IMPACT OF TOURISM DEVELOPMENT ON ECONOMIC GROWTH OF NEPAL

A Thesis

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By

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LETTER OF RECOMMENDATION

This thesis entitled IMPACT OF TOURISM DEVELOPMENT ON ECONOMIC GROWTH OF NEPAL has been prepared by Mr. KAPIL KHADKA under my guidance and supervision. I, hereby, recommend it in partial fulfillment of the requirements for the Degree of MASTER OF ARTS IN ECONOMICS for final examination.

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LETTER OF APPROVAL

We certify that this thesis entitled IMPACT OF TOURISM DEVELOPMENT ON ECONOMIC GROWTH OF NEPAL submitted by Mr. KAPIL KHADKA to the Department of Economics, Faculty of Humanities and Social Sciences, Patan Multiple Campus, Tribhuvan University, in partial fulfillment of the requirements for the Degree of MASTER OF ARTS IN ECONOMICS has been found satisfactory in scope and quality. Therefore, we accept this thesis as a part of the said degree.

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LETTER OF DECLARATION

I, hereby, declare that this thesis entitled IMPACT OF TOURISM DEVELOPMENT ON ECONOMIC GROWTH OF NEPAL which I have submitted to the Department of Economics, Patan Multiple Campus, Tribhuvan University, in partial fulfillment of the requirement for the Degree of MASTER IN ECONOMICS, is entirely my original work prepared under the guidance of my supervisor. I have made due acknowledgements to all ideas and information borrowed from different sources in the course of writing the thesis. The results of this thesis have not been prepared or submitted anywhere else for the award of any degree. I shall solely responsible for any evidences found against my declaration.

KAPIL KHADKA

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ABSTRACT

Nepal has a good potential for tourism development. Tourism development could lead to economic growth of destination country, however, there is a debate whether tourism causes economic growth or not. Hence, this study is conducted to examine the trend of inbound tourist arrival and tourism receipts in Nepal and to examine impact of tourism on economic growth of Nepal.

To conduct study, secondary data were used which is taken for the year 1975 to 2021. The variables are rebased into common base year i.e., 2010/11. The independent variables are government consumption, gross fixed capital formation, tourism receipts and trade volume with the dependent variable gross domestic product. Unit root test was applied to examine the presence of unit root using Augmented Dickey Fuller test.Autoregressive Distributed Lag model was used to examine the impact of different independent variables on dependent variable.

The results of the study showed that arrival of inbound tourist in Nepal is increasing. The foreign exchange earnings from tourism is also increasing. India, China, UK, USA, and Sri Lanka are the major countries from where the most of the tourists come to visit Nepal.The estimated long-run coefficients for government consumption, gross fixed capital formation, and trade volume are found to be positive and statistically significant, suggesting a positive relationship between economic and these independent variables. However, the results of the study showed that there is no relationship between tourist receipts and economic growth in the long run.

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ABBREVIATIONS / ACRONYMS

ADF `	Augmented Dickey-Fuller
ARDL	Autoregressive Distributed Lag
DW	Durbin Watson
GC	Government Consumption
GDP	Gross Domestic Product
GFCF	Gross Fixed Capital Formation
i.e.	That is
IMF	International Monetary Fund
MOCTCA	Ministry of Culture, Tourism and Civil Aviation
MOF	Ministry of Finance
NRB	Nepal Rastra Bank
NTB	Nepal Tourism Board
RESET	Ramsey Regression Equation Specification Error Test
TR	Tourism Receipts
TV	Trade Volume
UK	United Kingdom
UNWTO	United Nations World Tourism Organization
USA	United States of America

CHAPTER I

INTRODUCTION

1.1 Background

Tourism refers to the activity of people traveling from one place to another, generally for leisure, exploration, recreation, or occupational or business purposes. It became integral part of modern life and carries a prominent impact on the global economy, culture exchange, and social interaction. Tourism is a dynamic and ever-evolving industry influenced by technological advancement, economic conditions, geo-political situations, and changing perception toward travelling. Likewise, Economic growth is an increase in the production of goods and services in an economy.It can be defined as the increase in the inflation-adjusted market value of the goods and services produced by an economy in a given financial year. Statisticians normally measure such growth as the percentage increase in the real and nominal gross domestic product (IMF, 2012).

According to UNWTO (2022), tourism can be defined as "a social, cultural and economic phenomenon which entails the movement of people to countries or places outside their usual environment for personal or business/professional purposes". Tourism is a phenomenon that encourages people to go to places throughout the world that have particular natural or man-made elements for recreation and rest (Fonseca, 2012). One of the largest and fastest-growing industries in the world, tourism contributes to local economies by creating jobs and income (Cerina et al., 2011).The structure of the economic mechanism can depend on the activity of tourism, which also actively contributes to the growth and modernization of the economy and society.

Economic growth and tourism sector have a direct and interrelated relationship; it contributes economic growth in various ways such as: job creation, income generation, utilization of local resources, infrastructure development, cultural exchange and etc.

Increasing export earnings, creating jobs, expanding consumer markets, and diversifying the economy can all be accomplished through tourism (Barros et al., 2011). Tourism can lead to the increase in employment, government revenue and economic growth. The preservation of natural and cultural assets for the enjoyment of

future generations has also been fueled by tourism and millions of jobs and business are dependent on a strong and thriving tourism sector(UNWTO, 2022). Tourism has a potential to create job opportunities and has multiplier effects throughout the economy. Tourism can play role in structural change of economy from the traditional agricultural economy to service oriented (Paudyal, 2012). Increasing the number of tourists and increasing the sector of tourism industry is a good symbol for the positive change in economy thus can have favorable impact on balance of payment of nation (UNWTO, 2020).

World tourism has been growing despite some occasional shocks which show its sector's strength and resilience. International tourist arrivals and tourism receipts have been increasing throughout the period of time while the exports revenues from revenues are also increasing which contributes to the favorable balance of payment (UNWTO, 2020). Tourism is also the worlds' third largest export category just following behind fuels and chemical and export revenue from international tourism have been growing faster than merchandise exports (ibid/2020). Hence in the era of globalization and connectivity, the importance of tourism in developing countries that are not able not produce and export merchandise, is increasing tremendously. This can provide the opportunity to create the favorable trade balance. For the developing economies, tourism is major source of foreign currency income which can represent about 90percent of the total export (UNWTO, 2022).

Attractions, activities and amenities are three A's among the elements of successful tourist industry (Camilleri, 2018). For the visitors, Nepal is a paradise where such attractions, amenities are naturally available. It has enormous potential to develop tourism industry to the larger scale. Mountaineering and trekking are the reasons to visit Nepal. It is known for its stunning natural scenery, the towering Himalayas, and the countless cultures and customs that are present throughout the entire nation. There are numerous ethnic groups, each of which practices its own unique art and religion. Nepalese people are known for their many different customs and ways of living. Nepal is the ideal place to experience both nature and culture.

1.2 Statement of the Problem

Government of Nepal has invested for the tourism infrastructure development and institutional buildings and encouraged private sector to invest by ways of various

policy intervention. Nepal Tourism Board was established was established for the development and promotion of tourism in Nepal (NTB Act, 1997). As a result, the government has taken the initiative and the lead in funding the construction of tourist infrastructure and facilities that may be utilized by other economic sectors. Despite these efforts on the part of the government of Nepal, tourism still makes up a small portion of the national economy.

Nepal has a good potential for tourism development. Tourism industry comprises of four main sectors which are transportation, accommodation, ancillary services and sales and distribution while access, accommodation, attractions, activities and amenities are 5A's which are essential to the success of a tourist destination (Camilleri, 2018). Nepal can provide such elements to be successful in tourism as it is a naturally, culturally, and religiously rich enough to attract the tourist. Tourism, thus, can have enormous potential to be an engine for the economic growth In Nepal.

Total tourist arrival has been decreased by 17.5percent as compared to the fiscal year 2020/21 but the average length of the stay of inbound tourist has been increased from 15.1 to 15.5 days in the same year compared to previous (MOCTCA, 2022). The tourism receipts in the fiscal year 2021 have been decreased as compared to 2020 by 48.2percent and also the average expenses per visitor per day was US$ 48 which was decreased compared to previous (UNWTO, 2021). But still tourism has created the tourism related enterprises in Nepal as number of star hotels, non-star hotels, travel agencies, trekking agencies, tourist guide, trekking guide have been increased in the fiscal year 2021 (UNWTO, 2021). This implies that the employment generation in the tourism related sector has been increased. According to Liu at al., (2018), tourism development could lead to economic growth of destination country and hence the income as well as the living standard of the people can be elevated.

Tourist arrival has remained scanty during the COVID-19 pandemic, although it is benefiting from the opening of hiking routes, trekking routes and expeditions. The tourism industry contributed about 6.7 percent to Nepal's GDP, while its total impact was US$ 2.2 billion (World Bank, 2022). In the other hand, Nepal is not able to utilize an opportunities to international tourists besides having a wide diversity of natural resources such as hiking, trekking, mountaineering, rafting, kayaking, cannoning, skydive, paragliding, bungee jumping etc. and cultural resources such as heritage-seeing, sight-seeing, carnivals, city tour, historical places and pilgrimage attractions.

So, Nepal has wide variety of tourism activities prevailed where thousands of tourists enjoy each year.

In context of Nepal, there is an ongoing debate whether tourism contributes economic growth. A study by Bhattarai and Karmacharya (2021) does not support tourism led growth while other studies such as Gautam (2008, 2011, 2014) and Paudyal (2012) have supported the tourism led growth. There is no such clear evidence whether tourism contributes economic growth. Hence, this study attempts to bridge up this gap and contributes to the literature related to link between tourism and economic growth.

1.3 Research Questions

This study will try to answer the following questions:

- What is the trend of inbound tourist arrival and tourism receipts in Nepal?
- To what extent does tourism development affect economic growth?

1.4 Objectives of the Study

The general objective of the study is to examine the relationship between tourism and economic growth in Nepal. The specific objectives of the study are:

- To analyze trend of inbound tourist arrival and tourism receipts in Nepal.
- To examine the effect of tourism on economic growth of Nepal.

1.5 Significance of the Study

This study plays a role in bridging the gap between the evidences that are lacking in the literatures in context of Nepal. This study aims to enlighten action, gather indication for theories, and contribute to developing knowledge in a field of study. This research discusses the significance of research and the many reasons why research is important for everyone—not just students and scientists but also to concerned policymaker, researchers, independent academicians, research firms and stakeholders to construct effective strategies, action plan, sustainable tourism practices, and leverage the sector's potential for inclusive and balanced economic growth.

1.6 Limitations of the Study

The study has used Autoregressive Distribution Lag (ARDL) model as an econometric model for the research analysis. However, there are other models to

capture the issues like: estimation of production function, generalized method of moment, Bayesian method is one of the limitations of this study. Likewise, the study depends upon the tourism receipts thereby ignoring the multiplier effect it can produce throughout the economy.

1.7 Organization of the Study

This report of this study will include five different chapters. The chapter one includes introduction, research problem, objectives of the study, and significance of the study. Chapter two contains the review of related literature which includes the conceptual review as well as empirical review. Reviews will be done in the chronological order. Chapter three contains research methodology which includes the research design, sampling techniques and sample size, empirical design, data analysis and presentation technique and limitations of study. Chapter four will contain data presentation and analysis calculated based upon the research methodology. The fourth chapter organizes according to the objectives of the study. And fifth chapter contains summary, conclusions and recommendations based on the findings of the study.

CHAPTER II

REVIEW OF LITERATURE

2.1 Introduction

In this section, the literature related to the tourism, economic growth and effect of tourism on economic growth have been reviewed.

The literature review has been organized in the context of the national and international in the chronological order, in the descending order. In the review, the research paper of different researchers has been incorporated. The objective of the study, methodology of the research and findings of the research work has been analyzed in the review.

2.2 International Context

Liu (2022) analyzed the impact of tourism on economic growth of Thailand. The study had also the analyzed the impact of tourism on economies in the global value chain. The author used the multiregional input output table with 35 industries and 63 economies to examine the economic contribution of tourism to Thailand and global economy. The study used the data over the period of 2007 and 2019 from hotels and restaurants, air transport and other community, social, and personal services sectors representing Thai tourism activities. The study used output multiplier, value added multiplier, linkage and leakage, global value chain indicators to measure the economic impact of tourism across economies and industries of Thailand. The study found that national output multiplier was ranged from 3.14 to 2.77 for the air transport, 2.59 to 2.26 for hotels and restaurants and 2.05 to 1.77 for other services form 2008-2019. The intraregional output multiplier was ranged from 2.1 to 1.9 for the air transport, 1.9 to 1.7 for hotels and restaurants and 1.6 to 1.4 for other services. Similarly, the interregional output multiplier ranged from 0.9 to 0.8 for the air transport, 0.5 to 0.4 for hotels and restaurants and 0.4 to 0.3 for other services. The intraregional simple value-added multiplier and interregional simple value-added multiplier were fluctuating for the study period for all three sectors. The type I value added multiplier linkages were found to be steady for all three sectors. The standardized total backward linkages were found to be steady for total linkage and intra-linkage while it was declining for inter-linkage. The total backward linkage was

found to be steady for total linkage, inter-linkage and intra-linkage. The standardize total forward linkages were found to be fluctuating for total linkage, inter-linkage and intra-linkage. Total forward linkages were found to be less fluctuating for total linkage, inter-linkage and intra-linkage. The forward leakages for all three sectors were increasing while the backward leakages were declining. Similarly, the forward as well as backward global value chain participation ratios were declining except for hotels and restaurants. Both traditional and new revealed comparative advantages for hotels and restaurants were increasing while they were somehow constant for air transport and other services. The study concluded that all three sectors had spillover effects to other industries. It concluded that tourism in Thailand had generated the significant impact on output and value added.

