RELATIONSHIP BETWEEN PEOPLE'S MULTIPARTY DEMOCRACY AND NEPALESE LOCAL GOVERNMENT EFFICIENCY

A Thesis

Submitted to the Central Department of Economics,

Faculty of Humanities and Social Sciences,

Tribhuvan University, Kirtipur, Kathmandu, Nepal,

In partial fulfillment of the Requirements

for the Degree of

MASTER OF ARTS

In

ECONOMICS

By

PREM KARKI

Roll No: 37/2075

T.U. Regd. No: 7-2-39-480-2014

Central Department of Economics

Kirtipur, Kathmandu, Nepal

October, 2023

DECLARATION

I, PREM KARKI, declare that this thesis entitled “RELATIONSHIP BETWEEN PEOPLE'S MULTIPARTY DEMOCRACY AND NEPALESE LOCAL GOVERNMENT EFFICIENCY" submitted to Central Department of Economics is my own original work unless otherwise indicated or acknowledged in the thesis. The thesis does not contain materials which has been accepted or submitted for any other degree at the University or other institution. All sources of information have been specifically acknowledged by reference to the author(s) or institution(s).

Prem Karki

Roll No: 37/075

Regd. No: 7-2-39-480-2014

Central Department of Economics

Tribhuvan University,

Kirtipur, Kathmandu,

ACKNOWLEDGEMENT

I would like to express my special thanks of gratitude to all my faculties, especially to my supervisor, Head of the Department Prof. Dr. Shiva Raj Adhikari sir for continuous support and encouragement, which helped me a lot in drafting this thesis entitled “RELATIONSHIP BETWEEN PEOPLE'S MULTIPARTY DEMOCRACY AND NEPALESE LOCAL GOVERNMENT EFFICIENCY”.

I would also like to acknowledge the financial support provided by Madan Bhandari Foundation, which played a crucial role in the completion on my thesis. Lastly, I would like to express my appreciation to my friends and family for all their support and encouragement. This thesis is designed following the formats and guidelines produced by Central Department of Economics (CEDECON). I am fully liable for any discrepancy as well as errors and mistakes found in this thesis.

Prem Karki

Roll No: 37/075

Regd. No: 7-2-39-480-2014

Central Department of Economics

Tribhuvan University,

Kirtipur, Kathmandu, Nepal

ABSTRACT

This research attempts to analyze the economic aspect of People's Multiparty Democracy (PMD) for the local level government using hermeneutic and narrative approach. Additionally, efficiency scores of 716 Nepalese local government have been computed using non-parametric approach (DEA method) for the year 2078 BS. Finally, the study has examined the impact of political ideology, political competition and people's participation on local government efficiency using OLS and bootstrap truncated regression analysis.

PMD on local level has emphasized on decentralization and fiscal federalism, planned system, people's participation, political competition, mixed system, infrastructure, and institutionalization. The result shows that political ideology have no significant difference on local government efficiency, whereas there is positive association of political competition and people's participation with local government efficiency.

Keywords: *People's Multiparty Democracy (PMD), Hermeneutic, local level efficiency, non-parametric, bootstrap truncated regression*

TABLE OF CONTENTS

Page No.

DECLARATION ..... **i**
LETTER OF RECOMMENDATION ..... **ii**
APPROVAL LETTER ..... **iii**
ACKNOWLEDGEMENT ..... **iv**
ABSTRACT ..... **v**
TABLE OF CONTENT ..... **vi**
LIST OF TABLES ..... **viii**
LIST OF FIGURES ..... **ix**
LIST OF ABBREVIATIONS ..... **x**
CHAPTER I INTRODUCTION **1**
1.1 Introduction 1
1.2 Statement of the Problem 3
1.3 Research Question 4
1.4 Objectives 4
1.5 Significance of the study 5
1.6 Scope and Limitation of the study 5
1.7 Organization of the study 5
CHAPTER II REVIEW OF LITERATURE **6**
2.1. Introduction 6
2.2 Theoretical review 6
2.3 Empirical Review 8
2.4 Research Gap 11
2.5 Local Government in Nepal: Political and Fiscal Decentralization 11
CHAPTER III RESEARCH METHODOLOGY **13**
3.1 Introduction 13
3.2 Research Design 13
3.3 Conceptual Framework 13
3.4 Data 14
3.5 Tools of Analysis/Empirical Model 15
3.6 Operational definition of variables 19

CHAPTER IV RESULTS AND DISCUSSION 23
4.1 Introduction 23
4.2 Economic aspect of PMD.....23
4.3 Descriptive statistics.....27
4.3 Results 31
4.4 Discussion 37
CHAPTER V SUMMARY AND CONCLUSIONS.....40
5.1 Introduction 40
5.2 Summary 40
5.3 Conclusion.....41
REFERENCES

LIST OF TABLES

Table 3.1: Distribution of Municipality according to administrative classification...15

Table 4.1: Descriptive Statistis of Input and Output Variables……..28

Table 4.2: Descriptive Statistics of Environmental Variables……29

Table 4.3: Return to Scale Test……...32

Table 4.4: Descriptive Statistics of Efficiency scores…….32

Table 4.5: Descriptive Statistics of VRS Bias corrected efficiency scores…….33

Table 4.6: OLS and Truncated Regression Results…….36

LIST OF FIGURES

Figure 3.1: Hermenuetic Cycle…...…….13

Figure 3.2: Conceptual Framework……..14

Figure 4.1: Political competition (Number of candidates)…….. 30

Figure 4.2: Political concentration and Voters Turnout……...30

Figure 4.3: Distribution of Efficiency scores based on Political Ideology……..34

LIST OF ABBREVIATIONS

BC:	Bias Corrected
COLS:	Corrected Ordinary Least Square
CPN:	Communist Party of Nepal
CRS:	Constant Return to Scale
DEA:	Data Envelopment Analysis
FDH:	Free Disposal Hull
HHI:	Herfindahl Index
LGOA:	Local government Operation Ac
MC:	Maoist Center
NC:	Nepali Congress
OLS:	Ordinary Least Square
PMD:	Peoples Multiparty Democracy
SFA:	Stochastic Frontier Analysis
UML:	Unified Marxist-Leninist
VRS:	Variable Return to Scale

CHAPTER I

INTRODUCTION

1.1 Introduction

Local governments are the closest units of government which institutionalize the governance system, creates environment to promote domestic values, and promotes public participation in decision making process with accelerating economic development, enhancing people's capacity, and influence for responsive governance (Acharya, 2018). Local government particularly means the participation of stakeholders in their local development (Kharel, 2019). Local government has played important role in providing public goods and services to citizens, and there is higher pressure to meet the standard demanded by general public in terms of quality and quantity (Cordero et al., 2017).

The Federal Democratic Republic Constitution of Nepal 2072 BS has moved Nepal towards fiscal federalism model with the political structure of three layers of governance namely Central, Province, and Local, based on the recommendation made by the Committee on Natural Resources, Economic Rights and Revenue Allocation. Historically, the attempt to decentralization starts in 1954 AD through the creation of local government called panchayat (Prasad, 2015). The Local Government Operation Act 2017 (LGOA), is implemented to run local government effectively, which has many provisions such as plan formulation and implementation, judicial work, and financial jurisdictions (Chaudhary, 2019).

People's Multiparty Democracy (PMD) is accepted as a political-ideological program and has become one of the guiding principles for the Nepalese communist movement. It is viewed as a creative interpretation of Marxism that imbibes the unique realities of Nepalese society and their democratic aspirations. A pluralistic open society with multi-party competitive system, ruled based on supremacy of the law, and the protection of human rights are main features of PMD. It has promoted towards a fully competitive system, where peoples can freely express their views and have the opportunity for constructive criticism. PMD has emphasized mostly on political competition and people's participation on each layer of government formation and their decision-making for their own wellbeing.

Competition in economics is taken as competition, whereas competition in politics is more about conflict among different groups. Rubin (2014) defines political competition as conflict among individuals or groups over the control of resources. He also pointed political competition as potent force driving the development of social behavior and human brain more than economic scarcity. Likewise, Winer and Ferris (2022) also argued that political competition as conflict among parties or coalitions over the control of the government and the resources it commands. Based on the election outcome, it imbibes a zero-sum game character where a party or coalition wins and others lose.

PMD has defined political competition as conflict between various classes for control over the means of production. Each class in a society have their own class interests, and they want to protest their respective class interests. PMD has advocated the concept of fully competitive political structure in which each class has a constitutional right to protect their respective class interests. It has also explained political competition as a means to abolish exploitation, eliminate conventional production relationships, stops the exploitation of international capitalist monopolies, eradicate poverty, and create a progressive society. PMD have mostly emphasized on people's participation in democratic practices and decision-making. Political competition leads to social welfare maximization through greater allocation of resources for the common good.

Economic theory agrees that economic competition leads to improved economic welfare, that is higher quantity of goods can be bought at lower prices (Rezki, 2022). Likewise, most scholars in political science believe that a lack of political competition induces rent extraction by politicians and allows them to act narrowly (or selfishly) without jeopardizing their re-election odds (Ashworth et al., 2014). Politicians have an incentive to get re-elected, and when political competition and electoral participation is higher, they face the credible threat of not being re-elected, so they will behave in a way to convince citizens (Ariza Marín et al., 2021).

Many researchers (e.g., Ariza Marín et al., 2021; Ashworth et al., 2014; Helland & Sørensen, 2015; Rezki, 2022) have tried to establish empirical relationship between political competition, electoral participation and government performance. Most of the previous literature have used parametric and non-parametric approaches based on cross-sectional framework (Pacheco et al., 2020). Those studies have shown mixed

results regarding the impact of political competition and electoral participation on local government performance. The performance of local government is measured in term of efficiency in resource allocation. Efficiency basically means how well an organization uses its resources and the degree to which it achieves its goal (Plaček et al., 2021). A local government's performance can be evaluated based on the resources it uses and the results it produces. Resource allocation decision made by local government is influenced by the ideological orientation of elected representatives (Titl & De Witte, 2022).

There were 121 registered political parties and some independent candidates competing in the local election in 2074 BS, according to the party list published by Election Commission of Nepal. Political parties in Nepal based on their ideological stance are often categorized as: right, right-wing, central-right, central, central-left, left-wing, and far-left. The local and national election results from various period shows the dominance of three national parties CPN (UML), NC, and CPN (MC). People's Multiparty Democracy (PMD) is the political ideology followed by largest communist party of Nepal CPN(UML).

Democracy requires a strong correspondence between popular preferences, ideological orientation of elected representatives, and policy implemented by government. Efficient governance of local government requires an appropriate economic policy based on their ideological belief. This research tries to analyze the economic aspect of PMD for local level governments and empirically analyze it's impact on their performance.

1.2 Statement of the Problem

Local governments bring public service closer to the people, provides move opportunity to actively participate in decision making process, enhance democracy and liberty, and helps in protection of rights and values of minority people (Prasad, 2015). There are 753 local level administration in Nepal, most of them are characterized by unique geographical, cultural, ethnic, linguistic, and religious distinction. Political parties compete either forming a coalition or single based on their ideologies and political-economic objectives. Most of the political parties have their economic model for national level, but there is lack of comprehensive economic framework for local level. Given that, local level government are autonomous in

functioning and has more direct impact on the people, a clear and concrete economic model is crucial at local level to enhance efficiency and effectiveness.

PMD is political ideology adherend by CPN(UML) one of the Nepal's largest communist parties. This thesis aims to study the economic aspect of PMD for local level government. PMD has preliminarily emphasized on political competition and people's participation. Competition between political parties is crucial for the local government effectiveness. Each political party has objective to extent its tenure in the office in every election, which depends on upon their performance as per people's preference. Performance of political parties may differ based on their political ideology, political structure, and political environment in each local level government. Political environment refers to competition and people's participation.

The aim of this research is to analyze the impact of political competition and people participation in the performance of local government. Additionally, the study has examined economic aspect of PMD within the context of local level government.

1.3 Research Question

The purpose of the study is to analyze the economic aspects of people's multiparty democracy (PMD) based on local level governments. This research will also be conducted to determine the impact of political competition and people's participation on the performance of local governments. The research questions of the study are presented as following,

i. What are the economic aspects of People's Multiparty Democracy (PMD)?
ii. How does political competition and people's participation impact the performance of local governments?

