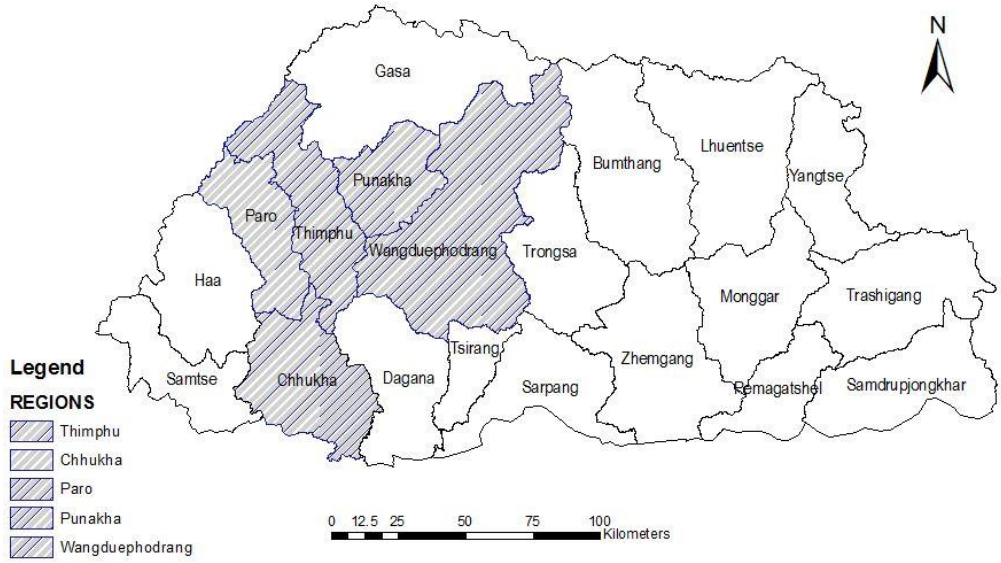


Figure 8: Regions with favourable geographical location

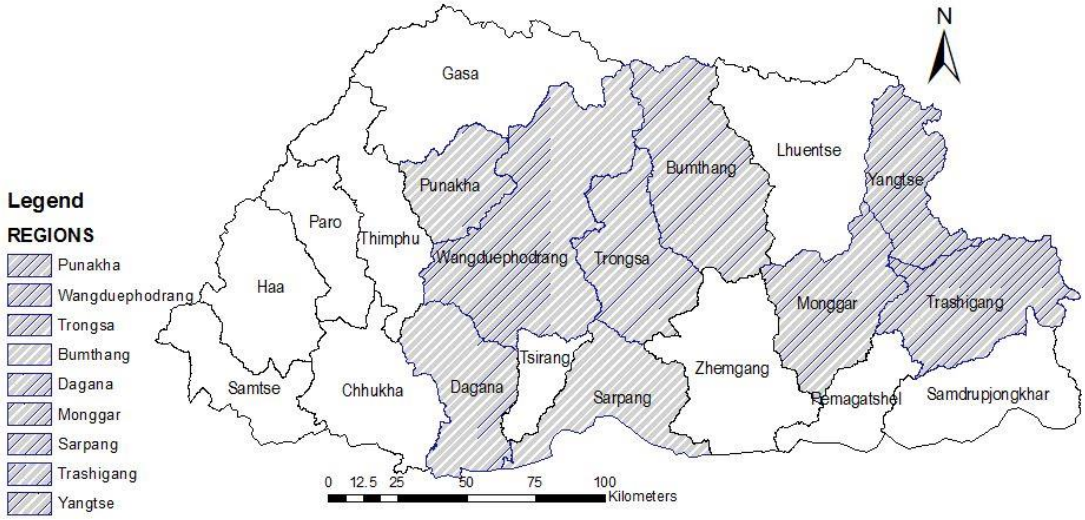


Figure 9: Regions receiving high land transaction due to developmental activities

5.8. Conclusion

In this chapter, the framework approach of thematic analysis on the intra-organisation and rural landowners' perspective helped identify the main areas of concerns that the NLCS may focus during the further implementation. It is noted that budget is the main concern for the intra-organisation where a maximum of the rural landowner expressed safety and efficiency for their land transaction. This helped us to identify the main themes affecting both the organisation and the rural landowners. Based on this chapter, the next chapter discussion covers the key findings of the study.