Naseem (2021) examined the role of tourism receipts, tourism expenditure, and number of tourist arrivals on the economic growth of Saudi Arabia and analyzed the relationship between these variables. The study used the secondary data over the period of 2003-2019. The variables were expressed in logarithm form. Unit root test was applied to the variables which tested the stationarity of data using augmented Dickey Fuller test and Phillips Peron test. Augmented Dickey Fuller test showed that economic growth was stationary at first difference while Phillips Perron test showed that it was stationary at level. Similarly, both tests showed that tourism receipts were stationary at first difference while tourism expenditure was stationary at level. Meanwhile the tourist arrival was stationary at first difference using Augmented Dickey Fuller test and it was stationary at level using Phillips Perron test. Johansen co-integration test was applied to test the long-run relationship among the variables which revealed the presence of the long-run relationship among the variables. The author computed the long run relationship by co-integration regression following fully modified ordinary least squares, canonical co-integrating regression and dynamic ordinary least square. By fully modified ordinary least squares method and canonical co-integrating regression method, it was found that tourism receipts, tourism expenditure and tourist arrival had positive and significant impact on economic growth in the long run. By dynamic ordinary least square method, it was found that tourism receipts and tourist arrival had positive and significant impact on economic growth in long run. Granger causality test showed that economic growth caused the tourist arrival suggesting growth led tourism.

Rasool et al.(2021) analyzed the relationship between tourism and economic growth of BRICS countries. The study used panel data over the period of 1995-2015 for the five countries of BRICS namely, Brazil, Russia, India, China and South Africa. The study used economic growth proxied by GDP per capita as dependent variable while international tourism receipts per capita and financial development were taken as independent variable. Financial development was proxied by ratio of broad money to real gross domestic product. The variables were expressed in logarithmic form. Unit root test showed that economic growth was stationary at first difference while tourism receipts and financial development were stationary at level. Autoregressive distributive lag model was conducted to the study. The study showed that tourism, financial development and economic growth were significantly co-integrated over the study period. The study also showed that there was positive and significant relationship between tourism receipts and financial development with the economic growth in the long run. The short run estimates showed that there was positive and significant relationship between tourism receipts and financial development with the economic growth.

Khan et al. (2020) examined the relationship between the tourism and variables like economic growth, capital development, energy development, agriculture development and poverty in Pakistan. Six regression models were developed to examine the relationship of tourism and different economic variables. The secondary data were used over the period of 1995-2016. The authors measured economic growth by gross domestic product, capital development by foreign direct investment, agriculture development by wheat production, energy development by energy consumption per capita, poverty by head count ration living under $1.90 per day and tourism development by tourist arrivals. The variables were transformed into logarithm. The correlation analysis showed that there was negative relationship between poverty and poverty while it had positive relationship with other variables. Augmented Dickey-Fuller and Phillips–Perron unit root tests were applied resulting in stationary of variables either in level or first difference. Autoregressive distributed lag model were used in the study which suggested that there was long run relationship between tourism and other variables. The long-run relationship showed that there was positive and significant relation of tourism with economic growth, capital development, energy development and agriculture development while it had negative and significant

relationship with poverty. Same relationship was found between tourism and other variables in the short run except for energy development and agriculture development. Granger causality showed that tourism had caused economic growth, capital development, energy development, agriculture development and poverty alleviation while capital development had caused the tourism development.

Nyasha et al. (2020) examined the effect of tourism development on economic growth in Sub-Saharan Africa. The study used secondary data over the period of 2002-2018. Economic growth proxied by gross domestic product was used as dependent variable while tourism expenditure, tourism receipts, financial development, domestic savings, domestic investment, trade openness and political stability were taken as independent variables. The study examined the effect of tourism of 47 countries out of 48 countries which were classified into low-income sub-Saharan African countries consisting of 24 and middle income sub-Saharan African countries consisting of 23. Generalized Method of Moments was used to analyze the effects of tourism. The results showed that tourism expenditure negatively affected economic growth while tourism receipts had positively affected the economic growth. In the low sub-Saharan African countries, tourism expenditure had negative affected economic growth while tourism receipts had positively affected economic growth. But in case of middle-income countries, tourism expenditure had effect on economic growth.

Pan and Dosou (2019) examined the relationship between tourism receipts and economic growth of Republic of Benin. The study used the secondary data from the period of 1995 to 2015. The study used economic growth proxied by gross domestic product as dependent variable and tourism receipts and exchange rate were used as independent variables. The variables were expressed in logarithm. Augmented Dickey Fuller test and Phillips Perron test were applied to test the existence of unit roots of variables which showed that all the variables were stationary at first difference. Vector error correction model was applied using Johansen co-integration test. The results showed that tourism had positive and significant impact on economic growth in republic of Benin confirming tourism led growth.

Wu and Wu (2019) examined relationship between tourism receipts and economic growth in China (in eight provinces) for the period from 1995 to 2014. The study found the mixed results. Granger causality test was used in the study. In Shanxi, Heilongjiang, Jiangxi and Henan states, tourism led growth hypothesis was rejected.

While in Heilongjiang, and Hunan State, growth led tourism hypothesis was rejected. For Jilin, Anhui and Hubei states both hypothesis were accepted.

Liu et al. (2018) analyzed the impact of tourism on economic growth using a dynamic stochastic general equilibrium approach. The research was conducted in Mauritius. The researcher modeled open economy which produced tourism and non-tourism goods using Bayesian method which was based in data of tourism and macroeconomic variables. Researchers used the secondary data over the period of 1999-2014. Gross domestic product, tourism value added, final consumption, total fixed capital formation, imports and consumer price index were selected for the estimation. The findings of the study showed that 1 percent increase in tourism leads to 0.09 percent increase in economic growth which supported tourism-led growth in Mauritius. The study also stressed that effects of tourism on economic growth could be moderated by price elasticities in international tourism demand.

Suresh and Senthilnathan (2014) examined causal relationship between economic growth and tourism earning in Sri Lanka during 1977-2012. Co-integration test and error correction test was used to examine the long term relationship. The study found that there was unidirectional causality between economic growth and tourism earning, where economic growth only causes to tourism earnings but the tourism does not cause economic growth.

Singh et al. (2010) examined the effects of tourism in economic growth by taking data from Bahamas, Barbados and Jamaica. The study used co-integration test and a vector auto-regression model to examine the relationship between tourism receipts and gross domestic product. The results showed that there is no relationship between tourism receipts and GDP in the long run despite having short run relationship in all three study areas.

Akan (2007) analyzed the relationship between economic growth and tourism receipts. The authors used the secondary data over the period of 1985 to 2007 of Turkey. Bothe the variables were transformed into logarithm. Phillips Perron test was conducted to examine the unit root test the variables which showed that the both variables were stationary at first difference. The study used the Johansen cointegration to examine existence of the long run relationship between economic growth tourism receipts. The Granger causality test results showed that there was two-way causality

between tourism receipts and economic growth which meant that the study supported both tourism-led growth and growth-led tourism.

Ivanov and Webster (2006) analyzed the effect of tourism on economic growth. The study was conducted using the data of Greece, Cyprus and Spain. The authors first used the growth of real gross domestic product as the measurement of economic growth. Secondly, the researchers separated the effects of other industrial growth to gross domestic product from the growth of real gross domestic product to compute the effect or contribution of tourist on real gross domestic product. The study combined the both inbound tourism and domestic tourism as well as utilization of the bed capacity. To compute the per capita gross domestic product and per capita gross value added, average size of the population was taken which was calculated as the mean of the population at beginning of the year and at the end of the year. The authors used the base year as 1995. The authors used the gross value added in tourism for Spain while they used gross value added in hotels and restaurants for Cyprus and Greece. The study found that the contribution of tourism in per capita gross domestic product was 0.63percent in 1999, 0.39percent in 2000, 0.15percent in 2001 and -0.42percent in 2002 which showed that the contribution of tourism in per capita gross domestic product was declining in Spain. The study found the contribution of tourism in per capita gross value added was 0.27percent in 1999, 0.10percent in 2000, -0.12percent in 2001 and -0.04percent in 2002 which showed contribution of tourism in per capita gross value added was declining in Spain. Similarly, the contribution of contribution of tourism for Cyprus in per capita gross value added was 0.42percent in 1997, 0.40percent in 1998, 0.75percent 1999, 0.69percent in 2000, 0.29percent in 2001, -0.83percent in 2002, -0.41percent in 2003 and -0.41percent in 2004 which showed that it was fluctuating over the study period. The study found the contribution of tourism in per capita gross value added in Greecewas1.85percent in 1997, 0.81percent in 1998, -0.19percent in 1999, 0.54percent in 2000, 1.03percent in 2001, 0.55percent in 2002, 0.62percent in 2003 and 1.20percent in 2004. The study showed that the contribution of tourism in per capita gross value added was quite fluctuating for Cyprus and Greece while it was declining for Spain during the study period.

2.3 National Context

Bhattarai and Karmacharya (2021) examined the impact of tourism receipts on economic growth of Nepal. The study used the secondary data over the period of

1976-2020. The gross domestic product was used as dependent variable while foreign aid, total volume of trade and ratio of government consumption expenditure to gross domestic product were taken as independent variables. All the variables were converted into logarithm form. Unit root test were conducted to test the stationarity of variables using augment Dickey Fuller test which showed gross domestic product, tourism, receipts, foreign aid and trade volume were stationary at first difference while proportion of government consumption to gross domestic product was stationary at level. Autoregressive distributive lag model showed that there was long run relationship among the variables. The long run estimates showed that there was no significant relationship between tourism receipts and gross domestic product in case of Nepal rejecting tourism led growth.

Jaiswal (2018) discussed the importance of tourism in the economic development of Nepal and studied the economic impacts of tourism in economic sector of Nepal as well as studied tourism as source of foreign exchange, income and employment generation and development of trade. The study was based on secondary data. Author has highlighted the contribution of tourism in gross domestic product. The study has also described the importance of tourism as it has potential of providing revenue through taxes and duties as the consumption of goods and services increase due to the tourism. The study also highlighted the significance of tourism as it acts as the invisible mechanisms for exports of goods and services contributing into the balance of payments of country. The author has also highlighted the importance of tourism as it could generate the income and employment to the people involving in the business of hospitality, travel, trekking agencies, etc. The author highlighted the fact that tourism and travel had brought the capital investment from into the country. Also the study had highlighted the trade effects and local development due to the development of tourism.

Gautam (2014) examined the role of tourism in economic growth of Nepal. The study covered secondary data over the period of 1975-2012. The variables used in the study were gross domestic product, foreign exchange earnings from tourism and real effective exchange rate. Unit root test was applied to the variables to examine the presence of unit root by augmented Dickey Fuller test. All the variables were stationary at first difference. Vector auto regressive model was applied to test the causality among the variables. Both long run and short run relationship among the

variables were assessed using vector error correction method and co-integration method. Johansen co-integration test showed that there was long run association among the variables. The results of vector error correction model showed that there was short run causality between the variables. The results also showed that there was no long run causality from foreign exchange earnings and exchange rate to economic growth. The results showed that there exist two-way causality between tourism development and economic growth.

Paudyal (2012) examined the relationship of tourism with economic growth in case of Nepal. Secondary data were used containing from 1975-2010. Macroeconomic variables such as gross national incomes, private consumption, private investment, total imports, total exports, government expenditure, direct taxes and tourism receipts. The study also calculated tourism multiplier using Keynesian model of income and employment. The study estimated tourism multiplier as 1.21. Marginal propensity to consume was found to be 0.89, marginal propensity to import was found to be 0.48, and marginal propensity to invest was found to be 0.12 while marginal propensity to tax was found to be 0.045. the author four regression model using ordinary least square method. The regression results showed that there was no significant relationship between tourism receipts and consumption expenditure. Also results showed that there was no significant relationship between tourism receipts and investment demand. The other regression result showed that there was positive relationship between tourism receipts and import. The final regression results showed that there was positive and significant relationship between tourism receipts and gross national income. Granger causality test was conducted to test the direction of causality between different macroeconomic variables. The results showed that there was bidirectional relationship between tourism receipts and gross national income. The results also showed that tourist arrival had caused per capita income. Results showed the bidirectional effects of exports and tourism. The results showed that tourist arrival and development expenditure of government affected each other. Also, it showed that there was two-way causality between tourism receipts and regular expenditure. It showed that tourism receipts affected tax revenue. The results also showed that there was two-way causality between tourism receipts and variables like direct tax, private consumption and imports.

Gautam (2011) analyzed the relationship between tourism and economic growth of Nepal. The study also analyzed that whether there was long run relationship between the economic growth and tourism. The independent variable taken was gross domestic product and independent variable was foreign exchange earning from tourism. Augmented Dickey Fuller test was applied to examine the presence of unit root. The data were taken from the year 1975 to 2010. Johansen cointegration test was applied to determine the existence of long run relationship between gross domestic product and foreign reserve earning from tourism. The results showed that there was long run relationship between the economic growth and tourism earnings. Granger causality test was applied to test the causality between the tourism earning and economic growth. The results showed that past values of tourist receipts granger caused for the economic growth. The results of the study showed that there existed the short as well as long run relationship between tourism receipt and economic growth.