1.4 Objectives

The general objective of this thesis is to analyze the economic aspect of People's Multiparty Democracy (PMD) in the context of local governments. Additionally, The study has computed the performance of local governments using DEA and analyze its determining factors.

Following are the specific objectives of the study:

i. To analyze the economic aspect of the People's Multiparty Democracy (PMD).
ii. To compute the efficiency of local level governments.

iii. To examine the impact of political competition and people's participation on performance of local governments.

1.5 Significance of the study

The purpose of the study is to analyze the economic aspects of People's Multiparty Democracy (PMD). The study seeks to calculate efficiency of local governments and aims to establish its relationship with political ideology, political competition, and people's participation. The study also adds to the existing methodological body of knowledge on computing local government efficiency using DEA. The study has used cross-sectional data from local government which aids in understanding of political-economic environment at each Nepalese local government.

Furthermore, the study's finding will be useful to decision makers and policymakers due to the use of sizable sample size and sound methodology. Additionally, the study's finding is beneficial to scholars, researchers, and all other stakeholders.

1.6 Scope and Limitation of the study

The study intended to analyze the economic aspect of people's multiparty democracy and also examine empirically. However, this study acknowledges to significance limitations as presented below.

i. The study utilizes cross-sectional data, it is unable to capture dynamic aspect of the variables.
ii. Because of data limitation on patrician bias and electoral volatility, the analysis has employed political competition for a certain point, which cannot capture political competition over the period of time.
iii. As It is difficult to identify the specific public goods and services provided by each local governments, the study has only considered general public goods and services provided by every local government.

1.7 Organization of the study

The study is divided into five chapters: Chapter I covers the introduction of the study, and Chapter II covers literature reviews of previous studies. Research methodology is included in Chapter III; Chapter IV deals with findings and discussions; and finally, summary and conclusion are presented in Chapter V.

CHAPTER II

REVIEW OF LITERATURE

2.1. Introduction

In this chapter, I have scrutinized the existing literatures in the field of study from both a theoretical and methodological perspective, along with their respective findings. This chapter is organized into three sections theoretical review, empirical review, and identification of research gaps. In the theoretical review, key theories relevant to the study has been included. Whereas in an empirical review, methodological approaches employed in previous literature and and their respective findings are evaluated. Finally, the chapter is concluded by incorporating the research gap from existing literature.

2.2 Theoretical review

2.2.1 Hermeneutics

Hermeneutics is conceived as a philosophy of understanding, and art and science of textual interpretation (Wiklund et al., 2002). It can simply define as method of finding meaning in the written world, as the term *hermeneutics* was derived from the two words, Greek verb *hermeneuein* meaning interpret and the noun *hermeneia* meaning interpretation. Historically, hermeneutics was associated with interpretation of religious texts, where religious leaders sought to identify literal or authentic meaning of the religious texts (Byrne, 2001). Hermeneutics as a science of interpretation has two areas of interest, works of Ricoeur (1974, 1991, 1995), Heidegger (1962) and Gadamer (1989) are emphasized towards nature of understanding, while Ricoeur (1991, 1995) and Gadamer (1989) focus on textual understanding (Wiklund et al., 2002).

The Heidegger philosophy of understanding was initially aligned with Edmund Husserl (1859-1938) which disassociated later, Husserl philosophy has taken human consciousness as separate entity and it tries to understand worldly phenomena, but in Heidegger's philosophy consciousness is inseparable from the world and it consist of historical lived experience (Nigar, 2020). Heidegger pointed the understanding depends upon pre-understanding, awareness, and constant interpretation. From Heidegger, hermeneutics tun which is regarded as art of interpterion was extended by

Hans-Georg Gadamer (Nigar, 2020). Gadamer considered interpretation as a fusion of horizons, a dialectical interaction between the pre-understanding of the interpreter and the meaning of text (Alsaigh & Coyne, 2021). Interpretation in according to Ricouer (1991, 1995) is not to understand intention of narrator, but to understand the meaning of test itself, understanding a narrative is to follow its movement from what a text says to what it talks about (Wiklund et al., 2002). Gadamer and Ricouer have proposed remarkably similar hermeneutic approaches to interpretation of text, as they are both started from insight of Husserl and Heidegger, but have some epistemological differences (Bohorquez, 2010).

Ricouer's theory of interpretation recognized the inter-relationship between interpreter and interpretation, where the interpretation move forward from naïve understanding, for deeper understanding with interpreter understand part of the text in relation to whole and whole of the text in relation to its part text (the hermeneutic cycle) (Geanellos, 2000). Ricouer's theory of interpretation has two stages; first, explanation or what the text says; and second, understanding or what the text talks about. Explanation is directed towards internal relations of text, while understanding is grasping meaning of whole in relation to its parts (Geanellos, 2000).

There are four concept of hermeneutic which are understanding, responsibility of understanding, hermeneutic cycle, and rules of hermeneutics, where each concept are complementary during hermeneutic investigation (Vieira & De Queiroz, 2017). Kinsella (2006) have suggested to consider five characteristics while doing hermeneutic approach which are, seek understanding rather than explanation, acknowledge the situated location of interpretation, recognize the role of language and historicity in interpretation, view inquiry as conversation, and comfortable with ambiguity.

2.2.2 Efficiency

The concept of efficiency measure begins with Farrell (1957), who drew from the work of Debreu (1951) and Koopmans (1951), and defines a simple measure for firm efficiency which can be elaborated for multiple inputs (Coelli et al., 2005). Farrell's (1957) concept of efficiency contains two components: technical efficiency, which reflect ability of firm to maximize its output with given set of inputs, and allocative efficiency, which reflect ability of firm to utilize inputs in optimal proportional. When combined technical and allocative efficiency provide total economic efficiency also

called cost efficiency (Coelli et al., 2005). The concept of efficiency can be expressed as,

$$Efficiency = \frac{Output}{Input} \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (i)$$

Equation (i) shows the basic efficiency measure used in DEA model.

Efficiency can be distinguished into five different types: technical efficiency, allocation efficiency, cost efficiency, dynamic efficiency and scale efficiency (Fogarty & Mugera, 2013; Plaček et al., 2020).

i. Technical efficiency: ability to produce maximal output with given set of inputs under a given technology (Coelli et al., 2005; Fogarty & Mugera, 2013; Plaček et al., 2020).
ii. Allocation efficiency: ability to allocate resources in optimal proportion with given factor price, or allocation of resources for producing items most valuable to society (Fogarty & Mugera, 2013; Plaček et al., 2020).
iii. Cost efficiency: combination of above to efficiency (Fogarty & Mugera, 2013).
iv. Dynamic efficiency: use of resources efficiently over time (Fogarty & Mugera, 2013)
v. Scale efficiency: organization correct scale of operation (Fogarty & Mugera, 2013)

Measurement of efficiency depends upon the availability of data, technical efficiency requires data on inputs and output, whereas allocative efficiency requires data of input-output as well as their respective prices (Narbón-Perpiñá et al., 2017). It is difficult to compute price of goods and services delivered by public sector due to its non-market nature (Kalb et al., 2012). Hence, most of the literatures have studied using technical efficiency.

2.3 Empirical Review

Efficiency has been studied using frontier analysis after the concept of Farrell (1957), who established the hypothesis of convexity, free disposal of input and output, and proportionality (Bosch et al., 2012). Methods for studying efficiency can be distinguished into parametric and non-parametric approaches (Narbón-Perpiñá & De Witte, 2017). Data envelopment analysis (DEA, Charnes et al., 1978; Banker et al.,

1984), free disposal hull (FDH, Deprins et. al 1984), Order-m (Cazals et al., 2002) and bias-corrected DEA estimator (KSW, Kneip et al., 2008) are the most commonly used non-parametric approaches, whereas Corrected ordinary list square (COLS) and stochastic frontier analysis (SFA, Fan et al., 1996) are commonly used parametric approaches (Narbón-Perpiñá et al., 2020).Additionally, these methods can be classified as parametric-stochastic (COLS and SFA), nonparametric-deterministic (DEA and FDH), and nonparametric-stochastic (Order-m and order-α) (Krüger, 2012; Pevcin, 2014).

Existing literature on local government efficiency analysis can be categorized into two branches: individual service efficiency and global efficiency (Bonisch et al., 2011). In the study of individual service efficiency, the local government's provision of a specific service is analyzed. Some literatures on individual services include: waste collection (Benito et al., 2021; X. Fan et al., 2020; Guerrini, Carvalho, et al., 2017; Rogge & De Jaeger, 2012), water (Benito et al., 2019; Brettenny & Sharp, 2016; Martínez-Córdoba et al., 2020), energy efficiency (Romano, et al., 2017; Haider & Ahmad Bhat, 2018; Lin & Zhao, 2016; Wang & Wei, 2014), education (Cordero et al., 2018; D'Inverno et al., 2021; Da Cruz & Marques, 2014; Ferraro et al., 2021; Johnes & Virmani, 2020), transportation (Campos-Alba et al., 2020; Park & Kim, 2021), library (De Witte & Geys, 2013). While global efficiency examines the total services provided by local government, some literature on overall performance efficiency which are country specific, such as Australia (Fogarty & Mugera, 2013), Italy (lo Storto, 2016), Portugal (Cordero et al., 2017), Czech (Stastna & Gregor, 2011), Belgium (D'Inverno et al., 2022), USA (O'Loughlin & Wilson, 2021), Indonesia (Rambe et al., 2020), Chili (Pacheco et al., 2020), and for further inquiry a systematic literature review conducted by Narbón-Perpiñá & De Witte, (2017) can also be referenced.

Most of the research on local government efficiency has used nonparametric approaches (DEA or FDH) due to their greater flexibility and less restrictive assumptions (Cordero et al., 2017; Narbón-Perpiñá et al., 2017), absence of a prior specification for the functional form of the frontier (Stastna & Gregor, 2011), ability to easily handle multiple inputs and outputs (Ruggiero, 2007), and not require any statistical assumptions regarding data distribution, such as normality and heteroskedasticity (lo Storto, 2016).Traditional nonparametric approaches present

several drawbacks: they are sensitive to outliers and extrema values, difficult to make statistical interference, and deterministic in nature (Narbón-Perpiñá & De Witte, 2017). To overcome this problem, new nonparametric technique have been used, such as the bootstrap method (Simar & Wilson, 1998, 2000), "jackstrap" DEA or FDH (Sampaio De Sousa & Stošić, 2005), order-m (Cazals et al., 2002), and conditional frontier (Daraio & Simar, 2005).

Researchers are interested in knowing how external or environmental factors will influence the efficiency of local government. For which two-stage method is applied, where in the first stage efficiency is estimated and in the second stage the efficiency score estimated in the first stage is regressed with main covariate environmental variables (Cordero et al., 2017). Initially, conventional inference methods like Tobit or OLS (e.g., Afonso & Fernandes, 2005; Giménez et al., 2007; Loikkanen & Susiluoto, 2005) were used as estimation technique in the second stage. However, results obtained from the above methods are biased and inconsistent due to serial correlation among estimated efficiencies (Simar & Wilson, 2007, 2011b). For this problem, Simar and Wilson (2007) proposed two different methods: the truncated regression method and the bootstrap method, where maximum likelihood estimator is used for the consistent estimation of parameters (Cordero et al., 2017). Some papers (e.g., Bonisch et al., 2011; Bosch et al., 2012; Doumpos & Cohen, 2014; El Mehdi & Hafner, 2014; Fogarty & Mugera, 2013; lo Storto, 2016; Tran & Noguchi, 2020)have used the single or double bootstrap method suggested by Simar and Wilson(2007).Population density, political ideology, financial independence, political competition, commercial activities, voters turnout, financial resources, income per capita, and educational level of population are commonly used environmental variables whose association with performance shows mixed results from different literature (Da Cruz & Marques, 2014). But our focus will be mostly on political ideology, political competition, and people's participation.