6. DISCUSSION

6.1. Introduction

This section will discuss the main findings from the data analysis and results section.
The findings of the challenges on implementing e-government are centred on the perception of the rural landowners and the intra-organisation perception. It has facilitated in identifying the main concerns which are affecting them both although perceived from different perspectives. This direction can support the further implementation of e-Sakor where NLCS can look upon the most significant concerns rather than spending the resources on less important areas.

6.2. Understanding the results

The comparison in section 5.7.1 has shown that the four factors in this study are i) financial ii) technical iii) organisational and iii) social factors are interconnected to one another. The nature of these factors has been identified from the perception of both the rural landowners and the organisation. This forms the basis for the following discussion, where main areas of focus are discussed that are important to both landowners and the organisation.

All the themes identified on the rural landowner's side relate to safety and trust that their documents are being handled well and that they don't lose their land so forth. As far as the organisation is concerned, they are confined by internet coverage which has withheld implementation of e-Sakor at the local level. Also, the findings from the research state that all the land issues on the intra-organisational side relate to efficiency and to make the most out of scarce resources.
The limitation of the study is the political factor since there were not many findings on it or the staffs did not want to talk about it.

6.2.1. Local level capacities: both staff and technology

Decentralisation of decision making is understood as giving the complete authority to make decisions with no interference from NLCS (the big body) itself. However, the plan could not be initiated as NLCS is still struggling to implement the e-Sakor system at the local level. The study has identified that the technical capacities and lack of qualified staffs at the local office have caused delays, especially between the local and regional level. A study carried on in Uganda by Nabafu & Maiga (2012), to synthesise the requirement for local e-government, they have equally mentioned the importance to build an ICT infrastructure and training of local staffs.

Similarly, countries like Zambia and sub-Saharan African countries also identify the lack of ICT infrastructure and skilled human resources problematic especially in rural areas (Bwalya, 2009). Shackleton & Dawson (2007), stated the significance of e-government implementation at the local level. However, they specified that the developing countries are still facing the problems and constraints to implement e-government at the local level. Where Braccini, Marturano, & Atri (2011), argues in their study that the technology barrier is not the only cause of the lack of ICT infrastructures but also the lack of knowledge among the staffs which does not always mean the e-service delivery skills but the awareness from the involvement of e-service delivery and development.

6.2.2. Internet and power connection

According to Bhutan Power Corporation, the inaccessibility of work sites due to difficult geographical terrain has caused delays to reach electricity to few remote areas (BPC, 2015). Similarly, in Uganda, the irregularity supply of electricity is a barrier for implementation of e-government projects especially in local government (Nabafu & Maiga, 2012). A study carried on by Asgarkhani (2005), also identified the barriers as that lack of telecommunication and network infrastructures in ruling out any e-government initiatives. Also according to Nabafu & Maiga (2012), the local governments need to put in place an ICT infrastructure supported by the reliable power supply and network connectivity before e-government implementation.

The establishment of ICT is a young occurrence in Bhutan. The ICT sector is still struggling to provide full internet coverage and the major barrier is the fact that Bhutan is a mountainous country with sparsely scattered population making it very difficult to reach to the worksites. Dorji (2015), comprehends that the major internet problems in Bhutan are due to low speed, frequent disruption, low maintenance and low coverage. For an e-government program to succeed fully, it has become essential to have internet access for all (Silcock, 2001).

6.2.3. Lack of dedicated, regular, long-term staffs at local, regional offices and headquarter

According to NLCS, the contract staffs have less sense of belongingness which is affecting the efficiency of the work progress. Where Kaur (2006), finds it essential to contract or outsource staffs for efficient delivery of service. Eigeman, Twaalfhoven, & Zaal (2007), underlined the importance to deliver services to the people professionally by qualified, trained, dedicated staffs. Richard (2014), in his study, indicated that the lack of motivation and the lack of positive attitude of staffs could affect any initiatives negatively. To go in line with the study, Nabafu & Maiga (2012), explains the importance of training staffs which should be throughout the implementation stages of e-government.