Gautam (2008) examined the impact of tourism finance in Nepal. The study used both primary data and secondary data. Ordinary least square method was used in the study. Secondary data consisted of the data from the year 1975 to 2005 while primary data were collected from field survey in 2006. The results were assessed into two parts where first part included examination of effect of tourism financing on economic growth and second part consisted of effects of different sources of tourism financing variables. The variables were expressed in the logarithmic form. Tourism financing was calculated by summing the credit given by all financial institutions, government expenditure, foreign aid and loan assistance in tourism. The results of ordinary least square method showed that the effects of tourism financing were positive on growth of hotel, trade and restaurants, nominal gross domestic product and ratio of gross domestic product of hotel, trade and restaurants to nominal gross domestic product. After the correction of autocorrelation in the model, signs of the regression coefficients were positive which indicated that tourism financing had positive impact on various indicators of economic growth of Nepal. Second part consisted the effects of effects of various sources of tourism financing on economic growth. The independent variables were tourism loan disbursement of Nepal Industrial Development Corporation, loan disbursement of commercial banks, tourism expenditure of government, government investment in civil aviation and foreign loan disbursement in other sector including tourism. Five different ordinary least square

models were constructed. In the first model, coefficients of tourism loan disbursement of Nepal Industrial Development Corporation, loan disbursement of commercial banks, tourism expenditure of government and government investment in civil aviation were positive and statistically significant while coefficient of foreign loan disbursement in other sector including tourism was not statistically significant. In the second model both coefficients of tourism expenditure of government and government investment in civil aviation were positive and statistically significant. In the model three the coefficients of tourism expenditure of government, government investment in civil aviation and foreign loan disbursement in other sector including tourism were positive and statistically significant. In the fourth model, both coefficients of tourism loan disbursement of Nepal Industrial Development Corporation and loan disbursement of commercial banks were positive and statistically significant. In the last model coefficients of foreign loan disbursement in other sector including tourism was positive and statistically significant. The study showed that there was positive relationship between tourism financing and economic growth.

(2018) Jaiswal investigates the economic effects of the tourism industry generally and Nepal specifically. The research looks into tourism as a source of foreign exchange, income, and job creation. It also investigates the impact of tourism on trade, tourists, exports, and investment, infrastructure and regional development, skilled labor, and international understanding and collaboration. Furthermore, it has attempted to comprehend the negative impact of tourism, such as inflation, unequal distribution of income and infrastructure, and the opportunity cost of tourism development in Nepal. The greatest foreign earnings in Nepal in 2014-2015 were Rs. 46,370.90 million. Tourism employed locals in 2015 despite a significant drop in currency exchange rates in 2015-2016. Although it provided 9,45,000 jobs in Nepal in 2016. Tourism has a similar impact.

Nepal has a wide range of socioeconomic and physical characteristics. In the present period, when the entire world is advancing towards modernization and being impacted by globalization, Nepal has managed to preserve its ancient culture and traditions. The Government of Nepal's most recent tourist development policy is Tourist Vision: 2020, which includes economic reforms and an inclusive spirit for a broad-based enabling environment. Nepal Tourism Year 2011 is a campaign aimed at attracting

one million visitors to the country. The government expects two million yearly visitors by 2020 to attract tourists from all over the world by offering improved facilities. The study focuses on a few questions that draw more attention to tourism.

2.4 Research Gap

From the study of previous literature, we can conclude that a large number of researches in international and national context were completed to observe the impact of tourism development on economic growth. However, the reviewed literature had only focused on variables like tourism earning, numbers of hotels and restaurants, financial sector development, energy sector development, agriculture sector development, impact on foreign direct investment and effect on domestic saving and investment.

There is a continuing discuss whether tourism contributes economic growth in the context of Nepal. A study by Bhattarai and Karmacharya (2021) does not support tourism led growth whereas Gautam (2008, 2011, and 2014) and Paudyal (2012) have supported the tourism led growth. None of the articles observes the impact of macro-economic variables like tourism receipt, gross fixed capital formation, government consumption and trade volume on economic growth of Nepal. Similarly, in context of Nepal none of the research in tourism development and its impact on economic growth was found after 2021. Hence, this study attempts to bridge up this gap and contributes to the literature related to link between tourism and economic growth.

CHAPTER III

RESEARCH METHODOLOGY

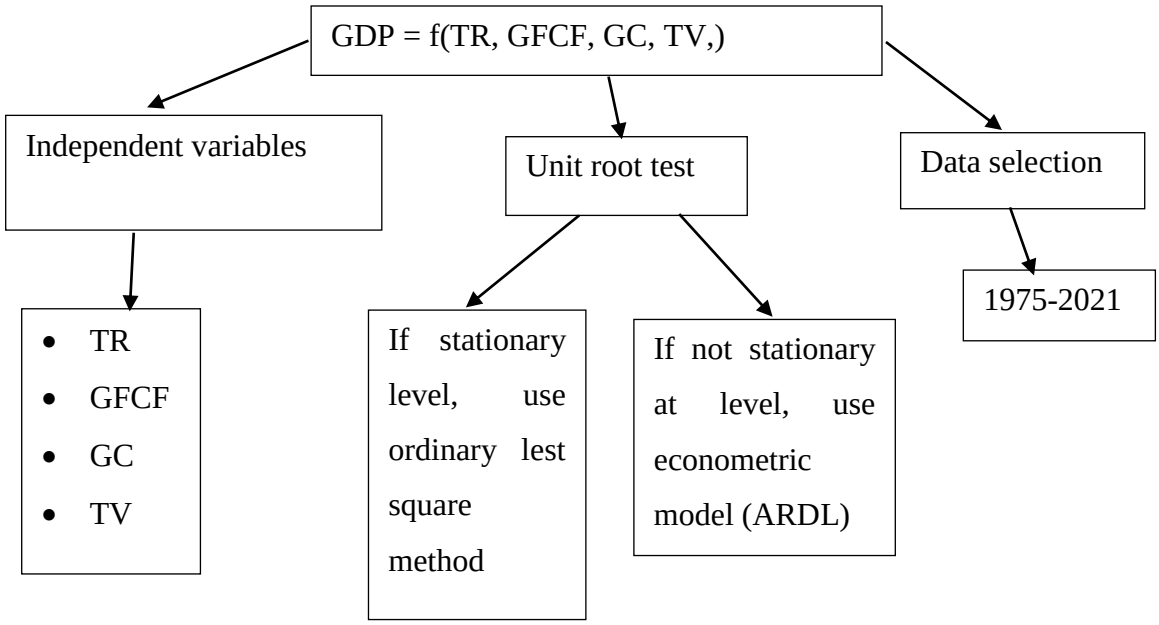
3.1 Introduction

In this section of the study, the methodology adopted in the research study has been discussed.This contains conceptual framework, sources of data used in the study, time span of the data, unit root test and empirical model. And lastly the limitations of the study are discussed.

3.2 Conceptual Framework

Based on the literature reviewed in the chapter II, following conceptual framework has been formulated.

Figure 3.2: Conceptual Framework



Source: Based on literature survey

3.3 Research Design

The quantitative method is used in this study. The study is based on the published secondary sources. This study is based on certain research techniques consisting of econometric model (i.e. ARDL) and tabular analysis. Various residual tests like auto-correlation, heteroscedasticity, serial auto-correlation is used to check the result of Auto Regressive Distribution Lag (ARDL) model. The major variables under study

are tourism receipts (TR), gross fixed capital formation (GFCF), government consumption (GC) and trade volume (TV) as a independent variable and economic growth (GDP) as dependent variables.

3.4Nature and Sources of Data

All the data are rebased into common base year i.e. 2010/11. Real data is calculated dividing nominal data by GDP deflator. The data are transformed into logarithm such as it is easier to cope the econometric problem that may arise during the analysis and it is easier to analyze the data in logarithm form.

The data of study is based on secondary sources of information which are taken from Ministry of Finance (MOF), Nepal Rastra Bank (NRB) and Ministry of Culture, Tourism and Civil Aviation (MOCTCA). The time series data covered the period of 1975 to 2021.

3.5 Tools of Analysis

The study has used tools of analysis on the basis of objectives:

i. Descriptive analysis to analyze trend of inbound tourist arrival and tourism receipts in Nepal.
ii. Regression analysis to examine the coefficient of significance of tourism on economic growth of Nepal

3.5.1 Unit Root Test

Macroeconomic variables have tendency of drifting up or down or they are trended in the long run period. So, if they are regressed, the results might be spurious with a very high value of R^2 and low value of DW statistics (Asteriou & Hall, 2007). Therefore, before applying regression model, it is essential to examine the existence of unit root of each variable.

There are various methods of examining the unit root test such as Augmented Dickey-Fuller (ADF) test, Dickey- Fuller GLS test, Phillips-Perron test, Kwiatkowski-Phillips-Schimdt-Shin test, Elliot-Rottenberg-Stock Point- Optimal test (ERS) and Ng-Perron test. This study will use ADF test to test the existence of unit root in the variable.

The general equations for the ADF test following (Asteriou & Hall, 2007)are:

Case I: No intercept and no trend

$$\Delta Y_t = \gamma Y_{t-1} + \sum_{i=1}^{p} \beta_i \Delta Y_{t-1} + \mu_t \quad \ldots\ldots\ldots\ldots\ldots (2)$$

Where, Y_t is a time series variable, *p* the lag order of the autoregressive process and μ_t is a pure white noise error term.

The null hypothesis of the Augmented Dickey-Fuller t-test is

H_o: $\gamma = 0$ (series contains a unit root)

H_1: $\gamma < O$ (the data is stationary and doesn't need to be differenced)

If the computed Dickey-Fuller statistic is more negative than the test critical (theoretical) values, the null hypothesis is rejected.

Case II: Intercept but no trend

$$\Delta Y_t = \alpha_0 + \gamma Y_{t-1} + \sum_{i=1}^{p} \beta_i \Delta Y_{t-1} + \mu_t \ldots\ldots\ldots\ldots\ldots\ldots\ldots (3)$$

Where, Y_t is a time series variable, $\alpha_0$is a constant, *p* the lag order of the autoregressive process and μ_t is a pure white noise error term.

The null hypothesis of the Augmented Dickey-Fuller t-test is

H_o: $\gamma = 0$ (series contains a unit root)

H_1: $\gamma < O$ (the data is stationary and doesn't need to be differenced)

If the computed Dickey-Fuller statistic is more negative than the test critical (theoretical) values, the hull hypothesis is rejected.

Case III: Intercept and trend

$$\Delta Y_t = \alpha_0 + \alpha_2 t + \gamma Y_{t-1} + \sum_{i=1}^{p} \beta_i \Delta Y_{t-1} + \mu_t \ldots\ldots\ldots\ldots\ldots\ldots (4)$$

Where, Y_t is a time series variable, $\alpha_0$is a constant, $\alpha_2$the coefficient on a time trend (t), *p* the lag order of the autoregressive process and μ_t is a pure white noise error term.

The null hypothesis of the Augmented Dickey-Fuller t-test is

H_o: $\gamma = 0$ (series contains a unit root)

H_1: $\gamma < O$ (the data is stationary and doesn't need to be differenced)

If the computed Dickey-Fuller statistic is more negative than the test critical (theoretical) values, the hull hypothesis is rejected.

3.5.2 Co-integration: ARDL Bounds Test

The ARDL bounds test, developed by Pesaranet al. (2001), is utilize to assess the impact of tourism receipts, government expenditure, gross fixed capital formation, and trade volume on economic growth. This method offers three distinct advantages over previous traditional co-integration approaches.

- It does not require all the variables being studied to be integrated at the same order. It can be applied when the underlying variables are integrated of order one, order zero, or even fractionally integrated.
- The ARDL test is particularly efficient when working with small and finite sample sizes, providing reliable results.
- By ARDL technique, we obtain unbiased estimates of the long-run model (Harris and Sollis, 2003).

Given the temporal nature of dynamic effects, it is essential for the econometric model employed to estimate these effects to include time lags. In order to achieve this, the dependent variable can be represented as a distributed lag, encompassing both current and past values of the explanatory variables (Stock & Watson, 2006).

The ARDL regression process involves two distinct stages. In the first stage, the presence of a long-run relationship between the variables is examined by calculating F-statistics, which indicate the existence of co-integration among the variables. In the second stage, the parameters for both the long run and short run are estimated using the relevant ARDL approach. However, before executing the ARDL model in analysis software such as E-views 10 version, it is crucial to determine the optimal lag length. Various criteria can be employed to select the optimal lag length, including the Akaike Information Criterion (AIC), the Schwartz Information Criterion (SC), or the Hannan-Quinn Criterion (HQC). For this particular study, the Akaike Information Criteria have been utilized to identify the optimal lag length.

To estimate the determinants of economic growth, GDP is regressed on different variables as mentioned earlier. All the variables are taken in natural logarithm. The basic model used for the estimation of the determinants of economic growth in the economy of Nepal is specified as:

$$lnGDP_t = a + b_1 \ln GC_t + b_2 \ln GFCF_t + b_3 \ln TR_t + b_4 \ln TV_t + error$$

Where,

ln GDP_t	Gross Domestic Product expressed in logarithm
ln GC_t	Government consumption
ln $GFCF_t$	Gross fixed capital formation
ln TR_t	Tourism receipts
ln TV_t	Trade volume

Following Pesaranet al., (2001), ARDL representation of unrestricted version is specified below in equation (3.16)

$$\Delta lnGDP_t = \mu + \sum_{i=0}^{m} \eta_i \Delta lnGC_{t-1} + \sum_{i=0}^{n} \omega_i \Delta \ln GFCF_{t-i} + \sum_{i=0}^{p} \varphi_i \Delta \ln TR_{t-i} + \sum_{i=0}^{q} \pi_i \Delta \ln TV_{t-i} + \theta_1 lnGDP_{t-1} + \theta_2 \ln GC_{t-1} + \theta_3 \ln GFCF_{t-1} + \theta_4 \ln TR_{t-1} + \theta_5 \ln TV_{t-1} u_t$$

Where Δ denotes first difference operator, μ is the intercept term, and u_t is the usual white noise residuals.