Political ideologies are commonly distinguished into left-wing and right-wing by most of the literature. Empirical evidence on association of political ideology with local government shows mixed results (Narbón-Perpiñá & De Witte, 2017; Titl & De Witte, 2022). Studies like (e.g., Borge et al., 2008; Da Cruz & Marques, 2014; Helland &Sørensen, 2015; Kalb et al., 2012; Revelli & Tovmo, 2007) have shown negative association of left-wing parties and local government efficiency, whereas

(e.g. Andrews & Entwistle, 2015; Be Borger et al., 1994; De Borger & Kerstens, 1996a, 1996b; Geys et al., 2010) have shown positive association. While Some other studies like (Asatryan & De Witte, 2014; Cordero et al., 2017) have shown no significance influence of political ideology on local government efficiency.

Literature on the effect of political competition and people's participation has shown mixed evidence. Some results show a positive impact of political competition and voters turnout on the performance of local government (e.g., Ariza Marín et al., 2021; Ashworth et al., 2014; Rezki, 2022), while others did not found robust statistically significant relationship (e.g., Rattsø & Tovmo, 2002; Rodríguez Bolívar et al., 2018; Suzuki & Han, 2019), whereas some of the literature has found significantly negative association (e.g., Borge, 2005; Hagen & Vabo, 2005). Political fragmentation is mostly computed using Herfindahl index based on number of seats. Studies like (e.g., Doumpos & Cohen, 2014; Revelli & Tovmo, 2007; Stastna & Gregor, 2011) shows higher political concentration is associated with higher performance of local governments.

2.4 Research Gap

This research will contribute to close a gap in Nepalese political-economics literature. This study adds to the existing literature on calculating local government efficiency and analyzing its determinants. There has not been sufficient study on empirical efficiency analysis in the Nepalese local governments context. First, this research will add to the PMD's economic framework for local level. Additionally, this work will contribute to the literature on the empirical efficiency calculation of Nepalese local governments. Furthermore, it will aid in the examination of the impact of political competition, people's participation, and political ideology on the performance of Nepalese local governments. The effect of these determinants on the efficiency of local government has produced mixed outcomes. The research aims to add in the existing knowledge while taking the Nepalese context into consideration.

2.5 Local Government in Nepal: Political and Fiscal Decentralization

Since the declaration of the Nepalese constitution in 2015 AD, Nepal has shifted to fiscal federalism. There are three tires of government in Nepal: one central, seven provincial, and 753 local governments. As guaranteed by the constitution, each level of governments is autonomous and carries its own rights and duties. To successfully

operate local government, the Local Government Operation Act 2017 AD (LGOA) is in place, which includes creation and execution of plans for resources utilization, along with judicial and financial power. The primary focus of local government units is to provide public goods and services such as education, health, water, sanitation, waste management, sports, culture, etc.

Local governments in Nepal are formed of rural and municipal executive bodies. The executive body is headed by a chairperson in a rural municipality and a mayor in a municipality. The executive body also consist of vice a chairperson or deputy mayor, ward chairpersons, and ward members. They all are selected in a periodic election once every five years. Local governments in Nepal are classified into Rural municipality, municipality, sub-metropolitan, and metropolitan based on their resident population, level of development, available resources, etc., according to the Local Government Operation Act 2017 AD.

CHAPTER III

RESEARCH METHODOLOGY

3.1 Introduction

This chapter describes in detail about how the research work has been conducted to achieve the above objectives. This chapter includes research design, a conceptual framework, sources of data collection, and tools of analysis/empirical model.

3.2 Research Design

The research employes mixed approach, integrating both quantitative and qualitative methodologies to address the research questions. The selection of the study design and methodologies is based on considering underlying ontological and epistemological association of the research questions. The initial research question is addressed using interpretivism, employing hermeneutic and narration approach. While positivist research philosophy is embraced to compute efficiency score and to examine its determinants. The cross-sectional study design is formulated for econometric analysis.

3.3 Conceptual Framework

The conceptual frame is an indispensable part of research methodology which helps to clarify concept of the research. A clear conceptual frame will be beneficial for data collection, the formulation of research design, and econometric model development. It also helps to understand the relationship between different variables (Independent, Dependent, Controlled, moderator, mediator etc.,). For a clear understanding of concept of the present research, conceptual framework has been explained in the following figures. In which figure 1 shows the conceptual framework for hermeneutic cycle qualitative analysis, and figure 2 shows the conceptual framework for DEA analysis.

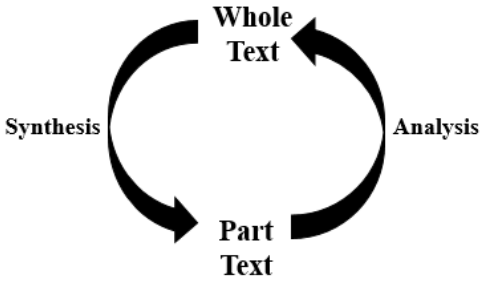


Figure 3.1: Hermeneutic Approach

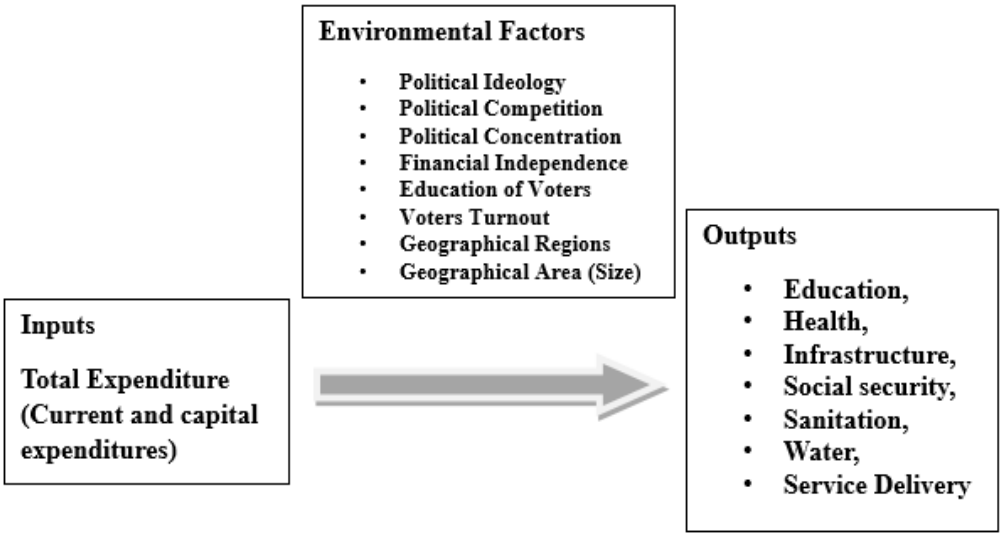


Figure 3.2: Conceptual Framework

3.4 Data

3.4.1 Sources of Data

The study is conducted using data collected from secondary sources. Initially, qualitative analysis involves the examination of series of books, specially "Madan Bhandari: Sankalit Rachanaharu", comprise of volume one to ten, which is published by Madan-Ashrit Smriti Pratishthan. These books are comprehensive compilation of Madhan Bhandari's most noteworthy works, interviews, and public speech.

The empirical analysis is conducted using data collected from reports published by Election commission for the 2074 BS local election, Audit Report of Local Government for the year 2078 BS, Constitutional documents of the CPN (UML), Election Manifesto of the CPN (UML).

3.4.2 Sampling

There are a total of 753 local governments, they are classified into seven administrative clusters, within which they are classified into three stratified groups: Rural-Municipality (Small), Municipality (Medium), and metropolitan/sub-metropolitan (Large).

The study has only considered rural municipalities (small) and municipalities (medium) from each administrative cluster. Seventeen metro/sub-metropolitan (large)

groups have been removed from the sample. A total of 716 sample were used in the first stage and 703 in the second stage of analysis due to data limitations.

Table 3.1: Distribution of Municipality according to administrative classification

Provinces	Small	Medium	Large	Total
Province 1	88	46	3	137
Madhesh	59	73	4	136
Bagmati	74	41	4	119
Gandaki	58	26	1	85
Lumbani	73	32	4	109
Karnali	54	25	0	79
Sudurpashim	54	33	1	88
Total	460	276	17	753

Note: Total number of Rural Municipality (Small), Municipality (Medium), and Metro/Sub-Metropolitan (large).

3.5 Tools of Analysis/Empirical Model

3.5.1 Descriptive Analysis

The study has performed descriptive analysis using mean, median, standard deviation, ratio graphs, etc. Descriptive analysis of different variable such as political ideology, political competition, political fragmentation, local resources, etc. has been conducted to demonstrate the political-economic environment of the local governments. Along with-it, descriptive statistics of input and output variables are also performed.

3.5.2 Econometric Analysis

For the calculation of efficiency, we have implemented input-oriented DEA method. We have used input-oriented method as local government has more control over inputs. DEA does not assume a production function, it simply assume that public good production technology is transformation of inputs into outputs (Titl & De Witte, 2022).

Let us assume a set of inputs be $X \in R_+^p$ which will be transformed into set of outputs $Y \in R_+^q$, then the feasible combination of (X, Y) can be defined as follows, using the notation as Titl & De Witte, (2022).

$$\Psi_{DEA} = \{(X, Y) \in R_+^{p+q} | \, XcanproduceY\} \dots\dots\dots (1)$$

The efficiency score for a region, characterized by Input X_0 and Output Y_0 defined by Farrell-Debreu.

$$\theta(X_0, Y_0) = inf\{\theta || \theta(X_0, Y_0) \in \Psi_{DEA}\} \dots\dots\dots\dots (2)$$

The efficiency of each local level is measured as the distance from the production frontier Ψ_{DEA}. $\theta \in (0,1)$, if 1 then local unit is considered efficient. For the construction of the frontierΨ_{DEA}, small free disposal convex set is used as.

$$\Psi_{DEA} = \left\{ \begin{array}{c} (X, Y) \in R_+^{p+q} | \; Y \leq \sum_{i=1}^{n} \gamma_i Y_i \; ; \; X \geq \sum_{i=1}^{n} \gamma_i X_i for(\gamma_1, \dots\dots., \gamma_n) \\ such that \sum_{i=1}^{n} \gamma_i \geq 1; \gamma_i \geq 0; i = 1, \dots\dots\dots, n \end{array} \right\} \dots\dots\dots.. (3)$$

Above equation (3) allows for calculation with constant return to scale (CRS) with the assumption that all local units are operating in their optimal. Whereas if we change $\sum_{i=1}^{n} \gamma_i \geq 1, \; to \sum_{i=1}^{n} \gamma_i = 1$, in equation (3), then it will be variable return to scale (VRS) with the assumption that some local units are not operating in their optimal or comparison will be with similar local units.

As Simar and Wilson, (2007) noted that DEA method is biased by construction, the true frontier is located under DEA estimated frontier. For that we have used bias corrected DEA estimator via bootstrapping method suggested by Simar and Wilson (1998). Before defining the bias corrected estimator of DEA efficiency score let us define bias of the estimator at point (x, y). Let us denote the estimator of DEA efficiency score $\theta(x, y)$ at point (x, y) by $\hat{\theta}^*(x, y)$.The computation of bias of $\hat{\theta}(X, Y)$ cannot be computed because of unavailability of sample distribution, and it's asymptotic approximation is too complicated to handle (El Mehdi & Hafner, 2014). Now the approximation of bias based on bootstrapping is given by.

$$\widehat{bias}^*(\hat{\theta}(x, y)) \approx \frac{1}{B} \sum_{b=1}^{B} \hat{\theta}_b^*(X, Y) - \hat{\theta}(X, Y) \dots\dots\dots.. (4)$$

Then, the bias corrected estimator is,

$$\theta_{bc}(X,Y) = \hat{\theta}(X,Y) - \widehat{bias}^{*}\left(\hat{\theta}(x,y)\right) \dots\dots\dots\dots\dots\dots (5)$$

The confidence interval of the efficiency sore are also computed using bootstrap method suggested by Daraio and Simar (2007). By definition, confidence interval of efficiency score at level $1-\alpha$, for all $\alpha \in [0,\ 1]$ is,

$$P\left(\hat{\theta}(X,Y) - a_{1-\frac{\alpha}{2}} \leq \theta(X,Y) \leq \hat{\theta}(X,Y) - a_{\frac{\alpha}{2}}\right) = 1-\alpha \dots\dots\dots (6)$$

The bootstrap method used for computation of confidence interval is basic method which automatically adjust bias (El Mehdi & Hafner, 2014). The bootstrap approximation of confidence interval for $\theta(X,Y)$ is given by,

$$P\left(\hat{\theta}(X,Y) - \hat{a}_{1-\frac{\alpha}{2}} \leq \theta(X,Y) \leq \hat{\theta}(X,Y) - \hat{a}_{\frac{\alpha}{2}}\right) \approx 1-\alpha \dots\dots\dots\dots (7)$$

Simar and Wilson (2000) shown that naïve bootstrap method describe above is inconsistent, which require smoothed version to be consistent for confidence interval. We have used smoothed bootstrap version available in FRAE (Frontier Efficiency Analysis with R), which is statistically consistent.