The success of any governmental program mainly depends on the sufficient numbers of trained and dedicated staffs (A M Tuladhar, 2004). Ibrahim & Zakaria (2015), emphasised the need for the organisations to design training to motivate the staffs. According to Antonioni (1999), "a number of effort people are willing to put into their work usually, depends on the degree to which they feel their motivational needs will be satisfied. Individuals become demotivated when it seems to them that something in their organisation prevents them from attaining good outcomes" (p.27). Furthermore, Asgarkhani (2005), emphasised the need for the government staffs to be reskilled in order to get acquainted with the changes of e-governmental initiatives such as ICT structure and the new roles.

6.2.4. Trust in registration process on part of rural landowners

The lack of trust usually results in less involvement from the landowners in any kind of governmental initiatives. The past bitter experience of not giving adequate importance to the landowners' grievance have instigated distrust in some of the landowners. The study by Dardha & Ndou (2004), similarly specifies that citizens' distrust their governments, especially where there has been a history of unpleasant activities. Eigeman et al. (2007), considers trust and citizen satisfaction in service delivery as important factors in maintaining the legitimacy of government authority.

Where Teo, Srivastava & Jiang (2009), confirms that the absence of adequate trust in e-government system, has led the citizens to either choose to not adopt or to revert to the traditional means of interaction with the government. The Zambia case study has similarly outlined the lack of adequate trust

in the government causing implications to using the e-government systems (Bwalya, 2009). During the interview at the local level, some landowners were expressive on their confidence in the new system after understanding the capabilities of the system. Along similar lines, according to Parent, Vandebeek, & Gemino (2005), trusting a system not necessarily mean those who receive a positive service experience but also those with high pre-existing levels of introspective trust.

6.2.5. Geographic location of dynamic land use changes and development

According to the respondents at NLCS, the regions with a high value of land (Thimphu and regions nearby it) and regions with high developmental areas see a large number of land transactions. This factor has not been identified based on the literature review in chapter two. It is important because it shows that developmental activities and land value effect the volume of land transactions and thereof the implementation of e-government.

7. CONCLUSION AND RECOMMENDATION

7.1. Introduction

This chapter covers the research conclusions and recommendations. This study prioritises both the perceptions of the intra-organisation and the rural landowners in order to identify the main concerns affecting both which are drawn through a thematic analysis.

7.2. Conclusion

The prime objective of this study was to examine e-government implementation from the perspective of implementers (NLCS) and potential beneficiaries (rural landowners) in the case of e-Sakor. To attain this aim, it became essential to reach some prerequisite objectives.

Objective one: *To describe the development of e-Sakor to date*
The Nationwide Cadastral Resurvey Program in Bhutan created a conducive environment for the introduction of E-Sakor in 2011 (section 5.2) with the foremost aim to improve efficiency and quality of the services by creating access to land information from grass root level like local and regional and is intended to support gradual decentralisation of decision making. Out of which the main aim to achieve a speed of land transactions has been attained (table 3). Earlier on average, the land registrar transacted around 5 land transactions per day but after the introduction of e-Sakor, the land transaction has increased to 15 on average per day. Any minor land issues still require being routed to headquarter and however has to be resolved there. The implementation of e-Sakor to local governments has not come into effect yet (section 5.4) and many landowners still visit NLCS to check and verify their land transactions.

Objective two: *To identify factors influencing in the implementation of e-Sakor*
Given the perspective of the intra-organisation, NLCS has no budget to further implement e-Sakor (section 5.6.1.2). This has resulted in NLCS trying to keep the system functioning with as little resources as possible and technology promises to increase efficiency in this respect. The plans to rectify the system deficiencies has been withheld resulting to an effect on the service provision provided by NLCS. The basic physical infrastructure of the internet and electricity (section 5.6.1.5) are more influential factors in e-Sakor implementation than awareness of e-Sakor among landowners and these factors closely intertwine with one another.