The equation presented here represents an ARDL model that effectively combines short-term dynamics with long-term equilibrium while preserving all pertinent information for the long run. The long run coefficients can be derived from the model estimated in the initial step by dividing the coefficients of the one-period lagged explanatory variables (multiplied by a negative sign) by the coefficients of the lagged dependent variables. This computation allows us to establish the relationship between the explanatory variables and the dependent variable in the long run, thereby capturing the sustained equilibrium dynamics (Akinboadeet al, 2008). Thus, the coefficients (θ_1 to θ_5) represent the long-run relationship whereas the remaining expressions with summation sign (coefficients η_i, ω_i, ϕ_i, π_i,) represent the short run dynamics of the model.

3.5.3 Diagnostic Test

The theoretical section of this diagnostic test are based on Asteriou and Hall (2007)

3.5.3.1Normality Test

For the normality test of residual Jarque-Bera test is used which is given by:

$$JB = \frac{N}{6}\left(S^2 + \frac{(K-3)^2}{4}\right)$$

Where,

JB = Jarque-Bera Statistics

S = Skewness

K = Kurtosis

For the decision making, if JB > χ^2, then null hypothesis of normality of residual is not accepted.

3.5.3.2Ramsey's RESET Test

The Ramsey Regression Equation Specification Error Test (RESET) test is a general specification test for the linear regression model. The intuition behind the test is that if non-linear combinations of the explanatory variables have any power in explaining the response variable, the model is mis-specified.

If the F-statistic is greater than F-critical, the null hypothesis of correct specification is not accepted.

3.6.3.3 Breusch-Godfrey Serial Correlation LM Test

When error terms from different time periods are correlated, then the error terms are said to be serially correlated. Serial correlation is found to be occurred in time-series studies when the errors associated with a given time period carry over into future time periods.

For the detection of serial correlation in the model, Breusch-Godfrey serial correlation LM test will be used. The null hypothesis of no serial correlation would be rejected if the LM statistic exceeded the upper α critical value of a chi-squared distribution.

3.5.3.4Breusch-Pagan-Godfrey Heteroscedasticity Test

In statistics, heteroscedasticity occurs if variance of predicted variable over different values of an independent variable are not constant. Regression analysis using heteroscedastic data still provides an unbiased estimate for the relationship between the predictor variable and the outcome, but standard errors and therefore inferences obtained from data analysis are suspect. Biased standard errors lead to biased inference, so results of hypothesis tests are possibly wrong. In this study Breusch-Pagan-Godfrey will be employed to test the presence of heteroscedasticity. If the p-value is less than 0.05, the null hypothesis of no serial correlation is not accepted.

3.5.4.5 CUSUM Test

The CUSUM test is based on the cumulative sum of the recursive residuals. This option plots the cumulative sum together with the 5% critical lines. The test finds parameter instability if the cumulative sum goes outside the area between the two critical lines.

3.5.4.6 CUSUM of Square Test

As with the CUSUM test, movement outside the critical lines is suggestive of parameter or variance instability. The cumulative sum of squares is generally within the 5% significance lines, suggesting that the residual variance is somewhat stable.

3.6 Model Specification

This study used economic growth as dependent variable proxied by the gross domestic product (GDP). The independent variables are tourism receipts (TR), gross fixed capital formation (GFCF), government consumption (GC) and trade volume (TV).

The inclusion of the tourism receipts as independent variable in this study is based on the study by Bhattarai & Karmacharya(2021), Gautam (2011 & 2014), Paudyal(2012), and Akan et al., (2007). Similarly, the gross fixed capital formation is the proxy for the investment in the nation which definitely affect the economic growth as it is included in the study Paudyal (2012), Khan et al., (2020), Nyasha et al., (2020). Government consumption and trade volume have been included as independent variable following Bhattarai & Karmacharya(2021). Hence the analytical model is based as

GDP = *f*(TR, GFCF, GC, TV)

The application of econometric model is based on the unit root test. Since some of the variables are stationary at level and some are stationary at first difference, autoregressive distributed lag model etc. is used in the study.

3.7 Operational Definition of Variables

This study used Economic growth is proxied by Gross Domestic Product (GDP) as a dependent variable. Gross Domestic Product (GDP) refers to the total market value of the final goods and services produced by a country's economy during a specified period of time.

The independent variables of this study are

i) Tourism Receipt (TR)

It refers to the numbers of international inbound tourists arrived in destination country (Nepal) in a given period of time. This study expects the significant and positive relationship between GDP and TR.

ii) Government Consumption (GC)

It refers to money spent by the public sector on the acquirement of goods and provision of services like education, healthcare, social protection and defense within a given period of time. This study expects the significant and positive relationship between GDP and TR.

iii) Gross Fixed Capital Formation (GFCF)

It refers to an investments in various assets, such as Machinery and equipment, Buildings and structures, Software and intellectual property by a nation at given period of time. This study expects the significant and positive relationship between GDP and TR.

iv) Trade Volume (TR)

It refers to the sum of exports and imports of goods and services made by a nation for a specific time period. This study expects the significant and positive relationship between GDP and TR

CHAPTER IV

DATA PRESENTATION AND ANALYSIS

4.1 Introduction

This chapter serves as the central component of the study, wherein the results obtained through the prescribed methodology are presented and analyzed. It aims to fulfill the objective outlined in the introduction of chapter one. By focusing on the key findings, crucial issues, and recommendations, this section plays a pivotal role in drawing conclusive insights from the study.

4.2 Overview of Study

Tourism activity, which actively contributes to the growth and modernization of the economy and society, can influence the structure of the economic mechanism. Tourism, as one of the world's largest and fastest-growing businesses, helps to local economies by producing jobs and money. Economic growth and the tourist sector are inextricably linked; tourism contributes to economic growth in a variety of ways, including job creation, revenue production, usage of local resources, infrastructure development, cultural exchange, and so on.

Tourism has the ability to generate job opportunities and has a multiplier effect on the economy as a whole. Tourism can help the economy transition from a traditional agricultural economy to a service-oriented economy. Increasing the number of tourists and the tourism business is a good symbol for a positive change in the economy, which can have a positive impact on the nation's balance of payment. Tourism may be used to increase export revenues, create jobs, develop consumer markets, and diversify the economy. Tourism may boost employment, government revenue, and economic growth. Tourism has also aided in the preservation of natural and cultural treasures for future generations' enjoyment, and millions of jobs and businesses rely on it.

This study contributes to bridging the evidence gap that exists in the literature in the context of Nepal. This research attempts to illuminate action, provide evidence for theories, and contribute to the advancement of knowledge in a certain field of study. This study examines the importance of research and the numerous reasons why research is important for everyone—not just students and scientists, but also

concerned policymakers, researchers, independent academicians, research firms, and stakeholders—in order to develop effective strategies, action plans, and sustainable tourism practices, as well as to leverage the sector's potential for inclusive and balanced economic growth.

The time series data covered the period of 1975 to 2021. All data are rebased on the same base year, 2010/11. Real data is obtained by dividing nominal data by the GDP deflator. The data is changed into logarithm form so that it is easier to deal with any econometric problems that may arise throughout the study and to analyze the data in logarithm form. A descriptive examination of the trend of inbound tourist arrivals and revenues in Nepal. Likewise, regression analysis to determine the impact of tourism on economic growth of Nepal.

4.3 Trend of Inbound Tourist Arrival and Tourism Receipts in Nepal

In this section of the study, the trend of tourist arrival and tourism receipts have been analyzed.

4.3.1 Average Number of Inbound Tourist Arrival and Average Stay

In this section of the study, the average number of the inbound tourist has been calculated for different period of time. Also, the tourist arrival by means of transportation has been calculated. The average length of stay of inbound tourist has been estimated by averaging the annual length of stay. The average rate of growth has been calculated by averaging the annual growth rate. The average tourist arrival, length of stay and average growth rate have been calculated for the years 1964-1973, 1974-1983, 1984-1993, 1994-2003, 2004-2013 and 2014-2021. The actual data has been attached in the Appendix I.

Table 4.1: Average Number of Inbound Tourist Arrival and Average Stay

Year	Annual Average tourist Arrival	Mean Tourist Arrival		Average Stay (in days)	Average Growth Rate (%)
		by Air	by Land		
1964-1973	32,555	26,601	5,954	NA	26.03
1974-1983	141,453	121,219	20,534	12.06	10.66
1984-1993	251,072	218,199	32,874	11.38	5.60
1994-2003	389,907	331,857	58,050	11.02	2.51
2004-2013	562,135	416,032	146,303	11.90	9.64
2014-2021	721,702	578,181	143,520	13.36	(7.03)

Source: Nepal Rastra Bank, 2023

The average annual tourist arrival in Nepal has been increasing as seen from Table 4.1. The average annual tourist arrival in the year 1964-1973 was 32,555 and number has been increasing since then and it was 721,702 per year for the period 2014-2021.

Similarly, the average annual tourist arrival by air in Nepal has been increasing. In the period 1964-1973, the annual average tourist arrival by air was 26,601 which has increased to 578,181 per year for the period 2014-2021. Same case can be found for the tourist arrival by land; however, the average annual tourist arrival was found to be slightly lower for the period 2014-2021 than 2004-2013.

The average length of stay of tourist is somehow remained constant for the years 1964 to 2013. However, there has been slight increase in length of stay for the study period 2014-2021.

The rate of growth of tourist arrival is found to be fluctuating. In fact, the rate of growth of tourist arrival is found to be decreasing from the study period 1964 to 2003. The rate of growth was found to be low for the period 1994-2003. This may be the cause of internal conflict in Nepal. The rate of growth of tourist arrival was found to be increased for the period 2004-2013 as in this period, Nepal experienced the end of internal conflict heading towards peace. However, the rate of growth of tourist arrival for the period 2014-2021 is found to be negative (-7.03%). The reason behind this is due to the devastating earthquake in 2015 and COVID-19 pandemic starting at end of 2019 which caused the worldwide lockdown and slow down of economy.

4.3.2 Distribution of Inbound Tourist Arrival by Age

In this section of the study, the age of the inbound tourist has been analyzed.

Table 4.2: Age of Inbound Tourist

Year	Annual Average tourist Arrival	Age Group (in years)				
		0-15	16-30	31-45	46-60	60+
1993-2000	402,225	22,644	112,875	127,771	94,887	44,045
2001-2010	425,926	35,718	93,947	132,742	106,879	52,007
2011-2020	795,958	37,190	179,195	239,666	200,289	115,813
Total (%)	100.0	5.9	23.5	30.7	24.8	13.2

Source: Nepal Rastra Bank, 2023

Table 4.2 shows the average annual tourist arrival in Nepal for the periods 1993-2000, 2001-2010 and 2011-2020. The tourist aged less than 15 years has been increasing in Nepal. Similarly, the tourist aged between 16 to 30 years has increased since 1993 to 2020, however the average number is found to be decreased for the period 2001-2010. The average number of tourists aged from 31 to 60 above years is increasing.

In the period 1993-2020, 7.2 percent of the tourist arrived in Nepal were aged below 15 years, 24.6 percent were aged between 16 to 30 years, 31.4 percent were aged between 31 to 45 years, 24.4 percent were aged between 46 to 60 years and 11.7 percent were aged above 60 years. As the table has shown the most of tourist arrived in Nepal are aged between 31 to 45 years.

4.3.3 Distribution of Inbound Tourist Arrival by Gender

In this section of the study, the gender of the inbound tourist arrived in Nepal has been shown. From the period 1993 to 2020, the numbers of tourists from both genders are increasing. However, the average number of male tourists per year is higher than female.

Table 4.3: Gender of Inbound Tourist

Year	Male		Female		Total
	N	%	N	%	
19993-2000	239,340	59.78	162,885	40.23	402,225
2001-2010	255,244	60.41	170,683	39.59	425,926
2011-2020	426,722	53.63	369,236	46.48	795,958
Total (%)	56.6		43.4		100

Source: Nepal Rastra Bank, 2023

The percent of the male for the period 1993 to 2020 is found to be 56.6 years while 43.4 percent of the tourist arrived in Nepal for the period 1993 to 2020 were female.

4.3.4 Distribution of Inbound Tourist by Purpose of Visit

Tourists in Nepal are visiting for different purposes, such as holiday pleasure, trekking and mountaineering, business, trekking and so on.

Table 4.4: Purpose of Visit

Year	1993-2000	2001-2010	2011-2021	Total (%)
Holiday Pleasure	223,560	164,340	462,926	51.1
Trekking & Mountaineering	93,891	85,721	86,102	16.4
Business	24,444	20,176	11,111	3.4
Pilgrimage	10,149	44,789	85,165	9.4
Official	20,965	23,248	12,785	3.6
Conv./Conf.	5,578	3,841	5,691	1.0
Others	23,638	72,822	58,492	9.6

Source: Nepal Rastra Bank, 2023

The average number of tourist arrival for different purpose has been increasing except for business purpose and official purpose which are found to be decreasing in Nepal.

From the study period 1993 to 2021, 51.1 percent of the tourist visited Nepal for holiday pleasure, 16.4 percent of the tourist visited for mountaineering and trekking, 9.4 percent visited for pilgrimage and so on. The results shows that most of the tourist visited Nepal for holiday pleasure and mountaineering and trekking.