Testing returns to scale of the production model is done using three methods, we test constant return to scale (CRS) versus variable return to scale (VRS). Let us the production set Ψ_{DEA}as defined in equation (1),

$$\Psi_{DEA} = \left\{(X,Y) \in R_{+}^{p+q} \mid XcanproduceY\right\}$$

Then, to test the null hypothesis (H_0) that Ψ_{DEA} is CRS versus the alternative hypothesis (H_1) that Ψ_{DEA} is VRS, we first compute the efficiency score for the two case CRS and VRS denoted by $\hat{\theta}_{CRS}(X_i,Y_i)$and $\hat{\theta}_{VRS}(X_i,Y_i)$ respectively.

First, we compute the test statistics using S_1 method suggested by Simar and Wilson (2002),

$$S_1 = \frac{1}{n}\sum_{i=1}^{n}\frac{\hat{\theta}_{CRS,n}(X_i,Y_i)}{\hat{\theta}_{VRS,n}(X_i,Y_i)} \dots\dots\dots\dots\dots\dots\dots (8)$$

Again, we compute the test statistics using S_2 method suggested by Bogetoft and Otto (2011),

$$S_2 = \frac{\sum_{i=1}^{n} \hat{\theta}_{CRS,n}(X_i, Y_i)}{\sum_{i=1}^{n} \hat{\theta}_{VRS,n}(X_i, Y_i)} \ldots\ldots\ldots\ldots\ldots\ldots\ldots (9)$$

Finally, we compute the test statistics using S_3method suggested by Simar and Wilson (2011), which is modified version of S_1.

$$S_3 = \frac{1}{n}\sum_{i=1}^{n}\left[\frac{\hat{\theta}_{CRS,n}(X_i, Y_i)}{\hat{\theta}_{VRS,n}(X_i, Y_i)} - 1\right] \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (10)$$

In all the above methods we reject the null hypothesis (H_0) if the test statistics is less than the critical value at level $\alpha \in (0,1)$. Critical value is calculated using bootstrap approximation in above methods.

The impact of environmental variable on efficiency score of local government units is computed using truncated regression where maximum likelihood estimator is used and also by ordinary least square method (OLS).

$$\begin{aligned}\theta_{bc}(X,Y) = \beta_0 &+ \beta_1 Polit\_Comp + \beta_2 Polit\_Ideology + \beta_3 Polit\_conc \\ &+ \beta_4 VotersTurnout + \beta_5 Edu\_Popn + \beta_6 Revenue + \beta_7 Region \\ &+ \beta_8 Area + \varepsilon_i \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (11)\end{aligned}$$

Where, political competition which is computed using number of candidates competing in the local election, higher number of candidates indicates higher competition, which gives the competition at a certain point of time.

Political concentration is computed using Herfindahl Hirschman Index (HHI),

$$HHI_i = \sum_{C=1}^{n} S_C^2$$

Where $C = \{1,.,,.,.n\}$ total number of parties or independent individuals elected in a local body. $S_C = \frac{P_s}{T_s}$(share of seat own by each party), where T_s is total number of seats available for a local governments executive body and P_s is the number of seats own by single party.

$HHI_i \in (0,1)$, higher value of HHI indicates higher concentration of seats to fewer parties while lower value of HHI indicates higher fragmentation of executive body.

Political ideology based on ideology followed by elected mayor's or chairperson's political party. For convenience we have categorized political ideology two categories

that is people's multiparty democracy (PMD) and others. Dummy variable 1 for PMD and 0 for others.

We have taken voters turnout as a proxy variable for people's participation in democratic practices and decision-making activities. We have also incorporated high school pass population, Geographical Region (i.e., Mountain, Hill, and Terai) and Geographical Area of local government as control variables in the model. Here, ε_i is the error term, which is taken as robust standard error while performing OLS.

3.6 Operational definition of variables

The selection of input and output indicators is crucial for local units' efficiency calculations. While selecting the inputs and outputs, we have considered relevant literatures, characteristics of local governments, and data availability.

3.6.1 Input variables

The input variables are defined as financial resources used for providing public services. Literatures on efficiency of local government has used different input variables as; total expenditure (Andrews & Entwistle, 2015; S. Ashworth & Bueno De Mesquita, 2014; Be Borger et al., 1994; Cordero et al., 2017; De Borger & Kerstens, 1996a, 1996b; Pevcin, 2014), current expenditure (Balaguer-Coll et al., 2007; Bosch et al., 2012; Plaček et al., 2020; Stastna & Gregor, 2011; Šťastná & Gregor, 2014), capital expenditure (Balaguer-Coll et al., 2007; Bosch et al., 2012; Da Cruz & Marques, 2014; Fogarty & Mugera, 2013), personal expenditure (Bosch et al., 2012; Cordero et al., 2017; Da Cruz & Marques, 2014; Fogarty & Mugera, 2013). Budget expenditures in local governments is divided into current expenditure, capital expenditure and financial expenditure. Current expenditure on an average is 70 % to total expenditure, whereas financial expenditure is done only in few local governments. Considering available literatures and characteristics of Nepalese local government we have consider two inputs: Current expenditure(X_1) and capital expenditure(X_2).

3.6.2 Output Variables

Output variables are defined as the specific services and facility provided by each local government. Selection of output will be based on existing literature in the area of study, primary responsibility of Nepalese local government, and data availability. Existing literature have shown that it is difficult to find exact data for performance of

local governments, so often proxies are used as indicators to measure local units' performance.

Administrative Services

Administrative services provided by local government are difficult to measure as a direct output. Many existing literature like (Balaguer-Coll et al., 2007; Cordero et al., 2017; D'Inverno et al., 2018; Kalb et al., 2012; Šťastná & Gregor, 2014) have uses total population as a proxy for total administrative services provided by local government. We will use Total Population (Y_1) as a proxy variable for indicating general administrative services provided by each local government.

Education

Education sector is in the jurisdiction of local government. Primary and secondary education are mostly financed by local governments. For the indication of education service provided by local government we have use to variables Percentage of Net Primary school enrollment (Y_2) and Number of teachers in primary schools(Y_3).

Health and Social security

We have used number of senior citizen or share of population age group more than 60 years (Y_4), as a proxy variable for indication of health facility, care for elders and social security services provided by local government.

Infrastructure

Most of the existing literature have taken street light (Balaguer-Coll et al., 2007; Doumpos & Cohen, 2014) and municipal road (S. Ashworth & Bueno De Mesquita, 2014; Doumpos & Cohen, 2014; Fogarty & Mugera, 2013) as the proxy for infrastructure in local government. Due to data limitation, we have used Number of households operating small scale enterprise other than agriculture (Y_5)as a proxy variable for infrastructure facility in local government.

Other facilities

We have used drinking water facility as number of households with tap water facility within or outside premises (Y_6) as proxy for communal services and Percentage of birth registered child age below 5 years as proxy for other specific services provided by local government.

3.6.3 Explanatory Variables

After computation of efficiency score, impact of environmental variables is tested as the determents of local government efficiency. Political, economic, geographic, and demographic aspects of local government are considered as environment factor for a local government.

Political competition

The political competition can calculated with two measures; political competition at a point of time and political competition over the certain period of time (Ashworth et al., 2014). In this study we have only taken political competition at a certain point of time i.e., number of parties and individuals competing in an election for the position of mayor or chairperson. Political competition here means competition between parties with different ideology over the control of resources in local government. We expect positive relation between political competition and government performance.

Political ideology

Political ideology in this study means the ideology by elected mayors or chairpersons party. Mostly of the literature in local government efficiency has classified as left and right. But we have classified as people's Multiparty Democracy (PMD) and others.

People's Participation

People's participation in this study means people's involvement in democratic practices and in decision making of resources allocation. Most the literature have taken voters turnout as proxy variable for people's participation, willingness of citizens to monitor and sanction politicians (Ariza Marín et al., 2021). We have also taken voter's turnout as proxy variable. We expect positive relationship between people's participation and government performance.

Political concentration

Political concentration attempts to capture the political fragmentation in the local governments. It is measured using Herfindahl index (HHI), higher value of index indicates less fragmented or higher concentration of seats to few parties. The variable is basically used as proxy for difficulty of ruling party to approve its agenda from executive board.

Education status of people

We have also taken education status of people living in local level. To capture education status, we have taken number of people who have passed higher secondary level of education in each local government. Education up-to higher secondary level is compulsory in Nepal. We expect positive impact of educated population in local government performance.

Geographical region and Area

We have also included geographical region and geographical area in this study as a control variable. The geographical region is based on the location of local government as Mountain, Hill, and Terai. Geographical region is basically included to capture the difficulty of local government to run development projects due to geographical structure. Geographical area is measured in square kilometer. Greater area requires greater resources in the development.

CHAPTER IV

RESULTS AND DISCUSSION

4.1 Introduction

This chapter is the main body of the research which contains both qualitative and quantitative findings along with the discussion. Initially, economic aspect of PMD based on local level is presented followed by descriptive statistics of input and output variables, environmental variables, and local level efficiency scores. Finally, the result and discussion of OLS and truncated regression analysis is presented.

4.2 Economic aspect of PMD

Communism as an organized movement started after the establishment of Nepal the Communist Party on April-22, 1949 AD, under the leadership of Pushpa Lal Shrestha. He published the CPN Manifesto, which was the first published document to study Nepalese society from the perspective of historical materialistic outlook. The rise of communism in Nepal was mostly influenced by the Indian independence movement and the success of the Chines Communist Revolution of 1949 (Khadka, 1995). Growing dissatisfaction with the compromising and conciliatory behavior of the NC leadership and growing popularity of Marxist ideology among Nepalese revolutionaries gave birth to the Communist Party of Nepal (CPN) as an historical necessity towards an alternative path for Nepalese democratic movement (Gurung, 1977).

Along with political popularity, the expansion of communist movement also increases internal feuds and fractions among communist leaders. Debate on ideology and implementing most effective strategic means for political change divide communist leaders into different fractions broadly defined as pro-Chinese and pro-Russian (Khadka, 1995). Among different fractions emerged new cadres of full-time and well-educated activists who emphasized specially on constructing own Nepalese road towards socialism and formed Communist Party of Nepal (Marxist-Leninist), popularly called MALE with, long-term strategy of construction and coordination nation-wide structure of clandestine party cells (Nickson, 1992). In January 1991 AD, CPN (Marxist-Leninist) and Unified left front CPN (Marxist) amalgamated to form CPN (Unified Marxist-Leninist) under leadership of Man Mohan Adhikari as

president and Madan Kumar Bhandari as general secretary. A major ideological breakthrough was made by the CPN (Unified Marxist-Leninist) in February 1993 AD as the Fifth National Congress passed the resolution of *Janatako Bahudaliya Janbad* (People's Multi-Party Democracy), and the party shifted towards parliamentary democracy from the one-party communist system (Hachhethu, 1999). UML moved away from the idea of proletariat dictatorship towards parliamentary road to communism without abandoning their fundamental Marxist outlook and accepting Madan Bhandari's concept of People's Multiparty Democracy (PMD) (Gellner, 2007).

People's Multiparty Democracy (PMD) is based on philosophical ideology of dialectical materialism, which sees contradiction and dialectics as universal law of development. It has recognized the existence of dialectical inter-relationship within the process of matter formation, cognition, and every other phenomenon. Dialectics and contradiction within the society between different class is the driving force for societal movement towards progressive structure. PMD has accepted the existence of different classes in every stage of society explained by historical materialism i.e., slavery, feudalism capitalism, and socialism. The existing class in each stage of society has their class politics, class interest and class outlook. By universal law of dialectical materialism every class tries to protect their respective class interest and class politics. Which creates class conflict between different classes. PMD has advocated about the political structure in which each class has right to protect their respective class interest and class politics, which is guaranteed by highest governing law. The movement towards class less society should be based on changed in consciousness of people but not by force (Thapa, 2012).