Lack of staffs in NLCS have led to recruiting contract staffs (section 5.6.1.3) in the year 2009 as a support to execute the National Cadastral Resurvey Program which according to them would not have been probable with the number of available regular staffs. The contract staffs have less sense of belongingness compared to the regular staffs. (Section 5.6.1.3) the staffs at the local office are not recruited by NLCS- they are elected by the people of the village. The staffs at the local office are less qualified and also lacked knowledge on e-Sakor. The past unpleasant experience of not providing sufficient attention to the landowners' complaint have instigated distrust in some of the landowners. The regions with high developmental activities received the high land transactions along with regions with favourable geographical conditions and also the landowners in these places are more concerned towards their land (section 5.7.2).

Objective three: *To identify main areas of focus for further implementation of e-Sakor based on above analysis*
As per the thematic analysis framework approach (table 4), the main concerns were identified on basis of effects experienced by both the organisation and the rural landowners. The main concerns are i) Local level capacities ii) the Internet and power connection iii) Long-term dedicated staffs iv) Trust from the rural landowners on the registration process v) Geographical location and developmental activities are furthermore interconnected to each other (Section 5.7.2).

Hypothesis:
a) The perspective of rural landowners on the implementation and use of an e-government system, specifically e-Sakor, is different from the intra-organisational perspective.
From the study, it is found that most of the rural landowners' are unaware of the existence of e-Sakor and the existence of the system is only realised by few landowners. The main purpose of establishing e-Sakor by NLCS was transparency and swift land transactions but the landowners' perspective on the electronic system is contrary to the organisation's goal. The landowners see the system with lack of trust and slow transactions.

b) Prioritising the factors influencing e-government implementation 'e-Sakor' based on the intra-organisation and the rural landowners' perception can contribute to the successful implementation of e-Sakor.
Prioritising to spread the know-how of e-Sakor system among the rural landowners and improving the means to make e-Sakor system more efficient aiming to win the trust of the users by strengthening local level capacity, internet connectivity, staffs and allocating more staffs based on the region's land transaction activities can be vital in making e-Sakor system a success.

7.3. Recommendation
Through the thematic analysis framework approach of the rural landowners and the intra-organisations' perception, the study has identified several areas of concern at the intersection of organisational and landowners points of view, which affect the implementation of e-government. These provide the basis for recommendations below.

7.3.1. Further research recommendation
Further research may examine the e-Sakor system success model in the context of processing land transactions because it was found out through the study that the rural landowners were least concerned in knowing the system but they were more expressive on the security of their land transaction document and delivery time. Further, quantitative studies can be directed to estimate the system success based on the identified main concerns. Since decentralisation of decision making was of greater challenge which is still in progress to be implemented sooner, the further in-depth study could be suggested in this direction.

7.3.2. Recommendation on the main concerns of the result

7.3.2.1. Building local level capacities
It could be considered to shift focus from pure awareness raising to training at local level involving both the landowners and local level staff. The training needs to be aligned with technology implementation. NLCS can allocate the resources to train the rural landowners who are fully dependent on the local staffs to fill up their land transaction forms and a basic computer training seems necessitate. Furthermore,

NLCS could consider to come up with raising income from the e-Sakor service (considering the land transaction type) so it can be further implemented without external aid.

7.3.2.2. Re-gaining trust from the rural landowners

Aside from targeting to achieve all the aims and objectives of e-Sakor- the NLCS could put effort towards building trust for the landowners. Achieving a trust relationship first could help attain any further implementation. Trust and confidence need to be developed over time, these feelings grow with positive experiences (Gassert, 2004). The inclusion of landowners in any governmental initiatives could help understand the feedback/drawbacks of the system and services. This study has shown that NLCS could consider in employing long terms staffs to take the responsibilities when it comes to direct contact with the landowners because it increases trust and allows staff to understand both organisational and landowners concerns and translate between these.

7.3.2.3. Human resource capacity building

It is essential for recognising staffs for their outstanding work and fairly rewarding them. Proper policies for rewarding the deserving staffs with higher workload could be considered by NLCS. This is mainly to avoid one-sidedness between the regular and contract staff. Keeping in mind to provide a fair opportunity to the staffs, NLCS could consider providing often training to the staff. Training for self-development and to motivate the staffs (contract and regular) towards their work in order for them to perform better.