4.3.5 Top Five Countries on the Basis of Total Inbound Tourists

Table 4.5 shows the five countries for inbound tourists visiting Nepal.

Table 4.5: Top Five Countries for Total Inbound Tourists

Top 5 Countries	2011-2015	2016-2020
1	India	India
2	China	China
3	U.K.	U.S.A.
4	U.S.A.	Sri Lanka
5	Sri Lanka	U.K.

Source: Nepal Rastra Bank, 2023

From the table, it can be seen that, for the period 2011-2015, India ranked in first place from where the most of the tourist arrived in Nepal, followed by China, UK, USA and Sri Lanka.

Similarly, for the period 2016-2020, India ranked in top followed by China, USA, Sri Lanka and UK.

Hence, it can be said that India, China, UK, USA, and Sri Lanka are the major countries from where the most of the tourists come to visit Nepal.

4.3.6 Number of Trekkers in Different Trekking Area

Table 4.6 shows the average number of trekkers per year for the periods 2001-2005, 2006-2010, 2011-2015 and 2016-2020. The major popular destinations for trekking in Nepal are Mustang, Humla, Manaslu, Dolpa and many others.

The results shows that average number of the trekkers in different trekking destinations are increasing for the study period 2001 to 2020.

Table 4.6: Number of Trekkers

Year	2001-2005	2006-2010	2011-2015	2016-2020	Average
Mustang	703	1,238	3,067	3,228	2059
Lower Dolpa	203	575	856	889	631
UpperDolpa	153	269	414	602	359
Humla	452	1,335	1,341	8,602	2932
Manaslu	619	1,339	3,294	5,017	2567
Kanchanjunga	439	645	714	583	595
T.Valley			1,012	1,292	1168
Narphu			731	878	813
Others	197	775	926	491	618

Source: Nepal Rastra Bank, 2023

According to the average numbers of trekkers from 2001 to 2020, the most popular destination is Humla, followed by Manaslu and Mustang.

4.3.7 Top Five Conservation Area Based on Foreign Tourist Visit

Table 4.7 shows that top five conservation area and national park for foreign tourist visit for the year 2014-15 to 2019-20.

Table 4.7: Top Five Conservation Area for Foreign Tourist Visit

Conservation Area	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	Average
Annapurna Conservation Area	114,418	83,419	144,409	172,720	181,746	103,782	133,416
Chitwan National Park	178,257	87,391	139,125	118,621	142,486	92,994	126,479
Sagarmatha National Park	34,412	27,794	45,112	56,303	57,289	31,533	42,074
Shivapuri Nagarjuna NationalPark				16,813	12,496	8,692	12,667
Bardiya National Park	13,548	10,638	17,959	6,773	8,260	5,506	10,447

Source: Nepal Rastra Bank, 2023

From the table it can be seen that the foreign tourist visit has decreased in the year 2015/16 as compared to 2014/2015 due to devastating earthquake that hit in 2015 April followed by numbers of aftershocks. However, the number of foreign tourists into these areas was increasing year by year until the worldwide pandemic COVID-19 hit into the economy of Nepal causing health crisis and series of lockdown and ultimately resulting in less tourist arrival.

4.3.8 Foreign Exchange Earning from Tourism

Table 4.8 shows the foreign exchange earnings from tourism (in Rs. 10 million), its proportion of total foreign earnings and GDP of Nepal from the fiscal years 2074/75 to 2020/21.

The average foreign exchange earnings from tourism, its proportion of total foreign earnings and GDP have been calculated for the period 1974/75-1979/80, 1980/81-1989/90, 1990/91-1999/00, 2000/01-2009/10 and 2010/11-2020/21 by averaging the values for the given period of years.

Table 4.8: Foreign Exchange Earning from Tourism

Year	Total Foreign Exchange Earnings from Tourism (Rs. In 10 million)	As % of	
		Total Foreign Exchange Earnings	GDP
1974/75 to 1979/80	36.09	26.58	1.83
1980/81 to 1989/90	140.99	25.39	2.53
1990/91 to 1999/00	839.63	17.45	3.56
2000/01 to 2009/10	1551.63	6.96	2.27
2010/11 to 2020/21	10136.65	4.79	1.87

Source: Nepal Rastra Bank, 2023

Table 4.8 shows that the total foreign exchange earnings is increasing for the analysis period as the number is increasing. However, in terms of percentage of total foreign exchange earnings, the ratio is declining. This is results of total foreign earning in Nepal from remittance and other sources rather than tourism alone.

In terms of percentage of GDP, the foreign exchange earnings is increasing up to the period 1999/00 and it has started to decline for the years.

4.4Impact of Tourism on Economic Growth

4.4.1 Unit Root Test

The results of the Augmented Dickey-Fuller test for the time series are presented in the following table, where the lag length was determined using the Schwarz Information Criterion.

Table 4.9: Augmented Dickey-Fuller Unit Root Test Result

Variables	Includes	p-value
lnGDP	intercept only	0.0009
lnGFCF	intercept only	0.0000
lnTR	none	0.0036
lnGC	intercept only	0.0000
lnTV	trend and intercept	0.0068

Source: output of Eviews 10

The Augmented Dickey-Fuller unit root test indicates that variables such as GDP, GFCF, and TR are stationary at first difference (I(1)) with a significance level of 1%. However, variables GC and TV are stationary at level (I(0)) with a significance level of 1%. Furthermore, the test results demonstrate that none of the variables are stationary at second difference.

Therefore, since the variables exhibit stationarity at either level (I(0)) or first difference (I(1)), the Auto Regressive Distributed Lag Bounds Test model (ARDL) can be utilized to analyze the impact of independent variables on dependent variables in both the short run and the long run.

4.4.2 ARDL Estimates (Tourism Development on Economic Growth)

To estimate the influence of tourism on economic growth, an ARDL model was utilized. The dependent variable in the model is represented by lnGDP, while the independent variables include lnGC, lnGFCF, lnTR, and lnTV. The dataset comprises 47 observations spanning from 1975 to 2021.

Table 4. 9: Autoregressive distributed lag estimates

Model: lnGDP=f(lnGC, lnGFCF, lnTR, lnTV)

ARDL (4, 4, 0, 1, 0) selected based on Akaike Information Criteria (AIC)

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
lnGDP(-1)	-0.039	0.166	-0.234	0.816
lnGDP(-2)	0.061	0.146	0.421	0.677
lnGDP(-3)	0.314	0.140	2.238	0.033
lnGDP(-4)	0.351	0.154	2.282	0.030
lnGC	0.012	0.036	0.328	0.745
lnGC(-1)	0.161	0.044	3.665	0.001
lnGC(-2)	-0.034	0.046	-0.746	0.462
lnGC(-3)	-0.044	0.044	-1.008	0.322
lnGC(-4)	0.073	0.033	2.205	0.036
lnGFCF	0.073	0.036	2.038	0.051
lnTR	0.020	0.007	2.688	0.012
lnTR(-1)	-0.016	0.011	-1.400	0.172
lnTV	0.024	0.008	2.939	0.006
C	1.092	0.182	5.986	0.000
R-squared	0.999	Mean dependent var		11.486
Adjusted R-squared	0.999	S.D. dependent var		0.555
S.E. of regression	0.015	Akaike info criterion		-5.272
Sum squared resid.	0.007	Schwarz criterion		-4.699
Log likelihood	127.346	Hannan-Quinn criterion		-5.060
F-statistic	4275.846	Durbin-Watson stat		2.029
Prob(F-statistic)	0.000			

Source: Authors' estimation

In Table 4.10, the autoregressive distributed lag (ARDL) model automatically chosen by Eviews 10, based on the Akaike information criteria, is presented. The selected model is denoted as (4, 4, 0, 1, 0), indicating that the dependent variable lnGDP is influenced by the previous four periods of lnGDPs, the previous four periods of lnGCs, and the preceding one period of lnTRs. However, the variable lnGDP is not affected by past periods of lnGFCF and lnTV.

The R-squared (R^2) and adjusted R-squared values are both 0.99, indicating that 99% of the variability in the dependent variable can be accounted for by the independent variables.

Table 4. 10: Level Relationship among the Variables in the ARDL Model

Test Statistic	Value	Significance.	I(0)	I(1)
F-statistic	10.792	10%	2.2	3.09
k	4	5%	2.56	3.49
		2.50%	2.88	3.87
		1%	3.29	4.37

*Source:*Authors' estimation

In Table 4.11, the F-statistic is reported as 10.792, surpassing the upper bounds at all three levels of significance. This indicates the presence of a long-run relationship between the dependent variable and independent variables. Therefore, it can be inferred that the variables within the model demonstrate a tendency to move together over time.

Table 4. 11: Estimated Long-run Coefficients using ARDL approach

Variable	Coefficient	Std. Error	t-Statistic	Prob.
lnGC	0.532	0.109	4.897	0.000
lnGFCF	0.235	0.102	2.302	0.029
lnTR	0.013	0.037	0.361	0.721
lnTV	0.078	0.025	3.122	0.004
C	3.498	0.179	19.535	0.000

*Source:*Authors' estimation

The estimated long-run coefficients for lnGC, lnGFCF, and lnTV are found to be positive and statistically significant, suggesting a positive relationship between GDP and these independent variables. However, the coefficient of lnTR is statistically insignificant, indicating no significant long-run relationship between tourism receipts and GDP in the case of Nepal.

Specifically, the coefficient of lnGC is 0.532, implying that a 1% increase in government consumption leads to a 0.532% increase in GDP. Likewise, the coefficient of lnGFCF is 0.235, indicating that a 1% increase in gross fixed capital formation results in a 0.235% increase in GDP. Similarly, the coefficient of lnTV is

0.078, suggesting that a 1% increase in the ratio of trade volume leads to a 0.078% increase in GDP.

Table 4. 12: ARDL Error Correction Regression

ARDL (4, 4, 0, 1, 0) selected based on Akaike Information Criteria (AIC)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(lnGDP (-1))	-0.727	0.118	-6.142	0.000
D(lnGDP (-2))	-0.665	0.119	-5.587	0.000
D(lnGDP (-3))	-0.351	0.131	-2.685	0.012
D(lnGC)	0.012	0.026	0.449	0.657
D(lnGC(-1))	0.006	0.030	0.203	0.841
D(lnGC(-2))	-0.028	0.027	-1.058	0.299
D(lnGC(-3))	-0.073	0.026	-2.776	0.010
D(lnTR)	0.020	0.006	3.364	0.002
CointEq(-1)*	-0.312	0.036	-8.713	0.000

*Source:*Authors' estimation

In Table 4.13, it can be observed that the coefficient of CointEq(-1) is -0.312, and it is statistically significant at a 1% level of significance. This indicates the presence of a cointegrating relationship between the dependent variable, lnGDP, and its set of regressors. Consequently, it can be inferred that the dependent variable and the set of independent variables converge in the same direction over the long run.

The coefficients associated with the one-period, two-period, and three-period lagged changes in TFP (d(lnTFP(-1)), d(lnGDP(-2)), and d(lnGDP(-3)) are found to be positive and statistically significant. This suggests a strong influence of past period's GDP on the current level of GDP.

In terms of the short-term effects, the coefficient for the change in government expenditure (dlnGC) is positive but not statistically significant, indicating a limited immediate impact on economic growth. However, the coefficient of d(lnTR) is positive and also statistically significant at a value of 0.020. This indicates that tourism receipts have a positive effect on economic growth in the short run.

4.4.3 Diagnostic and Residual Test

The following are the results of the residual test and diagnostic test conducted on the ARDL model:

4.4.3.1Normality Test

In the normality test, the data is examined to determine if it follows a normal distribution. The null hypothesis being tested is that the data is normally distributed.

Table 4. 13: Normality Test

Jarque-Bera	0.917
Probability	0.632

*Source:*Authors' estimation

Table 4.14 presents a probability value of 0.632 as mentioned in appendix-10, which indicates that the null hypothesis, stating that the residual series is normally distributed, cannot be rejected. Therefore, based on this result, it can be concluded that the residuals are normally distributed.

4.4.3.2 Breusch Godfrey Serial Correlation LM Test

The Breusch-Godfrey serial correlation LM test is employed to detect autocorrelation in the errors of a regression model. This test utilizes the residuals obtained from the regression analysis, and a test statistic is derived from these residuals. The null hypothesis assumes the absence of any serial correlation up to order p.

Table 4. 14: Breusch-Godfrey Serial Correlation LM Test

F-statistic	0.036	Prob. F(2,27)	0.964
Obs*R-squared	0.116	Prob. Chi-Square(2)	0.944

*Source:*Authors' estimation

Table 4.15 displays a probability value of 0.944 for the Chi-square test. As a result, the null hypothesis cannot be rejected. Consequently, the null hypothesis, which suggests the absence of serial correlation, remains valid, indicating that there is no evidence of serial correlation in the data.

4.4.3.5Breusch Pagan Godfrey Heteroscedasticity Test

The presence of heteroscedasticity is a significant issue in regression analysis, including analysis of variance, as it can undermine the validity of statistical tests that assume uncorrelated and uniformly distributed errors with constant variances. When working with heteroscedastic data, regression analysis can still yield an unbiased estimate for the relationship between the predictor variable and the outcome.

However, the standard errors and inferences derived from data analysis become unreliable. Biased standard errors can result in distorted inferences, potentially leading to erroneous results in hypothesis testing.