PMD has concretely analyze the Nepalese socio-economic situation and phenomenon from the prospective of dialectical materialism. It has promoted towards mixed economic system where planning, price and market mechanism should be balanced throughout the economy. It has recognized some of the advantageous aspect of capitalist system, along with PMD's main objective of reviving state's role towards uplifting the status of working class, low- income groups, and marginalized communities and sectors, with maintaining equality and social justice.

Within the mixed economy state will facilitate private sector and promote cooperative sector. There will be three actors in the economy namely government, private and cooperatives, within the systematic planned system of the state. State should create

the incentivizing environment to each person living within the economic system and encourage them in fulfilling all of their material needs.

PMD has outlined four stages of development while constructing a concrete socialist economic structure: Eradication of feudal mode of production, and elimination of imperialism, comprador bureaucratic capitalism, and foreign monopoly capitalism to establish a people oriented new democratic economic system. In the second stage, strengthen and development of economic system with uplifting economic level of people and increasing productivity and effectivity. In the third phase, creating a fundamental base for progressive system equipped with all pre-requisites for transition towards socialism consolidating of all the political, economic, social, and cultural spheres. Last stage, transformation towards socialist economic system.

PMD has emphasized that economic revolution must starts from agricultural revolution, followed by industrial revolution and gradual development of service sector. Modernization of agricultural sector is crucial for economic transformation and uplifting living standard of peasant, workers, and poor whose life depend upon agriculture. Land is the most important factor of production which should be owned mostly by peasant and should be promoted towards cooperative farming. The primary objective of agricultural and industrial revolution should be uplifting economic level of proletariat and working-class people, along with national capital formation. Competition in political and economic sector is key component to incentivize private sector and promote economic growth.

Local level being grassroot level, which can directly impact socio-economic aspect of vast majority and only channel through which people can participate directly in decision making and resource allocation process. PMD has mostly emphasized to strengthen multiparty democracy from local level.

Analysis of the economic aspect of PMD for local level government using hermeneutic approach can be summarized into following points.

Decentralization and fiscal federalism

Local development policy must be based on bottom-up approach implemented on the basis of toll, wards, municipality, province and central. There should be constitutional assurance of autonomy for local governments in the area of development, planning, management of resources, and providing basic service to citizens. Local government

ought to operate under a self-governing framework, should determine their revenue and expenditure based on their resources. They should move towards financial autonomy apart from the influence of central government.

Planned system

There should be an effectively planned system based on people's need and availability of resources. The focus of planning should be preliminary on infrastructure development, unemployment along with migration problem, narrowing gap between rural and urban areas, and decentralizing of facilities along with development activities. Additionally, local government should plan the development of various sectors like agriculture, industries, service, and tourism based on their feasibility, on a collective or co-operative formats. The planning procedure should be structured and institutionalized to ensure that local development directly influence the economic, social, and political well-being of the people. The medium-term and long-term plans at local level should consider certain aspects of national and regional plans.

People's Participation

The core essence of PMD revolves around "people", which is prominently emphasized throughout the text. People's participation is key element of PMD, where people must participate in democratic practices, decision making and resources allocation. The established local government should be a true reflection of people and should functions best on the people's decisions. If peoples are not yet prepared for progressive change, then first step should be shifting their consciousness towards change, a progressive change should not be imposed by force but should be guided by collective consciousness of the people. People's development should be prioritized, followed by societal development.

Political competition

Multiparty competition at local level strengthens the people's democratic system. Political competition increases the welfare and guarantee the supremacy of the people's decision. It helps to eliminate feudal production system, dominations and exploitation, social evils, and superstitions at local level.

Mixed system

There will be the existence of government, private and co-operative sector at the local level. The role of private sector at local level must be defined clearly. The importance of private sector on economic development cannot be neglected though local government should promote on collective or co-operative sector. There should be a people-oriented production system that directly enhance economic level of people. Local government should focus on modernization of agricultural sector through scientific and improved cultivation system and integrate it with small and cottage industries.

Infrastructure

Infrastructure plays crucial role in local level development. It should be designed to facilitate the transition towards socialism with narrowing gap between rural and urban areas, mitigating regional imbalance, promoting economic activities and effective public service delivery. Development of infrastructure should be guided by the local level priority, economic viability, and potentiality.

Institution

All local organizations and institutions need to be institutionalized to ensure qualitative changes and quantitative development. Administrative bodies should prioritize efficiency, effectiveness, and should be people oriented. These organizations and institutions should have greater autonomy to protect their professional right, interest, and aspirations.

4.3 Descriptive statistics

4.2.1 Input-output variables

In this section we analyze the central tendency and dispersion of input and output variables. The dataset contains detail information of number of different variables; current expenditure, capital expenditure, number of primary school teachers in each local government, number of people age above 60 years, total population, percentage of children with birth registration age below 5 years, number of households operating small enterprise other than agriculture, number of households with tap water facility within or outside their premises, and percentage of net primary school enrollment. For purpose of calculation of efficiency score we have only considered 716 local governments out of total 753. 17 Metro and Sub-Metropolitan cities are excluded

from the study due to their unusual size compared to other local governments. And, remaining 20 are eliminated due to the data unavailability. The dataset consists of 5,012 individual data form 716 local governments with 7 variables while calculating efficiency score.

Table 4.1: Descriptive Statistics of Input and Output Variables

Variables	Mean	SD	Min	Max
INPUTS				
Current Expenditures	313814185.04	143474085.23	26229246	1293926924
Capital Expenditures	200958255.20	142158229.63	11806529	2014130338
OUTPUTS				
No. of Teachers in Primary schools	132.50	59.48	10	421
No. of people age above 60 years.	3470.47	2329.72	89	15417
Total population	33075.15	25489.71	396	177557
% of Birth Registered child age < 5 Years	75.52	9.81	48.33	96.23
No. of Household operating small scale enterprise other than Agriculture	727.45	700.47	6	6944
No. of Household with tap water facility within or outside premises	4354.58	3892.69	93	32664
% of Net Primary school enrollment	96.90	0.20	96.3	98.80

Notes: Number of observations for each variable (N =716), Data covers for the year 2077/78, Data are extracted from local government Audit Reports, Flash I Report 2078, and Household and Population census 2078.

The summary of descriptive statistics is shown in Table 4.1, i.e., which provides detail information of Mean, Standard deviation, Minimum and Maximum of the input and output variables. The standard deviation, minimum, and maximum values in the table shows more dispersion in the distribution of variables. The dispersion might be due to varying local government's size, their geographical location, and their administrative

classification etc. The input variables show that on an average current expenditure is higher than capital expenditure.

On an average there are 132.50 number of primary school teachers in local governments, with ranging from 10 to 421. Percentage of net primary school enrolment on average is 96.90 with 0.2 standard deviation. Population is also highly dispersed as it ranges from minimum of 396 to maximum of 177557.

4.2.2 Environmental Variables

In this section we will analyze the central tendency and dispersion of environmental variables. Environmental variables are used in the second stage of our analysis to explore the determining factors of efficiency scores. Dataset contains number of different variables; Political competition, Voters Turnout, Political ideology, political concentration, Total number of populations with Inter passed, local government internal revenue, Geographical region, and Geographical area. Table 4.2 shows the summary of descriptive statistics of all the environmental variables.

Table 4.2: Descriptive Statistics of Environmental Variables

Environmental Variables	Mean	SD	Median	Min	Max
Political Competition	7.49	3.89	6	2	25
Political Concentration (HHI)	0.50	0.15	0.48	0.18	1
Voters Turnout	74.30	5.45	74.3	49.62	97.13
Educated population	2685.29	3594.33	1564.00	71	33063
Internal Revenue	33031462.12	109282532	8692484	2221	2443075819
Political Ideology*					
PMD	0.397	0.490	0	0	1
Others	0.603	0.490	1	0	1
Geographical Regions*					
Mountain	0.161	0.368	0	0	1
Hill	0.491	0.500	0	0	1
Terai	0.349	0.477	0	0	1
Geographical Area	200.34	653.03	125.57	6.89	16644

*Note: Number of observations for each variable (N =703), * indicated Dummy variables, Data covers for the year 2077/78, Data are extracted from local government Audit Reports, Election commission result report for 2074 BS, and Household and Population census 2078.*

Political competition is calculated using number of parties and independent candidates competing for the position of mayor or chairperson. larger number of people competing indicates higher competition. Number of candidates range from 2 to 25 but, in 50 % of local governments there are only less than or equal to 6 candidates competing.

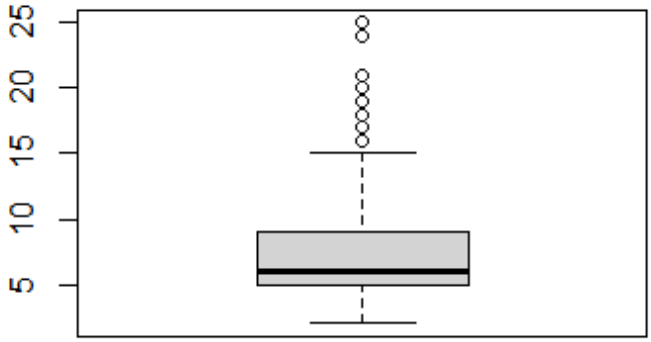


Figure 4.1: Political Competition (Number of candidates)

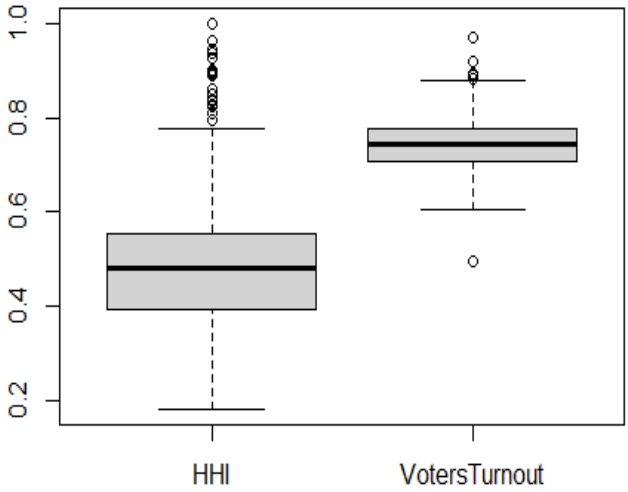


Figure 4.2: Political Concentration and Voters Turnout

Political concentration is calculated using Herfindahl Index (HHI), where $HHI \in (0,1)$, value 1 indicates fully concentrated government where all the seats of executive body are won by a single party. Value closer to zero indicates more fragmented government where, higher number of political parties has been elected in the executive body. The value of HHI ranges from 0.18 to 1 with median of 0.48. Figure 4.2 shows the distribution of HHI values and voters turnout. Voters turnout

indicates percentage of people participate in local election. In local election 2074 BS an average of 74.30 percent of people participated with highest of 97.13 and lowest of 49.62 percent. Figure 4.2 shows voters turnout normally ranged from around 60 to 90 percentage.

Political ideology is classified into PMD (People's Multi-Party Democracy) and Others. Table 4.2 shows that 39.7 percent of local government's elected Mayor or Chairperson in our sample are following PMD as their political ideology and remaining 60.3 percent are following different political ideology with some independent candidates. Inter pass population range from 71 to 33063 with median of 1564, which indicates that 50 percent of local government have less than or equal to 1564 inter pass population.

In order to capture the geographical distribution and geographical area of local governments we have included two variables. The geographical classification has been done as Mountain, Hill and Terai based on the location of local governments. Table 4.2 shows that among total sample of local governments, 16.1 percent are located in mountain, 49.1 percent are located in hill, and 34.9 percent are located in terai region. Largest sample size is from hilly region as nearly 50 percentage. Geographical area arranged from 6.89 square kilometer to 16644 square kilometer. Mostly literature shows that larger area requires larger resources for the development.