7.3.2.4. Decentralisation of decision making

Bearing in mind that NLCS has no control over the poor internet connectivity and also that some local areas have not received electricity and internet connection; NLCS could instead concentrate on what is in their authority to deliver undisrupted service to the landowners by improving the identified main concerns. For instance, building local capacities and landowners' trust by assuring deliverance of services on time to alleviate worries on part of landowners. The current plan of NLCS 'SMS alert' for landowners to inform and be informed of any changes in the issuance date could be beneficial.

Furthermore, NLCS could also consider working together with other government bodies in increasing the internet connectivity and electricity in remote areas. On the other hand, for the local areas without electricity and internet, NLCS staffs mainly at the local office could consider providing door to door service for the needy landowners.

7.3.2.5. Geographic location and development

It is observed that regions with development activities and regions with a high value of the land experience high volume of transactions. Therefore, NLCS can deploy more staffs in this regions to ease the transaction process and build trust with the public. This location with a high volume of rural landowners could also be designed as a strategic point for sensitising the users about the e-Sakor system. This location could provide platforms for high interaction between the user and NLCS and save huge financial resources for the organisation.

LIST OF REFERENCES

ADB. (2015). *Rural Renewable Energy Development Project: Sector Assessment (Summary): Energy*. Thimphu, Bhutan. Retrieved from https://www.adb.org/projects/documents

Al-Kaabi, R. (2010). Secure and failure factors of e-government projects implementation in developing country: A study on the implementation of Kingdom of Bahrain. *World Academy of Science, Engineering and Technology*, *4*(6), 659–662. Retrieved from http://www.waset.org/publications/13194

Al-Shboul, M., Rababah, O., Al-Shboul, M., Ghnemat, R., & Al-Saqqa, S. (2014). Challenges and factors affecting the implementation of e-government in Jordan. *Journal of Software Engineering and Applications*, *7*(13), 1111–1127. http://doi.org/10.4236/jsea.2014.713098

Almarabeh, T., & AbuAli, A. (2010). A general framework for e-government: definition maturity challenges, opportunities, and success. *European Journal of Scientific Research*, *39*(1), 29–42. Retrieved from http://www.eurojournals.com/ejsr.htm

Alshehri, M. A., & Drew, S. (2010). Implementation of e-government: Advantages and Challenges. In *International Conference E-Activity and Leading Technologies 2010* (pp. 79–86). Brisbane, Australia: Griffith University.

Andersen, K. V. (2006). e-Government: Five Key challenges for management. *Electronic Journal of E-Government*, *4*(1), 1–8.

Antonioni, D. (1999). What motivates Middle Managers. In *Third annual applied ergonomics conference* (Vol. 92, pp. 26–30). Los Angeles, California.

Asgarkhani, M. (2005). The Effectiveness of e-Service in Local Government : A Case Study. *The Electronic Journal of E-Government*, *3*(4), 157–166.

Baguma, R., & Lubega, J. (2013). Factors for success and failure of e-government Projects : The case of E-government projects in Uganda, 1–4. http://doi.org/10.1145/2591888.2591921

BMT. (2016). Bhutan Majestic Travel. Retrieved August 10, 2016, from http://www.bhutanmajestictravel.com/

BPC. (2015). *Annual Report 2015*. Thimphu, Bhutan. Retrieved from http://www.bpc.bt/wp-content/uploads/2016/06/Final-BPC-Report-2015.pdf

Braccini, A. M., Marturano, A., & Atri, A. D. (2011). Emerging Themes in Information Systems and Organization Studies. *Information Systems*, (January 2017), 243–253. http://doi.org/10.1007/978-3-7908-2739-2

Bryman, A. (2012). *Social Research Methods* (fourth edi). New York: Oxford University Press.

Bwalya, K. J. (2009). Factors affecting Adoption of e-Government in Zambia. *The Electronic Journal of Information Systems in Developing Countries*, *38*(4), 1–13.