Table 4. 155: Breusch-Pagan-Godfrey Heteroscedasticity Test

F-statistic	0.986	Prob. F(13,29)	0.488
Obs*R-squared	13.182	Prob. Chi-Square(13)	0.434
Scaled explained SS	3.854	Prob. Chi-Square(13)	0.993

Source:Authors' estimation

Table 4.16 presents a probability value of 0.434 for the Chi-square test. This value indicates that the null hypothesis, suggesting that the model is homoscedastic, cannot be rejected. Therefore, based on this result, it can be concluded that the model exhibits homoscedasticity.

4.4.3.6Ramsey RESET Test

The Ramsey Regression Equation Specification Error Test (RESET) is a widely used specification test for linear regression models. It examines whether including non-linear combinations of the fitted values improves the explanatory power of the model for the response variable. The underlying idea of the test is that if non-linear combinations of the independent variables contribute significantly to explaining the response variable, it suggests a model mis-specification. The purpose of this test is to assess the presence of omitted variables in the model by testing against the null hypothesis of no omitted variables.

Table 4. 16: Ramsey's RESET Test

	Value	df	Probability
t-statistic	1.368	28	0.182
F-statistic	1.873	(1, 28)	0.182

*Source:*Authors' estimation

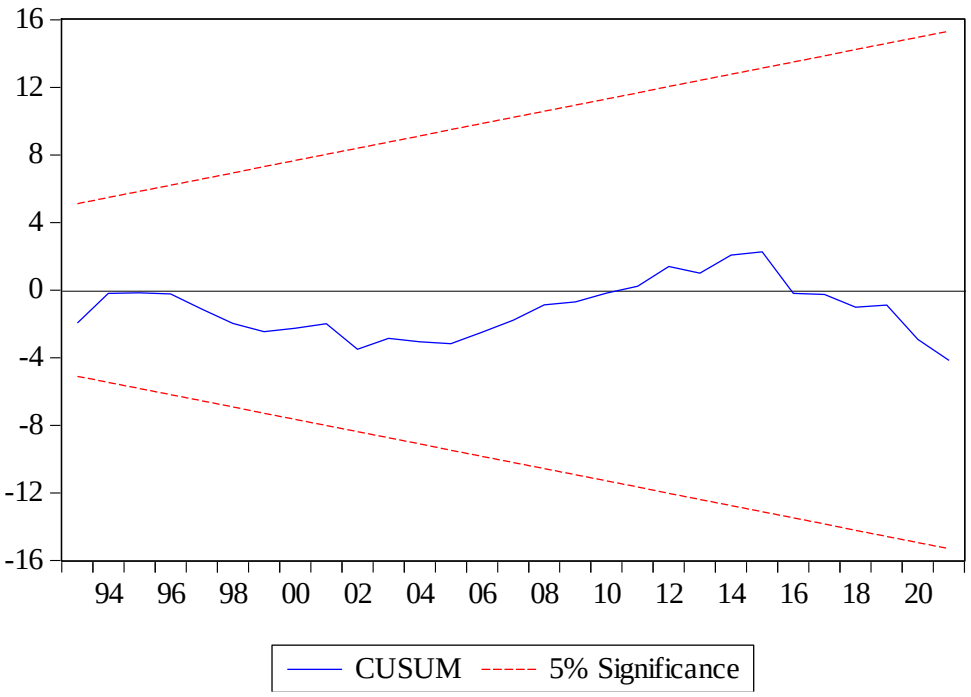
Based on the information presented in Table 4.17, it is evident that the t-statistic is noticeably lower than the critical value of 1.96 at a 5% level of significance. Additionally, the probability value is 0.182, suggesting that the null hypothesis cannot be rejected. Consequently, it can be concluded that the model does not possess any omitted variables.

4.4.3.7 CUSUM and CUSUMSQ Test

To assess the stability of the ARDL model, the cumulative sum of recursive residuals (CUSUM) and the CUSUM of squares (CUSUMSQ) are plotted. The CUSUM method involves calculating the cumulative sum of the residuals over time to evaluate any shifts or deviations from stability in the model.

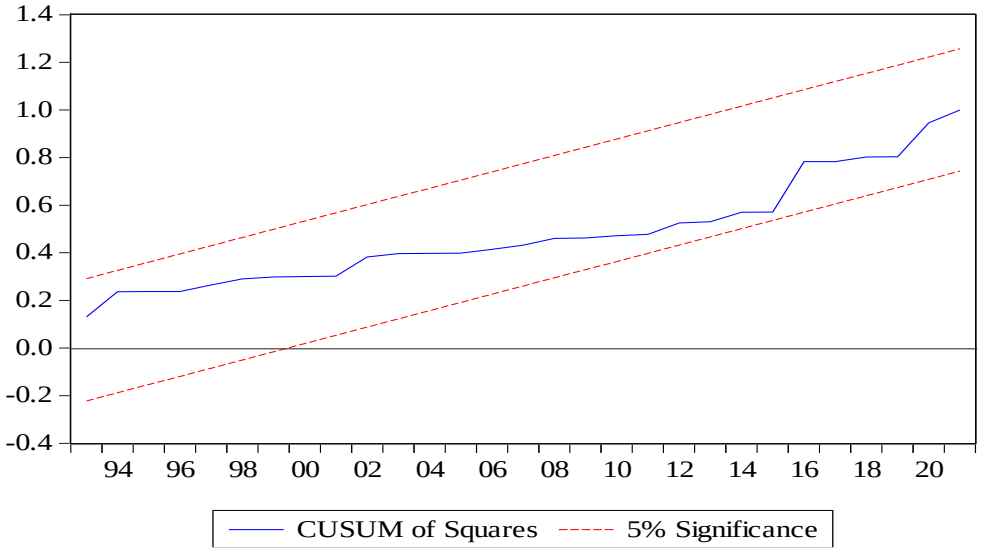
The CUSUM test, introduced by Brown et al. in 1975, examines the cumulative sum of the recursive residuals to detect parameter instability in a model. This analysis option involves plotting the cumulative sum alongside the 5% critical lines. If the cumulative sum exceeds the range between the two critical lines, it indicates the presence of parameter instability in the model.

Figure 4. 1: Plot of Cumulative Sum of Recursive Residuals



Source: Output of Eviews 10

Figure 4. 2: Plot of Cumulative Sum of Square of Recursive Residuals



Source: Output of Eviews 10

Figures 4.1 and 4.2 illustrate the cumulative sum of recursive residuals and the cumulative sum of squared recursive residuals, respectively. These figures clearly demonstrate that the CUSUM curves and CUSUMSQ curve remain within the boundaries defined by the 5% critical lines. Based on this observation, it can be inferred that the parameter space of the ARDL model of co-integration is stable, and the model is not mis-specified.

4.5 Discussions

The estimation of ARDL model shows that there is positive and significant relationship between government expenditure, gross fixed capital formation and total trade volume, and economic growth in the long-run.However, there is no long run relationship between tourism receipts and economic growth.

Moreno et al., (2019) also found positive relationship between government consumption expenditure and economic growth in Colombia. Dhungel (2022) explained that community expenditure in health and education leads to enhancement of human capital causing the positive effect on economic growth. Chen et al., (2020) also found that fiscal factors and investment had causal effects on economic growth, however it also found that government expenditure can have negative effect when financed by tax revenues by positively affects economic growth when financed by non-tax revenue and budget-deficit.

Moreno et al., (2019) also found the gross capital formation had positively affected economic growth. Dhungel (2018) found that gross fixed capital formation had positive effect on per capita income.

Furthermore, the results of the study showed that there is positive and significant relationship between total volume of trade and economic growth in the long-run. Were (2015) stated that economic growth and trade are positively related for both developed and developing countries, however the impact is insignificant for developing countries. Bhattarai and Karmacharya (2021) also found that there is positive and significant relationship between economic growth and trade volume both in short and long run.Dhungel (2018) also found that trade openness had positive effect on economic growth.

This study found that there is no relationship between tourism receipts and economic growth in the long run. Similarly results can be found for the studies Bhattarai and Karmacharya (2021), Singh et al (2010) and Oh (2005). Singh et al (2010) found no relationship between tourism receipts and GDP in Bahamian, Barbadian, and tourism product that is offered is unique to the Jamaican economies which can be explained by the higher leakage rate resulting in small multiplier effect. The absence of strategic plan may also cause the higher leakage rate. Suresh and Senthilnathan (2014) also found that there was unidirectional causality between economic growth and tourism earning, where economic growth only causes to tourism earnings but the tourism does not cause economic growth.

CHAPTER V

SUMMARY AND CONCLUSIONS

In this chapter, the summary of the study, major findings of the study, conclusions and recommendations based on the findings of the study are described.

5.1 Summary

This study examined the trend of inbound tourist arrival and tourism receipts in Nepal and examined impact of tourism on economic growth of Nepal. To conduct study, secondary data were used which is taken from Nepal Rastra Bank's website. The data included the GDP, gross fixed capital formation, government expenditure, tourism receipts and trade volume for the year 1975 to 2021.

Description analysis is used to examine the trend of inbound tourist arrival and tourism receipts in Nepal. Tabulation and mean were used for the description analysis. For the second objective of the study, regression analysis is conducted. The variables are rebased into common base year i.e., 2010/11. Real data is calculated dividing nominal data by GDP deflator.

Variables are expressed in logarithmic form. Unit root test was applied to examine the presence of unit root using Augmented Dickey Fuller test. Variables are found to be stationary at level and first difference. Autoregressive Distributed Lag model was used to examine the impact of different independent variables on dependent variable GDP. The independent variables are government consumption, gross fixed capital formation, tourism receipts and trade volume.

5.2 Major Findings

The major findings of the study are:

Trend of Inbound Tourist Arrival and Tourism Receipts in Nepal

The average annual tourist arrival by air and land in Nepal has been increasing. The average annual tourist arrival in the year 1964-1973 was 32,555 and number has been increasing since then and it was 721,702 per year for the period 2014-2021. Similarly, the rate of growth of tourist arrival is found to be fluctuating. The average length of stay of tourist is somehow remained constant for the years 1964 to 2013 and slight increase for the period 2014-2021. On the other hand, the rate of growth of tourist

arrival is found to be decreasing from the study period 1964 to 2003 due to internal conflict (civil war) in Nepal. However, the rate of growth of tourist arrival was found to be increased for the period 2004-2013 as in this period, Nepal experienced the end of internal conflict heading towards peace. Likewise, the rate of growth of tourist arrival for the period 2014-2021 is found to be negative (-7.03%) due to devastating earthquake and COVID-19 pandemic. Average number of male tourists per year is higher than femalebetween the age 31 to 45 years with a motive of holiday pleasure, mountaineering and trekking.

India, China, UK, USA, and Sri Lanka are the major countries from where the most of the tourists come to visit Nepal.According to the average numbers of trekkers from 2001 to 2020, the most popular destination is Humla, followed by Manaslu and Mustang. Similarly, Annapurna Conservation Area, Chitwan National Park, Sagarmatha National Park, Shivapuri Nagarjuna National Park and Bardiya National Park are top five conservation area and national parks that foreign tourist in Nepal. However, the average foreign exchange earnings from tourism is increasing for the study period. However, in terms of percentage of total foreign exchange earnings, the ratio is declining.

Impact of Tourism on Economic Growth

The estimated long-run coefficients for lnGC, lnGFCF, and lnTV are found to be positive and statistically significant, suggesting a positive relationship between GDP and these independent variables.Specifically, the coefficient of lnGC is 0.532, implying that a 1percent increase in government consumption leads to a 0.532 percent increase in GDP. Likewise, the coefficient of lnGFCF is 0.235, indicating that a 1percent increase in gross fixed capital formation results in a 0.235percent increase in GDP. Similarly, the coefficient of lnTV is 0.078, suggesting that a 1percent increase in the ratio of trade volume leads to a 0.078percent increase in GDP.However, the coefficient of lnTR is statistically insignificant, indicating no significant long-run relationship between tourism receipts and GDP in the case of Nepal.

In terms of the short-term effects, the coefficient for the change in government expenditure is positive but not statistically significant.The coefficient of d(lnTR) is positive and also statistically significant at a value of 0.020 indicating positive relation between tourism receipts and economic growth in short run

5.3 Conclusions

Hence it can be concluded that government consumption, gross fixed capital formation, and trade volume have positive and significant relation on economic growth in Nepal. However, there is no evidence of long run relationship between tourism receipts and economic growth in Nepal, though, significant and positive relation between tourism receipts and economic growth was found. This indicates that tourism has not contributing to economic growth in Nepal in the long run despite having the tremendous potential in tourism. The major problem in Nepalese tourism is low length of stay and low daily spending per tourist. If the focus is shifted into quality rather than quantity, there may be significant impact of tourism on national economy of Nepal.