4.3 Results

In the first stage of our analysis, we compute efficiency scores of local governments using input and output variables. But before computing efficiency scores, return to scale (RTS) of the production model is tasted. Whether the production model is constant return to scale (CRS) or variable return to scale (VRS). We have used three methods; S1(Simar & Wilson, 2002), S2 (Bogetoft & Otto, 2011)and S3 (Simar & Wilson, 2011). Null hypothesis (H_0) for all these methods is that the production model is constant return to scale (CRS).

The result presented in Table 4.3, which shows that the critical values for all the methods are higher than test statistics and p-value are lower than level of significance. Which means we cannot accept the null hypothesis (H_0). Hence the production model is operating in variable return to scale (VRS). Some of the local governments are not

operating at their optimal level. Efficiency calculated using variable return to scale (VRS) is used for second stage of analysis.

Table 4.3: Return to Scales Test.

		S1	S2	S3	Conclusion
H_0: CRS					Reject H_0
Test statistics		0.75517***	0.75062***	-0.20715***	
Critical Value:	5%	0.82798	0.98934	-0.13629	
	1%		0.97083		

*Note: Authors calculation, ***p<0.01, **p<0.05, *p<0.1*

4.3.1 Descriptive statistics of efficiency score

Efficiency score was calculated using constant return to scale (CRS), variable return to scale (CRS) and also VRS bias corrected. Table 4.4 shows the descriptive statistics (Mean, Standard Deviation, Median, along with Minimum and Maximum) of efficiency scores of VRS, CRS and VRS-BC. The description shows that on an average efficiency score calculated using VRS are higher than CRS method. Efficiency score using VRS range from 0.1909 to 1 where CRS method's efficiency score range from 0.1751 to 1. VRS bias corrected efficiency score are lower than VRS.

Table 4.4 Descriptive Statistics of Efficiency scores.

	Mean	SD	Median	Min	Max
VRS BC	0.4682	0.1418	0.4429	0.1522	0.8986
CRS	0.4232	0.1380	0.4037	0.1751	1
VRS	0.5638	0.1988	0.5083	0.1909	1

Note: Authors Calculation

For the further analysis we have use bias corrected variable return to scale (VRS-BC) efficiency scores. VRS is suitable when some local governments are not operating at their optimal level and also when we have to make comparison between local governments with unequal size in-term of resources. Table 4.5 provides descriptive statistics (Mean, Standard Deviation, Median, along with Minimum and Maximum) of VRS Bias corrected efficiency score with respect to different clusters of environmental variables.

Table 4.5: Descriptive statistics of VRS Bias corrected efficiency scores.

Environmental Variables	Number	Mean	SD	Median	Min	Max
Political Ideology*						
PMD	279	0.46	0.14	0.43	0.19	0.90
Others	424	0.47	0.14	0.44	0.15	0.83
Geographical Regions*						
Mountain	113	0.47	0.17	0.43	0.16	0.83
Hill	345	0.47	0.15	0.46	0.15	0.90
Terai	245	0.46	0.12	0.43	0.16	0.83
Population Distribution*						
Population < 10,000	42	0.46	0.19	0.40	0.20	0.90
Population 10,000 to 20,000	210	0.46	0.14	0.43	0.15	0.86
Population 20,000 to 30,000	165	0.46	0.13	0.44	0.19	0.83
Population 30,000 to 40,000	87	0.45	0.13	0.44	0.20	0.75
Population 40,000 to 50,000	64	0.45	0.11	0.43	0.24	0.73
Population 50,000 to 60,000	52	0.46	0.14	0.43	0.23	0.79
Population 60,000 to 70,000	21	0.39	0.10	0.37	0.28	0.70
Population 70,000 to 80,000	23	0.46	0.11	0.47	0.25	0.70
Population > 80,000	39	0.61	0.13	0.68	0.27	0.79
Local government*						
Rural-Municipality	424	0.46	0.14	0.43	0.15	0.90
Municipality	269	0.48	0.14	0.46	0.19	0.79

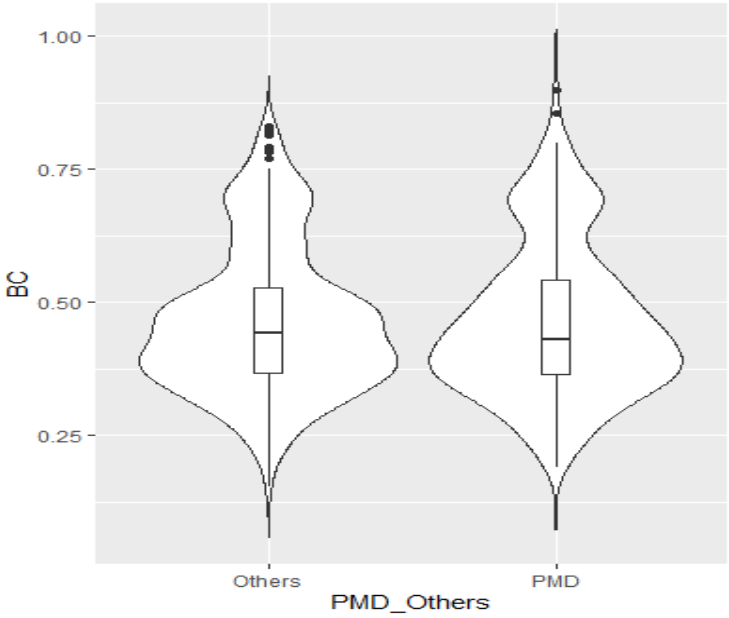
Notes: Data covers for the year 2077/78, Data are extracted from local government Audit Reports, Flash I Report 2078, and Household and Population census 2078.

In political ideology we can see that the average efficiency score of PMD is slightly lower than Others, whereas the minimum and maximum value of PMD are greater than Others with equal standard deviation. Kruskal-Wallis test was conducted to see

the difference between PMD and Other; $\chi^2(df = 1, N = 703) = 0.122, P > 0.05$, as p-value is greater than significance level, which means PMD and others are not stochastically difference in-terms of efficiency scores.

Figure 4.2 shows the distribution of efficiency scores with respect to PMD and other political ideology. Higher probability mass and median for both groups are in the lower value of efficiency score, which means large number of local governments have lower value of efficiency around 0.40. Another smaller probability mass is also formed at higher value around 0.70 for both PMD and Others. PMD has higher minimum and maximum values of efficiency scores than others. But the distribution pattern is similar for both PMD and others.

Figure 4.3: Distribution of Efficiency score based on Political Ideology



The efficiency score doesn't show much difference based on geographical locations. The average efficiency score of Mountain, Hill and Terai are 0.47, 0.47 and 0.46 respectively. Efficiency score of Terai region on average slightly lower than other two regions.

To examine the effect of local governments size on their respective efficiency, efficiency scores are clustered into nine different groups based on their population size. The average of efficiency scores and population size are showing non-linear relationship, initially efficiency is higher at lower population level and as population increases efficiency score decreases for certain and then increases forming U shape.

We also performed Kruskal-Wallis and Dunn's test to compute difference between each group. The result shows that local government with population more than 80,000 is only stochastically different than each other groups. Whereas other population group are not stochastically different with each other's. The average efficiency score of Municipality is higher than Rural municipality.

4.3.2 Truncated and OLS regression results.

In order to explore further insight of efficiency scores second stage regression analysis is performed. In the second stage regression VRS bias corrected efficiency score is taken as dependent variable and variables described in Table 4.2 are taken as explanatory variables. We have performed ordinary least square (OLS) and bootstrap left truncated regression estimation methods for the better comparison and computation of clear picture.

The results of second stage estimation are presented in Table 4.6. Column (1) presents the result using OLS estimation technique whereas Column (2) presents the result of bootstrap left truncated regression. Column (3) presents bootstrap confident interval at 95%. We have also performed some diagnostic tests; Shapiro-Wilk normality test and white heteroscedasticity test. The result in the table shows that data are not normally distributed and existence of heteroscedasticity. Test for multicollinearity was also performed. The error term (ε_i) while performing OLS estimation we have taken as heteroscedasticity- robust standard error (HC1).

The results from OLS and truncated regression estimation techniques are consistent in-terms of sign of coefficients, value of coefficients, and level of significance. The value of all the estimated coefficients falls within the bootstrapped confidence interval. Which also shows the result are consistent in term of sign and significance. The value of sigma in truncated regression estimation is small and significance at 1% level.

Table 4.6: OLS and Truncated Regression Results

DEPENDENT VARIABLE (Bias Corrected efficiency score)	OLS (1)	TRUNCATED (2)	95% CONFIDENCE INTERVAL (3)	
INDEPENDENT VARIABLES			LOWER	UPPER
Constant	0.26685**	0.26677***	0.04852	0.49257
	(0.01532)	(0.0083)		
Political_Competition	0.00344**	0.00347*	-0.00009	0.00676
	(0.04418)	(0.0726)		
Political concentration (HHI)	0.06407*	0.06426*	-0.00852	0.13932
	(0.09260)	(0.0718)		
Voters_Turnout	0.00231**	0.00233**	-0.00004	0.00467
	(0.04473)	(0.02459)		
Political Ideology	-0.00601	-0.00606	-0.02742	0.01600
	(0.59594)	(0.59078)		
Ln_Inter_Pass	0.05088***	0.05117***	0.03301	0.06867
	(0.000)	(0.000)		
Ln_Revenue	-0.0259***	-0.02613***	-0.03300	-0.01608
	(0.000)	(0.000)		
Mountain	0.00819	0.00821	-0.02641	0.04408
	(0.63895)	(0.61697)		
Terai	-0.0456***	-0.04576***	-0.07470	-0.01857
	(0.00108)	(0.00185)		
Ln_Area	0.004679	0.00469	-0.00974	0.01917
	(0.52029)	(0.51652)		
Sigma		0.1351***		
		(0.000)		
Log-Likelihood:		411.81 (11 Df)		

Diagnostic Tests

Shapiro-Wilk normality test 0.9747 (0.000)

White Heteroscedasticity Test 38.4 (0.00341)

==========

*Note: Number of local governments (N= 703), Estimated SEs are parenthesis as; * significant at 10% (p < 0.1), ** significant at 5% (p < 0.05), and *** significant at 1% (P< 0.01).*

In the table 4.6 column (1) suggest that political competition is positively associated with VRS bias corrected efficiency score at 5% level of significance. Similarly, column (2) also shows positive association of political competition at 10% level of significance. Estimated coefficient also lies within confidence interval at 5% level of significance. Which shows higher political competition leads to higher level of performance. Political concentration (HHI) in column (1) and (2) shows positively associated at 10% level of significance. Voters turnout in column (1) and (2) also shows positive and statistically significant impact on efficiency. The result indicates that 1 % increase in voters turnout will increase approximately 0.00233 point in efficiency score.

Inter pass population also has shown expected positive sign. That is, increase in educated population has significantly positive impact of local government performance. To check the robustness of the impact of educated population, we also run regression using log of graduated and post graduated population and found similar result. Political ideology has shown negative sign but not significance in both column (1) and (2). Which means that there is no significance difference between PMD and others but on average efficiency score of PMD are lower than Others.

Internal revenue of local government has significantly negative sign suggesting larger local governments are less efficient, similar result was found by Ashworth et al. (2014),Borge et al.(2008). The dummy variable of geographical region shows that there is no statistical significance difference between efficiency score of Mountain and Hill, while Terai region is significantly less efficiency than Hilly region. Geographical area has shown positive sign but not statistically significance.

4.4 Discussion

Political competition improves the efficiency of local government, similar result as Ashworth et al. (2014). It shows that increased in electoral competition in terms of number of parties results into higher efficiency of local governments. Politician will be less likely to serve their own interest and extract rent in a competitive environment, but more concern on delivering public goods (Ariza Marín et al., 2021). Higher degree political competition make governments reduce opportunist behavior and more efficient allocation of resources (Rezki, 2022). PMD has emphasized on competitive environment with periodic election, where each political party has to convince people to be re-elected in the office. Which makes political parties more concern about

people's welfare. Additionally, PMD has also noted the significance of competitive environment in terms of incentivizing both citizens and private sectors in an economy. The result shows positive association between political competition and local government performance.