Ciborra, C., & Navarra, D. D. (2003). Good governance and development aid: Risks and challenges of e-government in Jordan. *IFIP Advances in Information and Communication Technology*, *126*(July), 387–402. http://doi.org/10.1007/978-0-387-35695-2

Dada, D. (2006). The failure of e-government in developing countries: a lterature review. *Electronic Journal of Information Systems in Developing Countries*, *26*(7), 1–10.

Dardha, V., & Ndou,). (2004). E – Government for Developing Countries: Opportunities and Challenges. *The Electronic Journal on Information Systems in Developing Countries*, *18*(1), 1–24.

Dorji, L. (2015). *The Impact of the Internet on Academic Performance of the students at the tertiary level of Education in Bhutan*. Royal University of Bhutan, Thimphu, Bhutan.

Ebrahim, Z., & Irani, Z. (2005). E-government adoption: architecture and barriers. *Business Process Management Journal*, *11*(5), 589–611. http://doi.org/10.1108/14637150510619902

Eigeman, J., Twaalfhoven, M., & Zaal, J. (2007). Service Delivery, a Challenge for Local Governments. *LOGO East Programme*, 48. Retrieved from http://www.vng-international.nl/wp-content/uploads/2015/06/Service_Delivery_challenge_local_goverments.pdf

Gassert, H. (2004). *How to make citizens trust e-government*. Fribourg, Switzerland. Retrieved from http://diuf.unifr.ch/is/studentprojects/pdf/reports/eGov_WS03_How_to_Make_Citizens_Trust_E-Government_(HannesGassert).pdf

Gottschalk, P., & Solli-Sæther, H. (2009). *E-Government Interoperability and Information Resource Integration: Frameworks for Aligned Development*. Hershey, Newyork: PA: IGI Global. http://doi.org/10.4018/978-1-60566-648-8

Gurung, S., Dangol, S., & Bhatta, G. P. (2015). E-Governance for an Effective and Efficient Service : *Case Study on E- Land Administration Services in South East Asia*, (1), 1–9. Retrieved from