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APPENDICES

Appendix-1: Number of Tourists Arrival and Length of Stay

Year	Annual Average tourist Arrival	Tourist Arrival		Average Stay (in days)	Annual Growth Rate (%)
		by Air	by Land		
1964	9,526	8,435	1,091	NA	30.90
1965	9,388	8,303	1,085	NA	-1.40
1966	12,567	11,206	1,361	NA	33.90
1967	18,093	15,064	3,029	NA	44.00
1968	24,209	19,717	4,492	NA	33.80
1969	34,901	28,130	6,771	NA	44.20
1970	45,970	36,508	9,462	NA	31.70
1971	49,914	40,369	9,545	NA	8.60
1972	52,930	42,484	10,446	NA	6.00
1973	68,047	55,791	12,256	NA	28.60
1974	89,838	74,170	15,668	13.20	32.00
1975	92,440	78,995	13,445	13.05	2.90
1976	105,108	90,498	14,610	12.40	13.70
1977	129,329	110,180	19,149	11.60	23.00
1978	156,123	133,034	26,089	11.80	20.70
1979	162,276	137,865	24,411	12.00	3.90
1980	162,897	139,387	23,510	11.20	0.40
1981	161,669	142,084	19,585	10.50	-0.80
1982	175,448	153,509	21,939	13.30	8.50
1983	179,405	152,470	26,935	11.50	2.30
1984	176,634	149,920	26,714	12.00	-1.50
1985	180,989	151,870	29,119	11.30	2.50
1986	223,331	182,751	40,586	11.20	23.40
1987	248,080	205,611	42,469	12.00	11.10
1988	265,943	234,945	30,998	12.00	7.20
1989	239,945	207,907	32,038	12.00	-9.78
1990	254,885	226,421	28,464	12.00	6.20
1991	292,995	267,932	25,063	9.25	15.00
1992	334,353	300,496	33,857	10.14	14.10
1993	293,567	254,140	39,427	11.94	-12.20
1994	326,531	289,381	37,150	10.00	11.20
1995	363,395	325,035	38,360	11.27	11.28
1996	393,613	343,246	50,367	13.50	8.30
1997	421,857	371,145	50,712	10.50	7.20
1998	463,684	398,008	65,676	10.80	9.90
1999	491,504	421,243	70,261	12.80	6.00
2000	463,646	376,914	86,732	11.88	-5.70
2001	361,237	299,514	61,723	11.93	-22.10
2002	275,466	218,660	56,808	7.92	-23.70
2003	338,132	275,428	62,704	9.60	22.70
2004	385,297	297,335	87,962	13.51	13.90
2005	375,398	277,346	98,052	9.10	-2.60

2006	383,926	283,819	100,107	10.20	2.30
2007	526,705	360,713	165,992	11.96	37.20
2008	500,277	374,661	125,616	11.78	-5.00
2009	509,956	379,322	130,634	11.32	1.90
2010	602,867	448,800	156,067	12.67	18.21
2011	736,215	545,221	190,994	13.12	22.10
2012	803,092	598,258	204,834	12.87	9.08
2013	797,616	594,848	202,768	12.51	-0.70
2014	790,118	585,981	204,137	12.40	-0.90
2015	538,970	407,412	131,558	12.80	-31.80
2016	753,002	572,563	180,439	13.40	39.70
2017	940,218	760,577	179,641	12.60	24.90
2018	1,173,072	969,278	203,785	12.40	24.80
2019	1,197,191	995,884	201,307	12.70	2.10
2020	230,085	183,130	46,955	15.10	-80.70
2021	150,962	150,625	337	15.50	-34.30

Source: Nepal Rastra Bank, 2023

Appendix-2: Tourist Arrivals by Age

Year	Annual Average tourist Arrival	Age Group				
		0-15	16-30	31-45	46-60	60+
1993	293567	15289	91947	96665	59768	29898
1994	326531	20097	96016	106260	66174	37984
1995	363395	22878	106603	120212	76647	37055
1996	393613	22185	94924	116307	89751	70446
1997	421857	23840	121286	126828	107111	42792
1998	463684	26763	122103	151846	121190	41782
1999	491504	30967	150307	155985	113314	40913
2000	463646	19136	119816	148063	125140	51491
2001	361237	14608	95801	115678	93621	41529
2002	275468	12425	67774	99622	67017	28630
2003	338132	16056	78357	99740	85753	58226
2004	385297	38734	84125	128267	96920	37251
2005	375398	30429	57115	114103	106077	67674
2006	383926	37433	75626	123541	95260	52066
2007	526705	38870	112879	164488	130756	69927
2008	500277	42581	106596	150171	121387	60531
2009	509956	84891	140805	141955	99197	39638
2010	602867	41156	120395	189852	172800	64593
2011	736215	32795	171081	212176	177983	82726
2012	803092	35468	181558	231117	201835	109239
2013	797616	46262	190630	237690	195416	115654
2014	790118	50441	185685	235738	183582	106666
2015	538970	19614	123444	157416	129614	74518
2016	753002	29825	154960	218479	199139	130627
2017	940218	35332	217143	292827	244342	141316
2018	1173072	54870	269648	360237	303452	173299
2019	1197191	57523	254399	383155	305651	176872
2020	230085	9768	43403	67829	61874	47211

Source: Nepal Rastra Bank, 2023

Appendix-3: Tourist Arrivals by Gender

Year	Male		Female		Total
	N	%	N	%	
1993	179178	61.0	114389	39.0	293567
1994	205389	62.9	121142	37.1	326531
1995	224769	61.9	138626	38.1	363395
1996	233055	59.2	160558	40.8	393613
1997	251358	59.6	170499	40.4	421857
1998	267871	57.8	195813	42.2	463684
1999	286161	58.2	205343	41.8	491504
2000	266937	57.6	196709	42.4	463646
2001	213465	59.1	147772	40.9	361237
2002	174710	63.4	100758	36.6	275468
2003	204732	60.5	133400	39.5	338132
2004	255303	66.3	129994	33.7	385297
2005	257972	68.7	117426	31.3	375398
2006	218818	57.0	165108	43.0	383926
2007	290688	55.2	236017	44.8	526705
2008	286983	57.4	213294	42.6	500277
2009	288155	56.5	221801	43.5	509956
2010	361611	60.0	241256	40.0	602867
2011	352059	47.8	384156	52.2	736215
2012	439270	54.7	363822	45.3	803092
2013	449058	56.3	348558	43.7	797616
2014	445627	56.4	344491	43.6	790118
2015	289158	53.7	249813	46.4	538970
2016	399091	53.0	353911	47.0	753002
2017	509585	54.2	430633	45.8	940218
2018	624928	53.3	548144	47.7	1173072
2019	634392	53.0	562799	47.0	1197191
2020	124048	53.9	106037	46.1	230085

Source: Nepal Rastra Bank, 2023

Appendix-4: Tourist Arrivals by Purpose of Visit

Year	Holiday Pleasure	Trekking & Mountaineering	Business	Pilgrimage	Official	Conv./Conf.	Others	Total
1993	170279	69619	19495	10429	15812	5367	2566	293567
1994	168155	76865	23522	5475	20431	5361	26722	326531
1995	183207	84787	21829	5257	20090	5272	42953	363395
1996	209377	88945	25079	4802	20191	6054	39165	393613
1997	249360	91525	27409	4068	24106	5824	19565	421857
1998	261347	112644	24954	16164	22123	5181	21271	463684
1999	290862	107960	23813	19198	24132	5965	19574	491504
2000	255889	118780	29454	15801	20832	5599	17291	463646
2001	187022	100828	18528	13816	18727	0	22316	361237
2002	110143	59279	16990	12366	17783	0	58907	275468
2003	97904	65721	19387	21395	21967	0	111758	338132
2004	167262	69442	13948	45664	17088	0	71893	385297
2006	145802	66931	21066	59298	18063	0	72766	383926
2007	217815	101320	24487	52594	21670	8019	78644	526705
2008	148180	104822	23039	45091	43044	6938	99634	500277
2009	140992	132929	22758	51542	24518	9985	87134	509956
2010	263938	70218	21377	101335	26374	9627	52347	602867
2011	425721	86260	17859	63783	24054	10836	37311	736215
2012	379627	105015	24785	109854	30460	13646	48540	803092
2013	437891	97309	30309	40678	39881	15952	62214	797616
2014	395849	97185	24494	98765	32395	13432	53728	790118
2015	3,86,065	9162	20876	14996	21479	9038	77354	538970
2016	489451	66490	24322	82830	21310	12801	55797	753002
2017	658153	75217	0	141033	0	0	65815	940218
2018	703843	187692	0	169180	0	0	112357	1173072
2019	778173	197786	0	171937	0	0	49301	1197191
2020	139202	28530	0	35893	0	0	26460	230085
2021	100843	15549	0	11172	0	0	23398	150962

Source: Nepal Rastra Bank, 2023

Appendix-5: Tourist Arrivals by Major Nationalities

Nationality	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Australia	19824	22030	20469	24516	14816	25507	33371	38429	38972	6793
Bangladesh			22410	21851	14831	23440	29060	26355	25849	4917
Canada	11404	13507	12132	11610	6495	12491	15105	17317	17102	3102
China	61917	71861	113173	123805	64675	104005	104664	153633	169543	19257
France	26720	28805	21842	24097	10885	20863	26140	31810	30646	4540
Germany	27472	30409	22263	18028	12216	23812	29918	36879	36641	5896
India	149504	165815	180974	135343	75124	118249	160832	194323	254150	40336
Italy	12621	14614	9974	10347	3972	9911	11840	15342	15676	1599
Japan	26283	28642	26694	25829	14465	22979	27326	29817	30534	5599
South Korea			19714	23205	18112	25171	34301	37218	29680	6944
Malaysia								22833	21329	3460
Myanmar						25796	30852	41402	36274	20911
Netherlands	16836	15445	10516	12320	4324	11453	13393	15353	15032	2563
Spain	16037	14549	10412	13110	4307	12255	15953	20214	19057	1625
Sri Lanka	59884	69476	32736	37546	43117	57521	45361	69640	55869	13328
Thailand			40969	33422	32338	26722	39154	52429	41653	20778
U.S.A.	42875	48985	47355	49830	53897	53645	79146	91895	93218	17767
U.K.	39091	41294	35668	36759	204469	46295	51058	63466	61144	11762
Others	179158	214638	78821	218639	171688	119245	174460		204822	38908
Total	736215	803092	797616	790118	538970	753002	940218	1173072	1197191	230085

Source: Nepal Rastra Bank, 2023

Appendix-6: Number of Trekkers in Different Trekking Area

Year	Mustang	Lower Dolpa	Upper Dolpa	Humla	Manaslu	Kanchanjunga	T.Valley	Narphu	Others	Total
2001	922	488	119	337	798	690				3354
2002	536	0	119	339	428	478			79	1979
2003	572	0	369	223	645	402			154	2365
2004	825	329	77	577	682	458			275	3223
2005	661	200	81	782	544	167			279	2714
2006	248	225	92	1256	561	335			395	3112
2007	1282	419	198	1542	895	404			587	5327
2008	838	709	383	1065	1443	1490			520	6448
2009	1659	739	313	1177	1635	508			948	6979
2010	2162	785	358	1633	2162	488			1427	9015
2011	2950	808	397	1758	2813	591			1398	10715
2012	2965	982	536	1508	3319	635	780	515	392	11632
2013	2862	585	338	1603	4439	837	1179	862	232	12937
2014	3883	1117	469	492	3764	777	1454	776	2333	15065
2015	2673	788	328	1346	2134	731	636	770	273	9679
2016	3984	1023	531	10105	4650	502	1219	903	356	23569
2017	4240	924	425	13398	6632	479	1681	1115	1099	29993
2018	4116	1222	525	10814	7371	970	2030	1291	537	28876
2019	3739	1263	1530	8670	6070	911	1393	1066	437	24079
2020	62	12	1	22	360	55	138	17	25	692

Source: Nepal Rastra Bank, 2023

Appendix-7: Number of Foreign Visitors to National Parks & Conservation Areas

Conservation Area	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20
Chitwan National Park	178257	87391	139125	118621	142486	92994
Bardiya National Park	13548	10638	17959	6773	8260	5506
Langtang National Park	12265	5016	8254	10619	12132	8242
Sagarmatha National Park	34412	27794	45112	56303	57289	31533
Rara National Park	143	132	201	317	421	256
SheyPhoksundo National Park	383	431	535	469	578	426
Khaptad National Park	2	21	26	21	67	16
Makalu Barun National Park	1270	828	1537	1252	2057	1425
Shivapuri Nagarjun NationalPark	NA	NA	NA	16813	12496	8692
Banke National Park	0	0	4	1	12	8
Shukla Phata Wildlife Reserve	NA	NA	NA	464	329	172
KoshiTappu Wildlife Reserve	NA	NA	NA	436	388	198
Parsa Wildlife Reserve	263	235	417	95	15	14
Dhorpatan Hunting Reserve	0	91	163	119	424	75
Krishnasar Conservation Area	NA	NA	NA	43	37	34
Apinappa Consersation Area	3	29	19	36	38	7
Kanchanjunga ConservationArea	0	502	479	821	806	584
Annapurna Conservation Area	114418	83419	144409	172720	181746	103782
Manaslu Conservation Area	5658	2287	5745	7200	7655	5388
Gaurishankar Conservation Area	2818	1840	2770	2668	2528	1523
Total	363440	220654	366755	395791	429764	260875

Source: Nepal Rastra Bank, 2023

Appendix- 8: Foreign Exchange Earnings from Tourism

Year	Total Foreign Exchange Earnings from Tourism (Rs. In 10 million)	As % of	
		Total Foreign Exchange Earnings	GDP
1974/75	17.06	30.2	1.0
1975/76	20.99	24.4	1.2
1976/77	28.80	26.3	1.7
1977/78	36.32	24.8	1.9
1978/79	49.71	26.9	2.3
1979/80	63.68	26.9	2.9
1980/81	77.34	29.2	3.1
1981/82	84.15	36.8	3.0
1982/83	84.42	37.3	2.5
1983/84	56.10	19.7	1.4
1984/85	73.54	19.8	1.6
1985/86	107.10	18.5	2.0
1986/87	174.05	26.6	2.9
1987/88	167.57	18.2	2.3
1988/89	273.53	24.5	3.3
1989/90	312.12	23.3	3.2
1990/91	358.76	21.8	3.2
1991/92	501.69	20.0	3.6
1992/93	596.60	17.6	3.7
1993/94	825.17	18.9	4.1
1994/95	897.32	17.3	4.1
1995/96	952.12	21.4	3.8
1996/97	852.30	17.6	3.0
1997/98	988.16	15.2	3.3
1998/99	1216.78	15.9	3.6
1999/00	1207.39	8.8	3.2
2000/01	1171.70	7.4	2.7
2001/02	865.43	6.1	1.9
2002/03	1174.77	8.2	2.4
2003/04	1814.74	11.4	3.4
2004/05	1046.40	6.1	1.8
2005/06	955.60	4.6	1.5
2006/07	1012.50	4.5	1.4
2007/08	1865.30	6.7	2.3
2008/09	2796.00	6.5	2.9
2009/10	2813.90	8.1	2.4
2010/11	2461.10	7.5	1.6
2011/12	3070.40	4.7	1.8
2012/13	3421.10	4.7	2.0