Political concentration is calculated using Herfindahl Index (HHI), which is based on the number of elected representatives from each political parties or independent individuals in the executive body of local government. Higher value of HHI indicates higher concentrated or less fragmented government, which also means stronger government with weaker opposition. Significant positive sign of political concentration indicates that stronger government is associated with higher efficiency. Borge et al. (2008) and Doumpos and Cohen (2014) have also found similar result. Who state that less intense political opposition requires less wastage of resources in negotiation. Similarly, Ashworth et al. (2014) states that coalitions between parties has strongly negative effect on local government efficiency. The result also supports the well-established "week government hypothesis" which holds that weaker government or less concentrated government are associated with lower level of efficiency. The hypothesis states that formulation and implementation of policies will be more challenging to weaker governments. The result shows the positive effect of political competition and negative effect of political fragmentation. Though concentration effect is higher than competition effect in term of coefficient. The result indicates that stronger government formed from a competitive environment are more efficient.

Voters turnout has strongly significant positive association with local government efficiency. Which shows that higher percentage of people's participating in democratic practices will increase the efficiency. Ariza Marín et al. (2021)used voters turnout as proxy for peoples interest in efficient provision of public goods and services; Stastna and Gregor (2011) used as voters turnout proxy for democratic participation and found similar result as positive association with efficiency score. we have used voters turnout as proxy variable for people's participation in democratic practices and decision making. PMD has also emphasized on people's participation and decision making for their respective wellbeing, pointed at the importance of bottom-up approach to strengthen people's multiparty democracy.

Political ideology followed by mayors/chairpersons party has no significant differences in local government efficiency. We have categorized local governments into two groups: followers of People's Multiparty Democracy (PMD) and rest of political parties as others. Result being not statistically significant indicates no difference between PMD and Other political ideologies in efficiency of local governments. Education status of citizens has significantly positive impact on local government efficiency. Increasing number of educated population will have positive impact on efficiency score. Higher educated status implies politically and socio-economically aware citizens, who are more concern and curious about public goods provisions.

The significantly negative sign of internal revenue shows negative impact on local government efficiency. Similar result was found by Ashworth et al. (2014) which states that higher tax revenue in Flemish municipality are significantly associated with lower efficiency and Stastna and Gregor (2011) studied Czech municipality and found self-generated revenue relaxes the budget constraint which increases inefficiencies. However, we may explain our situation as underutilization of resources. The amount of public goods provided by local government is not significantly higher despite having larger internal revenue.

CHAPTER V

SUMMARY AND CONCLUSIONS

5.1 Introduction

In this chapter, we have presented summary and conclusion of major findings form our study. Along with it, we have presented some policy recommendation and tried to point out areas for further study.

5.2 Summary

Preliminarily, the study has focused on analyzing economic aspect of People's Multiparty Democracy (PMD) for the local level. Additionally, the study computes the efficiency scores of 716 local governments for the year 2078 BS and analyze its determinants mostly emphasizing political ideology, political competition, and people's participation. The research has used hermeneutic and narrative approach for qualitative analysis and has used non-parametric approach to estimate efficiency score. In the first stage of our empirical analysis, efficiency scores are calculated using input-oriented bootstrapped Data Envelopment Analysis (DEA) method. And, in the second stage, impact of different environmental variable on local government efficiency is analyzed using OLS and bootstrapped left truncated regression method.

The result of hermeneutic and narration approach shows that PMD at local has mostly focus on decentralization and fiscal federalism with movement towards financial autonomy, planned system, mixed system, people's participation, political and economic competition, institutionalization, and infrastructure.

Efficiency scores are calculated using input and output variables, where input variables are capital expenditure and current expenditure, and output variables are; Number of primary school teachers in each local government, Number of people age above 60 years, total population, Percentage of children with birth registration age below 5 years, Number of households operating small enterprise other than agriculture, Number of households with tap water facility within or outside their premises, and Percentage of net primary school enrollment. And for the second stage analysis, dependent variable of the study is bias corrected VRS efficiency score whereas explanatory variables are Political competition, Voters Turnout, Political

ideology, political concentration, Total number of populations with Inter passed, local government internal revenue, Geographical region, and Geographical area.

The result suggests that the average efficiency score of local governments of Terai regions is slightly lower than Hill and Mountain regions. The study have considered size of local governments based on their population size, and found non-linear relationship between size and efficiency score, result similar that of Doumpos and Cohen (2014) for Greek municipalities and D'Inverno et al. (2018) for Tuscan municipalities Italy. Based on administrative classification, average efficiency score of municipal governments is slightly higher than rural municipalities.

In the second stage of our analysis, the finding shows positive association of political competition and people's participation with local government efficiency. Further, we also found the positive association of political concentration, which supports the weak government hypothesis. Whereas there is no significance difference between impact of political ideology followed by elected chairpersons/mayors on efficiency score. Other variables such as educated population has positive association, internal revenue has negative and geographical area has no significance impact.

5.3 Conclusion

In this thesis, economic aspect of PMD based on local level government is analyzed. Further, the efficiency of Nepalese local government is calculated using DEA approach and its determinants are analyzed using OLS and bootstrap truncated regression.

The PMD has emphasized to strengthen local governments through financial autonomy, institutionalization, infrastructure, planned system, mixed system, people's participation, and political and economic competition. Previous literature have provided mixed result regarding impact of political competition and people's participation on local government efficiency. The result from OLS and bootstrapped truncated regression analysis shows the positive association of efficiency with political competition and people's participation. Government performance is also highly affected by political fragmentation and education status of citizen within the local government.

The study's finding will contribute to the existing knowledge of Nepalese political economic literature. It will be also beneficial to researcher, academicians, and policy

makers. Further work can be done using improved methodologies and more accurate measure of political competition. We have only considered mayors/chairpersons while calculating political competition and political ideology. Political competition also can be computed incorporating electoral volatility and patrician bias, which can be address in future research.

REFERENCES

Acharya, K. K. (2018). Local Governance Restructuring in Nepal: From Government to Governmentality. *Dhaulagiri Journal of Sociology and Anthropology*, *12*(0), 37–49.

Afonso, A., & Fernandes, S. (2005). Assessing and Explaining the Relative Efficiency of Local Government : Evidence for Portuguese. *The Journal of Socio-Economics*, *37*(5), 1946–1979.

Alsaigh, R., & Coyne, I. (2021). Doing a Hermeneutic Phenomenology Research Underpinned by Gadamer's Philosophy: A Framework to Facilitate Data Analysis. *International Journal of Qualitative Methods*, *20*, 1–10.

Andrews, R., & Entwistle, T. (2015). Public-private partnerships, management capacity and public service efficiency. *Policy and Politics*, *43*(2), 273–290.

Ariza Marín, D., Goda, T., & Tabares Pozos, G. (2021). Political competition, electoral participation and local fiscal performance. *Development Studies Research*, *8*(1), 24–35.

Asatryan, Z., & De Witte, K. (2014). Direct Democracy and Local Government Efficiency. *European Journal of Political Economy*, *39*, 58–66.

Ashworth, J., Geys, B., Heyndels, B., & Wille, F. (2014). Competition in the political arena and local government performance. *Applied Economics*, *46*(19), 2264–2276.

Ashworth, S., & Bueno De Mesquita, E. (2014). Is voter competence good for voters?: Information, rationality, and democratic performance. *American Political Science Review*, *108*(3), 565–587.

Balaguer-Coll, M. T., Prior, D., & Tortosa-Ausina, E. (2007). On the determinants of local government performance: A two-stage nonparametric approach. *European Economic Review*, *51*(2), 425–451.

Banker, R. ., Charner, A., & Cooper, W. . (1984). Some models for estimating technical and scale inefficiencies in data envelopment analysis. *Management Science*, *30*(9), 1078–1092.

Be Borger, B., Kerstens, K., Moesen, W., & Vanneste, J. (1994). Explaining

differences in efficiency: An application to Spanish municipalities. *Public Choice*, *80*(3/4), 339–358.

Benito, B., Faura, Ú., Guillamón, M. D., & Ríos, A. M. (2019). The efficiency of public services in small municipalities: The case of drinking water supply. *Cities*, *93*, 95–103.

Benito, B., Guillamón, M. D., Martínez-Córdoba, P. J., & Ríos, A. M. (2021). Influence of selected aspects of local governance on the efficiency of waste collection and street cleaning services. *Waste Management*, *126*, 800–809.

Bohorquez, C. (2010). *Paul Ricoeur's Hermeneutic Detours and Distanciations: A Study of The Hermeneutics of Hans-Georg Gadamer and Paul Ricoeur*.

Bonisch, P., Hung, P., Illy, A., & Schreier, L. (2011). Municipality Size and Efficiency of Local Public Wirtschaftsforschung Halle Municipality Size and Efficiency. In *Working Paper* (Issue 18/2011).

Borge, L. E. (2005). Strong politicians, small deficits: Evidence from Norwegian local governments. *European Journal of Political Economy*, *21*(2), 325–344.

Borge, L. E., Falch, T., & Tovmo, P. (2008). Public sector efficiency: The roles of political and budgetary institutions, fiscal capacity, and democratic participation. *Public Choice*, *136*, 475–495.

Bosch, N., Espasa, M., & Mora, T. (2012). Citizen control and the efficiency of local public services. *Environment and Planning C: Government and Policy*, *30*(1), 248–266.

Brettenny, W., & Sharp, G. (2016). Efficiency evaluation of urban and rural municipal water service authorities in south africa: A data envelopment analysis approach. *Water SA*, *42*(1), 11–19.

Byrne, M. (2001). Hermeneutics as a methodology for textual analysis. *AORN Journal*, *73*(5), 968–970.

Campos-Alba, C. M., Prior, D., Pérez-López, G., & Zafra-Gómez, J. L. (2020). Long-term cost efficiency of alternative management forms for urban public transport from the public sector perspective. *Transport Policy*, *88*, 16–23.

Cazals, C., Florens, J. P., & Simar, L. (2002). Nonparametric frontier estimation: A

robust approach. *Journal of Econometrics*, *106*(1), 1–25.

Charnes, A., Cooper, W. W., & Rhodes, E. (1978). Measuring the efficiency of decision making units. *European Journal of Operational Research*, *2*(6), 429–444.

Chaudhary, D. (2019). The Decentralization, Devolution and Local Governance Practices in Nepal: The Emerging Challenges and Concerns. *Journal of Political Science*, *19*, 43–64.

Coelli, T. J., Prasada Rao, D. S., O'Donnell, C. J., & Battese, G. E. (2005). An introduction to efficiency and productivity analysis. In *An Introduction to Efficiency and Productivity Analysis* (Second Edi). Springer.

Cordero, J. M., Pedraja-Chaparro, F., Pisaflores, E. C., & Polo, C. (2017). Efficiency assessment of Portuguese municipalities using a conditional nonparametric approach. *Journal of Productivity Analysis*, *48*(1), 1–24.

Cordero, J. M., Polo, C., Santín, D., & Simancas, R. (2018). Efficiency measurement and cross-country differences among schools: A robust conditional nonparametric analysis. *Economic Modelling*, *74*, 45–60.

D'Inverno, G., Carosi, L., & Ravagli, L. (2018). Global public spending efficiency in Tuscan municipalities. *Socio-Economic Planning Sciences*, *61*, 102–113.

D'Inverno, G., Moesen, W., & De Witte, K. (2022). Local government size and service level provision. Evidence from conditional non-parametric analysis. *Socio-Economic Planning Sciences*, *81*.

D'Inverno, G., Smet, M., & De Witte, K. (2021). Impact evaluation in a multi-input multi-output setting: Evidence on the effect of additional resources for schools. *European Journal of Operational Research*, *290*(3), 1111–1124.

Da Cruz, N. F., & Marques, R. C. (2014). Revisiting the determinants of local government performance. *Omega (United Kingdom)*, *44*, 91–103.

Daraio, C., & Simar, L. (2005). Conditional nonparametric frontier models for convex and nonconvex technologies: A unifying approach. *Journal of Productivity Analysis*, *28*, 13–32.

Daraio, C., & Simar, L. (2007). *Advanced Robust And Nonparametric Methods In*

Efficiency Analysis. Springer.

De Borger, B., & Kerstens, K. (1996a). Cost efficiency of Belgian local governments: A comparative analysis of FDH, DEA, and econometric approaches. *Regional Science and Urban Economics*, *26*(2), 145–170.