http://www.workshopnepal2015.com.np/pdf/full paper/Sarita_Susheel_Ganesh.pdf
Heeks, R. (2002). Information systems and developing countries: failure, success, and local improvisations. *Information Society*, *18*(August), 101–112. http://doi.org/10.1080/01972240290075039
Heeks, R. (2003). Summary for Policymakers. In Intergovernmental Panel on Climate Change (Ed.), *Climate Change 2013 - The Physical Science Basis* (pp. 1–30). Cambridge: Cambridge University Press. http://doi.org/10.1017/CBO9781107415324.004
HMLR. (2001). *Land Registration for the twenty-first century A Conveyancing Revolution*. *Law Commission and HM Land Registry*. London, United Kingdom. Retrieved from http://www.lawcom.gov.uk/wp-content/uploads/2015/04/Lc271.pdf
Hossan, C. G. H. wahid M. . K. I. (2006). Success and Failure Factors for e-Government projects implementation in developing countries : A study on the perception of government officials of Bangladesh. In *In Proceedings of the 2nd European Conference on Mobile Government, Mobile Government Consortium International.* (p. 10).
Ibrahim and Zakaria. (2015). Towards the Development of an Adoption Model for E-Government Services in Developing Countries. *Pacific Asia Conference on Information Systems*, (Paper 137).
J. Nugroho. (2014). Effectiveness of e-government implementation for regional competitivenes in developing countries: case study of indonesia.
Jaeger, P. T., & Thompson, K. M. (2003). E-government around the world: Lessons, challenges, and future directions. *Government Information Quarterly*, *20*(4), 389–394. http://doi.org/10.1016/j.giq.2003.08.001
K.Boersma, A.Meijer, P. W. (2009). *ICTs , Citizens and Governance : After the Hype. Innovation and the Public Sector* (Vol. 14). IOS Press.
Kaur, R. (2006). *Malaysian e-Government Implementation Framework*. *Masters of Computer Science*. University of Malaya Associate.
Li, F. (2003). Implementing E-Government Strategy in Scotland: Current Situation and Emerging Issues. *Journal of Electronic Commerce in Organizations*, *1*(2), 44–65.
Lynch, G. (2008). *Sampling*. Kent, United Kingdom. Retrieved from https://www.kent.ac.uk/religionmethods/documents/Sampling.pdf
Marshall, S., & Taylor, W. (2015). Editorial: ICT in education: Innovation, implementation, perceptions and experiences. *International Journal of Education and Development Using Information and Communication Technology*, *11*(1), 2–3.
Melin, U., & Axelsson, K. (2009). Managing e-service development – comparing two e-government case studies. *Transforming Government: People, Process and Policy*, *3*(2008), 248–270. http://doi.org/10.1108/17506160910979351
MOIC. (2014). *Bhutan e-Government Master Plan*. Thimphu, Bhutan. Retrieved from http://www.dit.gov.bt/sites/default/files/bhutan_e_gov_master_plan_14953.pdf
MOIC. (2016). *Annual Info-Comm and Transport Statistical Bulletin*. *7th Edition,2016*. Thimphu, Bhutan. Retrieved from www.moic.gov.bt/wp-content/uploads/2016/05/2016.pdf
Nabafu, R., & Maiga, G. (2012). A Model of Success Factors for Implementing Local E-government in Uganda. *Electronic Journal of Electronic Government*, *10*(1), 31–46.
Nkohkwo, Q. N., & Islam, M. S. (2013). Challenges to the Successful Implementation of e-Government Initiatives in Sub-Saharan Africa : A Literature Review. *Electronic Journal of E-Government*, *11*(2), 253–267.
NLC. (2015). National Land Commission. Retrieved July 13, 2016, from http://www.nlcs.gov.bt
NLCS. (2007). *The Land Act Of Bhutan. National Land Commission*. Thimphu, Bhutan: NLCS press.
NLCS. (2016). Selection Result. Retrieved January 5, 2017, from http://www.nlcs.gov.bt/wp-content/uploads/2016/12/SELECTION-RESULT-for-Land-Inspector.pdf
OECD. (2003a). *OECD E-Government Flagship Report "The E-Government Imperative,."* Paris, France. Retrieved from http://www.oecd.org/officialdocuments/publicdisplaydocumentpdf
OECD. (2003b). *The Case for E-Government : Excerpts from the OECD Report The E-Government Imperative*. *OECD Journal on Budgeting* (Vol. 3).
Organização das Nações unidas. (2002). Bridging the digital divide. *Materials Today*, *5*(6), 20. http://doi.org/10.1016/S1369-7021(02)00629-6
Orlikowski, W. J., & Robey, D. (1991). Information Technology and the Structuring of Organisations. *Information Systems Research*, *2*(2), 143–169. http://doi.org/10.1287/isre.2.2.143
Oudshoorn, N., & Pinch, T. (2003). How Users and Non-Users Matter. In *How users matter : the co-construction of users and technologies* (Vol. 8, pp. 1–25). Cambridge, Massachusetts: MIT Press.

Parent, M., Vandebeek, C. A., & Gemino, A. C. (2005). Building citizen trust through e-government. *Government Information Quarterly*, *22*(4), 720–736. http://doi.org/10.1016/j.giq.2005.10.001

Pariyar, M. P. (2007). E-government initiatives in Nepal. In *Proceedings of the 1st international conference on Theory and practice of electronic governance - ICEGOV '07* (Vol. 15, p. 280). New York, New York, USA: ACM Press. http://doi.org/10.1145/1328057.1328115

Peterson, S. B. (1998). Saints, demons, wizards and systems: why information technology reforms fail or underperform in public bureaucracies in Africa. *Public Administration and Development*, *18*(1), 37–60.

RCSC. (2010). Civil Service act of Bhutan. Retrieved January 5, 2017, from http://www.rcsc.gov.bt/wp-content/uploads/2014/government_rules/CS_ACT2010.pdf

Richard, O. O. (2014). *Evaluating the implementation of e-government in developing countries: The case of Nigeria*. Brunel University. Retrieved from http://bura.brunel.ac.uk/bitstream/2438/8751/1/FulltextThesis.pdf

Ronaghan, S. A. (2002). *Benchmarking E-government : A Global Perspective*. New York, NY: U.N. Publications. Retrieved from https://publicadministration.un.org/egovkb/Portals/egovkb/Documents/un/English.pdf

Sambuu, U., Tudevdagva, U., & Erdene, G. (2008). e-governance initiatives in Mongolia. In *Proceedings of the 2nd International Conference on Theory and Practice of Electronic Governance - ICEGOV '08* (p. 474). New York, New York, USA: ACM Press. http://doi.org/10.1145/1509096.1509199

Shackleton, P., & Dawson, L. (2007). Doing it tough: factors impacting on local e-Government maturity. In *20th Bled e-Conference e-Mergence: Merging and Emerging Technologies, Processes, and Institutions* (pp. 713–727).