2013/14	4637.50	5.2	2.4
2014/15	5342.90	5.3	2.5
2015/16	4176.50	4.0	1.9
2016/17	5852.70	5.1	2.2
2017/18	6852.20	5.7	2.3
2018/19	7537.40	5.4	2.2
2019/20	60885.00	4.6	1.5
2020/21	7266.30	0.5	0.2

Source: Nepal Rastra Bank, 2023

Appendix- 9: Nominal Variables and GDP Deflator

Fiscal Year	NGDP	DEF	NGFCF	NTR	NGC	NTV
1974/75	1660.10	4.75	222.70	170.60	151.38	88.96
1975/76	1739.40	4.81	244.30	209.90	191.34	118.58
1976/77	1728.00	4.73	258.00	288.00	233.04	116.47
1977/78	1972.70	5.24	329.34	363.20	267.49	104.62
1978/79	2612.80	6.79	383.78	497.10	302.05	129.68
1979/80	2335.10	6.16	368.10	636.80	347.07	115.05
1980/81	2553.00	6.55	429.90	773.40	409.23	160.87
1981/82	3098.80	7.12	546.50	841.50	536.13	149.15
1982/83	3382.10	7.74	658.77	844.20	697.92	113.20
1983/84	3929.00	8.26	688.95	561.00	743.73	170.39
1984/85	46587.00	9.30	938.60	735.40	839.48	274.06
1985/86	5573.40	10.63	943.10	1071.00	979.71	307.80
1986/87	6386.40	11.98	1182.50	1740.50	1151.32	299.14
1987/88	7690.60	13.40	1341.40	1675.70	1410.50	411.45
1988/89	8927.00	14.91	1639.20	2735.30	1800.50	419.53
1989/90	10341.60	16.50	1700.20	3121.20	1966.93	515.62
1990/91	12037.00	18.06	2278.00	3587.60	2354.98	738.75
1991/92	14948.70	21.54	2927.60	5016.90	2641.82	1370.65
1992/93	17149.20	23.80	3727.80	5966.00	3089.77	1726.65
1993/94	19927.20	25.55	4203.20	8251.70	3359.74	1929.34
1994/95	21917.50	27.16	4837.00	8973.20	3906.00	1763.92
1995/96	24891.30	29.29	5608.10	9521.20	4654.24	1988.11
1996/97	28051.30	31.36	6079.40	8523.00	5072.38	2263.65
1997/98	30084.50	32.67	6537.50	9881.60	5611.83	2751.35
1998/99	34203.60	35.55	6526.90	12167.80	5957.90	3567.63
1999/00	37948.80	37.16	7332.40	12073.90	6627.25	4982.27
2000/01	44151.85	40.94	8475.06	11717.00	7983.51	5565.41
2001/02	45944.26	42.55	8988.93	8654.30	8007.22	4694.48
2002/03	49223.08	43.85	9807.28	11747.70	8400.61	4993.06
2003/04	53674.91	45.68	10918.13	18147.40	8944.26	5391.07
2004/05	58941.17	48.48	11753.89	10463.80	10256.05	5870.57
2005/06	65408.41	52.04	13553.20	9555.80	11088.92	6023.41
2006/07	72782.70	56.00	15333.69	10125.30	13360.46	5938.31
2007/08	81565.82	59.15	17844.55	18653.10	16134.99	5926.65
2008/09	98827.15	68.56	21103.90	27959.80	21966.19	6769.75
2009/10	119277.36	78.94	26488.75	28138.60	25968.91	6082.40

2010/11	155922.18	100.00	37398.92	24610.70	29536.35	6433.85
2011/12	175837.92	107.74	42184.23	30703.80	33916.75	7426.10
2012/13	194929.48	115.37	48206.51	34210.60	35863.80	7691.71
2013/14	223252.53	124.64	56375.92	46374.90	43505.23	9199.14
2014/15	242363.85	130.14	66780.47	53428.60	53134.00	8531.91
2015/16	260818.44	139.44	74868.51	41765.30	60103.19	7011.71
2016/17	307714.49	150.96	94085.05	58526.90	83724.71	7304.91
2017/18	345594.93	157.54	112086.39	68521.70	108727.99	8135.98
2018/19	385893.04	164.93	130490.22	75374.10	111045.71	9710.95
2019/20	388870.37	170.24	118485.77	60885.00	109133.31	9770.91

Source: Nepal Rastra Bank

Appendix-10: Results of Unit Root Test

Unit Root Test of lnGDP

Null Hypothesis: D(LNGDP) has a unit root
Exogenous: Constant
Lag Length: 2 (Automatic - based on SIC, maxlag=9)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-4.44477	0.0009
Test critical values:	1% level	-3.59246	
	5% level	-2.9314	
	10% level	-2.60394	

*MacKinnon (1996) one-sided p-values.

Unit Root Test of lnGFCF

Null Hypothesis: D(LNGFCF) has a unit root
Exogenous: Constant
Lag Length: 0 (Automatic - based on SIC, maxlag=9)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-8.68147	0.0000
Test critical values:	1% level	-3.58474	
	5% level	-2.92814	
	10% level	-2.60223	

*MacKinnon (1996) one-sided p-values.

Unit Root Test of lnTR

Null Hypothesis: D(LNTR) has a unit root
Exogenous: None
Lag Length: 0 (Automatic - based on SIC, maxlag=9)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-2.99169	0.0036
Test critical values:	1% level	-2.61736	
	5% level	-1.94831	
	10% level	-1.61223	

*MacKinnon (1996) one-sided p-values.

Unit Root Test of lnGC

Null Hypothesis: D(LNGC) has a unit root
Exogenous: Constant
Lag Length: 0 (Automatic - based on SIC, maxlag=9)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-5.97915	0
Test critical values:	1% level	-3.58474	
	5% level	-2.92814	
	10% level	-2.60223	

*MacKinnon (1996) one-sided p-values.

Unit Root Test of lnTV

Null Hypothesis: LNTV has a unit root

Exogenous: Constant, Linear Trend

Lag Length: 9 (Automatic - based on SIC, maxlag=9)

Augmented Dickey-Fuller test statistic		t-Statistic	Prob.*
		-4.38265	0.0068
Test critical values:	1% level	-4.22682	
	5% level	-3.5366	
	10% level	-3.20032	

*MacKinnon (1996) one-sided p-values.

Appendix-11: Model Testing

Independent variables: GC, GFCF, TR, TV

Long Run

Levels Equation
Case 2: Restricted Constant and No Trend

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LNGC	0.532237	0.108679	4.897348	0.0000
LNGFCF	0.234615	0.101932	2.301683	0.0287
LNTR	0.013375	0.037058	0.360920	0.7208
LNTV	0.077911	0.024957	3.121882	0.0040
C	3.497988	0.179058	19.53549	0.0000

F-Bounds Test — Null Hypothesis: No levels relationship

Test Statistic	Value	Signif.	I(0)	I(1)
			Asymptotic: n=1000	
F-statistic	10.79213	10%	2.2	3.09
k	4	5%	2.56	3.49
		2.5%	2.88	3.87
		1%	3.29	4.37

Error Correction

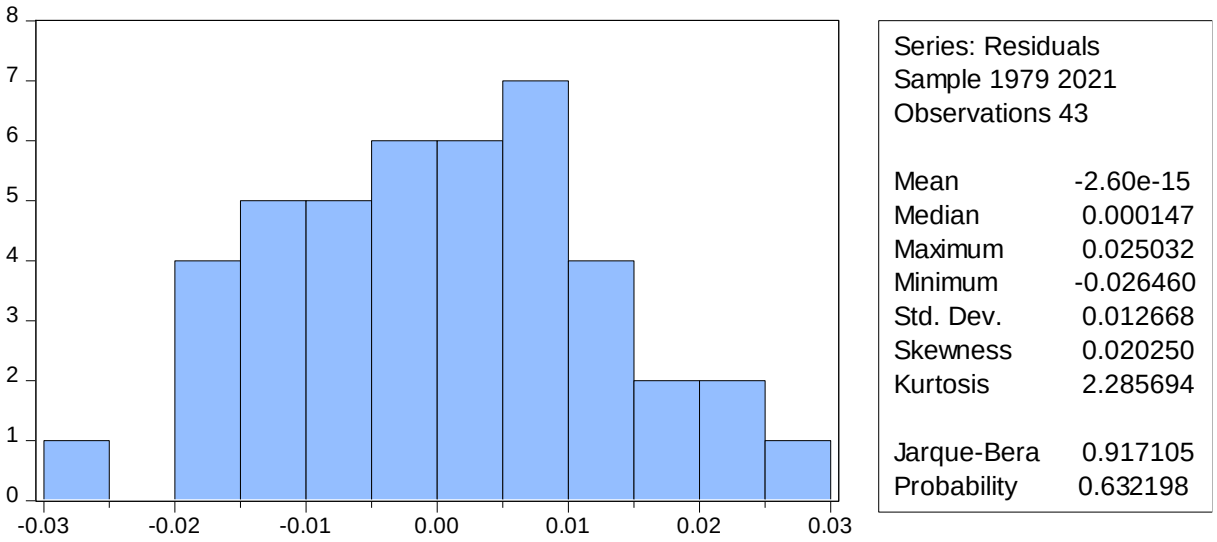
ECM Regression
Case 2: Restricted Constant and No Trend

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(LNGDP(-1))	-0.726601	0.118294	-6.142346	0.0000
D(LNGDP(-2))	-0.665252	0.119075	-5.586840	0.0000
D(LNGDP(-3))	-0.351014	0.130729	-2.685062	0.0119
D(LNGC)	0.011741	0.026154	0.448922	0.6568
D(LNGC(-1))	0.006090	0.029986	0.203088	0.8405
D(LNGC(-2))	-0.028311	0.026759	-1.058014	0.2988
D(LNGC(-3))	-0.072515	0.026118	-2.776459	0.0095

D(LNTR)	0.020098	0.005975	3.363638	0.0022
CointEq(-1)*	-0.312294	0.035842	-8.713038	0.0000

Residual test

Normality test



Breusch Godfrey Serial correlation

F-statistic	0.036460	Prob. F(2,27)	0.9642
Obs*R-squared	0.115819	Prob. Chi-Square(2)	0.9437

Breusch pagan Godfrey Heteroscedasticity test

F-statistic	0.986189	Prob. F(13,29)	0.4875
Obs*R-squared	13.18206	Prob. Chi-Square(13)	0.4338
Scaled explained SS	3.854341	Prob. Chi-Square(13)	0.9926

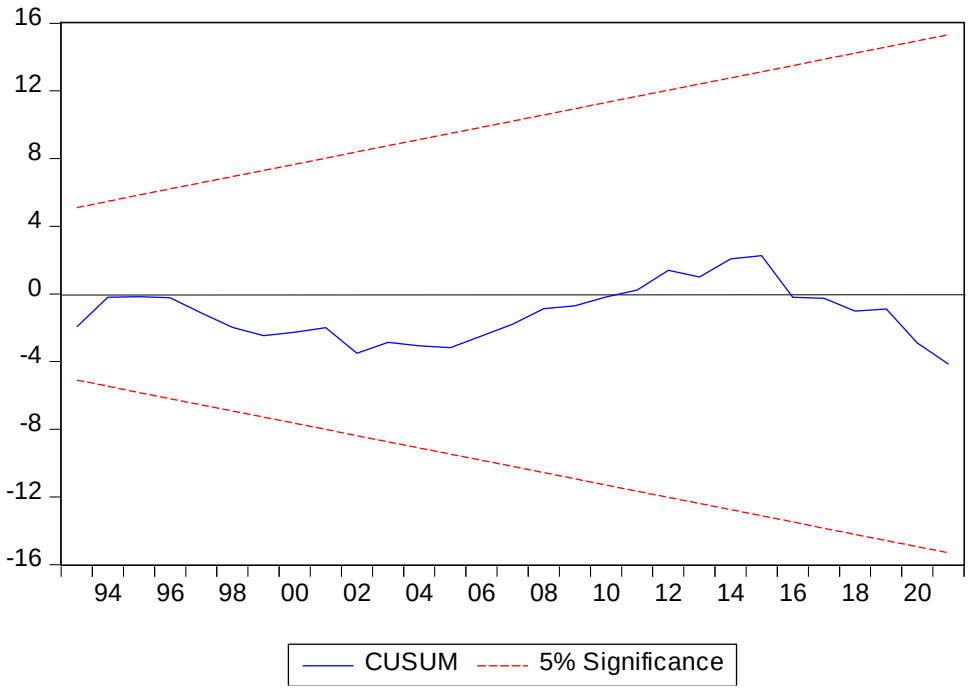
Stability test

Ramsey RESET test

Value	df	Probability

t-statistic	1.368484	28	0.1820
F-statistic	1.872749	(1, 28)	0.1820

CUSUM test



CUSUMSQ test