De Borger, B., & Kerstens, K. (1996b). Radial and Nonradial Measures of Technical Efficiency : An Empirical Illustration for Belgian Local Governments Using an FDH Reference Technology. *Journal of Productivity Analysis*, *7*(1), 41–62.

De Witte, K., & Geys, B. (2013). Citizen coproduction and efficient public good provision: Theory and evidence from local public libraries. *European Journal of Operational Research*, *224*(3), 592–602.

Doumpos, M., & Cohen, S. (2014). Applying data envelopment analysis on accounting data to assess and optimize the efficiency of Greek local governments. *Omega (United Kingdom)*, *46*, 74–85.

El Mehdi, R., & Hafner, C. M. (2014). Local government efficiency: The case of moroccan municipalities. *African Development Review*, *26*(1), 88–101.

Fan, X., Yu, B., Chu, Z., Chu, X., Huang, W. chiao, & Zhang, L. (2020). A stochastic frontier analysis of the efficiency of municipal solid waste collection services in China. *Science of the Total Environment*, *743*.

Fan, Y., Li, Q., & Weersink, A. (1996). Semiparametric Estimation of Stochastic Production Frontier Models. *Journal of Business & Economic Statistics*, *14*(4), 460–468.

Farrell, M. . (1957). The Measurment of Productive Efficiency. *Journal of the Royal Statistical Society*, *120*(3), 254–298.

Ferraro, S., Agasisti, T., Porcelli, F., & Soncin, M. (2021). Local governments' efficiency and educational results: empirical evidence from Italian primary schools. *Applied Economics*, *53*(35), 4017–4039.

Fogarty, J., & Mugera, A. (2013). Local government efficiency: Evidence from Western Australia. *Australian Economic Review*, *46*(3), 300–311.

Geanellos, R. (2000). Exploring Ricoeur's hermeneutic theory of interpretation as a method of analysing research texts. *Nursing Inquiry*, *7*(2), 112–119.

Geys, B., Heinemann, F., & Kalb, A. (2010). Voter involvement, fiscal autonomy and public sector efficiency: Evidence from German municipalities. *European Journal of Political Economy*, *26*(2), 265–278.

Giménez, V., Prior, D., & Thieme, C. (2007). Technical efficiency, managerial efficiency and objective-setting in the educational system: An international comparison. *Journal of the Operational Research Society*, *58*(8), 996–1007.

Guerrini, A., Carvalho, P., Romano, G., Cunha Marques, R., & Leardini, C. (2017). Assessing efficiency drivers in municipal solid waste collection services through a non-parametric method. *Journal of Cleaner Production*, *147*, 431–441.

Guerrini, A., Romano, G., & Indipendenza, A. (2017). Energy efficiency drivers in wastewater treatment plants: A double bootstrap DEA analysis. *Sustainability (Switzerland)*, *9*(7), 1–13.

Hachhethu, K. (1999). Nepali Politics : Political Parties , Political Crisis and Problem of Governance. *Governance An International Journal Of Policy And Administration*.

Hagen, T. P., & Vabo, S. I. (2005). Political characteristics, institutional procedures and fiscal performance: Panel data analyses of Norwegian local governments, 1991-1998. *European Journal of Political Research*, *44*(1), 43–64.

Haider, S., & Ahmad Bhat, J. (2018). Inter-state analysis of energy efficiency- a stochastic frontier approach to the Indian paper industry. *International Journal of Energy Sector Management*, *12*(4), 547–565.

Helland, L., & Sørensen, R. J. (2015). Partisan bias, electoral volatility, and government efficiency. *Electoral Studies*, *39*, 117–128.

Johnes, G., & Virmani, S. (2020). The efficiency of private and public schools in urban and rural areas: moving beyond the development goals. *International Transactions in Operational Research*, *27*(4), 1869–1885.

Kalb, A., Geys, B., & Heinemann, F. (2012). Value for money? German local government efficiency in a comparative perspective. *Applied Economics*, *44*(2), 201–218.

Khadka, N. (1995). Factionalism in the Communist Movement in Nepal. *Pacific*

Affairs, *68*(1), 55.

Kharel, S. (2019). Local Governance and Rural Development Practices in Nepal. *NUTA Journal*, *6*(1–2), 84–94.

Kinsella, E. A. (2006). Hermeneutics and critical hermeneutics: Exploring possibilities within the art of interpretation. *Forum Qualitative Sozialforschung*, *7*(3).

Kneip, A., Simar, L., & Wilson, P. W. (2008). Asymptotics and consistent bootstraps for DEA estimators in nonparametric frontier models. *Econometric Theory*, *24*(6), 1663–1697.

Krüger, J. J. (2012). A Monte Carlo study of old and new frontier methods for efficiency measurement. *European Journal of Operational Research*, *222*(1), 137–148.

Lin, B., & Zhao, H. (2016). Technology gap and regional energy efficiency in China's textile industry: A non-parametric meta-frontier approach. *Journal of Cleaner Production*, *137*, 21–28.

lo Storto, C. (2016). The trade-off between cost efficiency and public service quality: A non-parametric frontier analysis of Italian major municipalities. *Cities*, *51*, 52–63.

Loikkanen, H. A., & Susiluoto, I. (2005). Cost efficiency of Finnish municipalities in basic service provision 1994-2002. *Urban Public Economics Review*, *17*(4), 39–63.

Martínez-Córdoba, P. J., Raimo, N., Vitolla, F., & Benito, B. (2020). Achieving sustainable development goals. Efficiency in the spanish clean water and sanitation sector. *Sustainability (Switzerland)*, *12*(7), 1–13.

Narbón-Perpiñá, I., Balaguer-Coll, M. T., Petrović, M., & Tortosa-Ausina, E. (2020). Which estimator to measure local governments' cost efficiency? The case of Spanish municipalities. *SERIEs*, *11*(1), 51–82.

Narbón-Perpiñá, I., Balaguer-Coll, M., & Tortosa-Ausina, E. (2017). Evaluating local government performance in times of crisis. *Local Government Studies*, *45*(1), 64–100.

Narbón-Perpiñá, I., & De Witte, K. (2017). Local governments' efficiency: a systematic literature review—part II. *International Transactions in Operational Research*, *25*(4), 1107–1136.

Nigar, N. (2020). Hermeneutic phenomenological narrative enquiry: A qualitative study design. *Theory and Practice in Language Studies*, *10*(1), 10–18.

O'Loughlin, C. T., & Wilson, P. W. (2021). Benchmarking the performance of US Municipalities. *Empirical Economics*, *60*(6), 2665–2700.

Pacheco, F., Sanchez, R., & G. Villena, M. (2020). Estimating Local Government Efficiency using a Panel Data Parametric Approach: The Case of Chilean Municipalities Estimating Local Government E¢ciency using a Panel Data Parametric Approach: The Case of Chilean Municipalities. *Applied Economics*, *53*(3), 292–314.

Park, J. H., & Kim, J. H. (2021). The impact of airport managerial type and airline market share on airport efficiency. *Sustainability (Switzerland)*, *13*(2), 1–16.

Pevcin, P. (2014). Efficiency levels of sub-national governments: A comparison of SFA and DEA estimations. *TQM Journal*, *26*(3), 275–283.

Plaček, M., Křápek, M., Čadil, J., & Hamerníková, B. (2020). The Influence of Excellence on Municipal Performance: Quasi-Experimental Evidence From the Czech Republic. *SAGE Open*, *10*(4).

Plaček, M., Nemec, J., Ochrana, F., Půček, M., Křápek, M., & Špaček, D. (2021). Do performance management schemes deliver results in the public sector? Observations from the Czech Republic. *Public Money and Management*, *41*(8), 636–645.

Prasad, U. S. (2015). Nepal's Fiscal Federalism Model in the New Constitution: Agenda for Amendments. *NRB Economic Review*, *27*(2), 91–108.

Rambe, R. A., Wibowo, K., & Febriani, R. E. (2020). Assessing Local Government Efficiency: Evidence From Sumatra, Indonesia. *Applied Economics Journal*, *27*(2), 20–44.

Rattsø, J., & Tovmo, P. (2002). Fiscal discipline and asymmetric adjustment of revenues and expenditures: Local government responses to shocks in Denmark. *Public Finance Review*, *30*(3), 208–234.

Revelli, F., & Tovmo, P. (2007). Revealed yardstick competition: Local government efficiency patterns in Norway. *Journal of Urban Economics*, *62*(1), 121–134.

Rezki, J. F. (2022). Political competition and economic performance: evidence from Indonesia. *Economics of Governance*, *23*(2), 83–114.

Rodríguez Bolívar, M. P., Navarro Galera, A., López Subirés, M. D., & Alcaide Muñoz, L. (2018). Analysing the accounting measurement of financial sustainability in local governments through political factors. *Accounting, Auditing and Accountability Journal*, *31*(8), 2135–2164.

Rogge, N., & De Jaeger, S. (2012). Evaluating the efficiency of municipalities in collecting and processing municipal solid waste: A shared input DEA-model. *Waste Management*, *32*(10), 1968–1978.

Rubin, P. H. (2014). Buchanan, Economics, and Politics. *Southern Economic Journal*, *80*(4), 912–917.

Ruggiero, J. (2007). *A comparison of DEA and the stochastic frontier model using panel data*. *14*, 259–266.

Sampaio De Sousa, M. D. C., & Stošić, B. (2005). Technical efficiency of the Brazilian municipalities: Correcting nonparametric frontier measurements for outliers. *Journal of Productivity Analysis*, *24*(2), 157–181.

Simar, L., & Wilson, P. W. (1998). Sensitivity analysis of efficiency scores: How to bootstrap in nonparametric frontier models. *Management Science*, *44*(1), 49–61.

Simar, L., & Wilson, P. W. (2000). Statistical Inference in Nonparametric Frontier Models : The State of the Art. *Journal of Productivity Analysis*, *13*, 49–78.

Simar, L., & Wilson, P. W. (2002). Non-parametric tests of returns to scale. *European Journal of Operational Research*, *139*(1), 115–132.

Simar, L., & Wilson, P. W. (2007). Estimation and inference in two-stage, semi-parametric models of production processes. *Journal of Econometrics*, *136*(1), 31–64.

Simar, L., & Wilson, P. W. (2011a). Inference by the m out of n bootstrap in nonparametric frontier models. *Journal of Productivity Analysis*, *36*(1), 33–53.

Simar, L., & Wilson, P. W. (2011b). Two-Stage DEA : Caveat Emptor. *Journal of Productivity Analysis*, *36*, 205–218.

Stastna, L., & Gregor, M. (2011). Local Government Efficiency: Evidence from the Czech Municipalities. *IES Working Paper*, *14*.

Šťastná, L., & Gregor, M. (2014). Public sector efficiency in transition and beyond: evidence from Czech local governments. *Applied Economics*, *47*(7), 680–699.

Suzuki, K., & Han, Y. (2019). Does citizen participation affect municipal performance? Electoral competition and fiscal performance in Japan. *Public Money and Management*, *39*(4), 300–309.

Thapa, S. (Ed.). (2012). *Madan Bhandari: Sankalit Rachanaharu, Vol. 1-10* (Third Edit). Madan Ashrit Smriti Pratishthan.

Titl, V., & De Witte, K. (2022). How politics influence public good provision. *Socio-Economic Planning Sciences*, *81*.

Tran, T. V., & Noguchi, M. (2020). Public efficiency in Tokyo's metropolitan local governments: the role of asset utilization and budgeting. *Public Money and Management*, *42*(2), 114–123.

Tulkens, H., & Deprins, D. (1984). MEASURING LABOR-EFFICIENCY IN POST OFFICES. *The Performance of Public Enterprises*, 243–267.

Vieira[1], K. A. L., & De Queiroz[2], G. M. (2017). Hermeneutic Content Analysis: a method of textual analysis. *International Journal of Business Marketing and Management*, *2*(8), 2456–4559.

Wang, K., & Wei, Y. M. (2014). China's regional industrial energy efficiency and carbon emissions abatement costs. *Applied Energy*,130.

Wiklund, L., Lindholm, L., & Lindström, U. Å. (2002). Hermeneutics and narration: A way to deal with qualitative data. *Nursing Inquiry*, *9*(2), 114–125.

Winer, S. L., & Ferris, J. S. (2022). *Political Competition and the Study of Public Economics*. Cambridge University Press.