Signore, O., Chesi, F., & Pallotti, M. (2005). E-Government : Challenges and Opportunities. In *Telematica* (Vol. 1, pp. 1–16). Retrieved from http://www.w3c.it/talks/2005/cmg2005Italy/

Silcock, R. (2001). What is E-government. *Parliamentary Affairs*, *54*(1), 88–101. http://doi.org/10.1093/pa/54.1.88

Stefanie, A., & Claudio, C. (2011). *The economic and social impacts of e-government*. University of Fribourg, Fribourg, Switzerland. Retrieved from https://diuf.unifr.ch/main/is/student-projects/thesis/economic-and-social-impacts-egovernment

Tassabehji, R., Elliman, T., & Mellor, J. (2007). Generating Citizen Trust in E-Government Security: Challenging Perceptions. *International Journal of Cases on Electronic Commerce*, *3*(3), 1–17. http://doi.org/10.4018/jcec.2007070101

Teo, T. S. H., Srivastava, S. C., & Jiang, L. (2009). Trust and Electronic Government Success: An Empirical Study. *Journal of Management Information Systems*, *25*(3), 99–132. http://doi.org/10.2753/MIS0742-1222250303

Tobergte, D. R., & Curtis, S. (2013). Digital Governance Success Factors and Barriers To Success In Prague. *Journal of Chemical Information and Modeling*, *53*(9), 1–22. http://doi.org/10.1017/CBO9781107415324.004

Tobgay, S., & Wangmo, K. (2008). Can ICT (Internet) overcome the natural geographical barriers of Bhutan in developing the nation ? *International Journal of Education and Development Using ICT*, *4*(4), 148–158.

Tuladhar, A. M. (2003). Re-engineering Cadastre and Land Registration Systems and Business Opportunities. In *Standards and Interoperability* (pp. 1–11). Paris, France.

Tuladhar, A. M. (2004). *Parcel-based Geo-Information System: Concepts and Guidelines*. ITC, Enschede.

Udo, G. J. (2001). Privacy and security concerns as major barriers for e-commerce: a survey study. *Information Management & Computer Security*, *9*(4), 165–174.

Working Group. (2002). *Roadmap for E-government in the Developing World: 10 Questions E-Government Leaders Should Ask Themselves*. Los Angeles. Retrieved from http://unpan1.un.org/intradoc/groups/public/documents/apcity/unpan005030.pdf

World Bank. (2015). Data. Retrieved December 31, 2016, from http://data.worldbank.org/indicator/IT.NET.USER.P2

World Bank. (2016a). Doing Business. Retrieved July 16, 2016, from http://www.doingbusiness.org/data/exploreeconomies/bhutan/#registering-property

World Bank. (2016b). E-government. Retrieved January 17, 2017, from http://www.worldbank.org/en/topic/ict/brief/e-government

APPENDICIES

ILLUSTRATION ON THE FIELD WORK IN TRONGSA-BHUTAN (26-09-2016 till 14-10-2016)

Photo 1

The Trongsa regional office is located inside the Trongsa

Photo 2

Traditional Bhutanese house are mostly found in rural part of Bhutan

Photo 3

Langthil gewog/local office

Photo 4

Infrastructures at the local office

Photo 5

Landowners interviewed at local office

Photo 6

Landowners interviewed at regional office

Photo 7

Landowners interviewed at Headquarter

Photo 8

Glimpse of interviews conducted through snowballing

Photo 9

Shadowing of rural landowner and Geydrung at the local office while processing land transaction

Photo 10

Glimpse of road condition while travelling to the local offices (Dragteng and Langthil) from regional office.