An appraisal of the impact of international trade on economic growth of Indian Subcontinent

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By

Shahista Khadar Khanum

22P0100039

193-726-317-008

201909450

Under the Supervision of

Ankita Chari

Goa University

Masters in Economics

Goa University/Goa Business School

Date:

Examine by:

Seal of the School

DECLARATION BY STUDENT

I hereby declare that the data presented in the dissertation report, "An Appraisal of the Impact of International Trade on Economic Growth on Indian Subcontinent: An Empirical Analysis is based on the results of investigations carried out by me in the Goa Business School at the Goa University under the Supervision of Ms Ankita Chari and the same has not been submitted elsewhere for the award of degree of diploma by me. Further, I understand that Goa University or its authorities/college will not be responsible for the correctness of observations / experimental or other findings given the dissertation. I hereby authorise the University/College authorities to upload this dissertation on the dissertation repository or anywhere else as the UGC regulations demand and make it available to anyone has needed.

Shahistha Khader Khanum

Date: 09/5/2024
of Student

Signature and Name

Place of Goa University

Seat no. 22P0100039

COMPLETION CERTIFICATE

This is to certify that the dissertation report **"An Appraisal of Impact of International trade on Economic Growth of Indian Subcontinent"** is a Bonafide work carried out by

Ms Shahista khadar khanum under my supervision in partial fulfilment of the requirements for the award of the degree of M.A Economics in the Discipline Goa Business School at the University.

09/05/24
Ankita N. Chari

Signature and Name of Supervising Teacher

Date:

Goa Business School ★ Goa University ★

Signature of Dean of the School/Ho of Dept

School/Dept Stamp

Date: 11/05/2024

Place: Goa University

PREFACE

This project aims to explore and analyze the impact of international trade on the economic growth of the Indian subcontinent, focusing on India, Bangladesh, Pakistan, Sri Lanka, and Nepal. Through a comprehensive examination of trade patterns, policies, and macroeconomic indicators, the study seeks to uncover the complex interplay between international trade and economic growth in these nations. Employing a mixed-methods approach, including gathering data on international trade and conducting econometric analysis, the project aims to investigate the relationship between trade and key economic indicators such as GDP growth, investment, employment, and poverty levels. Understanding this relationship is crucial for policymakers, businesses, academics, and development practitioners, and the findings are expected to contribute to the existing body of knowledge on international trade and economic growth, particularly in the context of developing countries. Overall, the project endeavors to provide valuable insights into the impact of international trade on economic growth in the Indian subcontinent.

Abstract

This dissertation delves into the intricate relationship between international trade and economic growth in the Indian Subcontinent, focusing on India and its neighbouring countries. Employing empirical research and advanced panel data analysis techniques, it scrutinizes how international trade impacts key economic indicators and GDP growth rates in the region. Beginning with a historical context, it underscores the pivotal role of trade in today's globalized world and underscores the significance of trade policies in shaping economic outcomes. The study aims to investigate the influence of international trade on economic growth in South Asia, outlining specific objectives such as assessing the impact of trade on economic growth and examining the effects of trade policy changes on development. Methodologically, it employs panel data analysis techniques and conducts various statistical tests to ensure the reliability of the findings. The results reveal that imports, in particular, significantly drive economic growth in the Indian Subcontinent, while other indicators like exports and inflation exhibit varying degrees of influence. By shedding light on these dynamics, the dissertation offers valuable insights for policymakers, researchers, and stakeholders, aiming to guide efforts towards sustainable economic development and prosperity in the region.

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I am deeply thankful to the faculty members of Goa University whose teachings, mentorship, and scholarly insights have broadened my understanding of the subject matter and inspired

me to pursue academic excellence.

I am grateful to the participants of this study and all those who have generously shared their time, knowledge. Finally, I express my deepest gratitude to the academic community, research scholars, and authors whose work has served as a source of inspiration, knowledge, and reference for this dissertation.

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Abbreviation used

Entity	**Abbreviations**
Gross domestic product	GDP
Imports	IMP
Exports	EXP
Inflation	ING
Gross Fixed Capital Formation	GFCF
Log of Gross domestic product	LGDP
Log of Imports	LIMP
log of Exports	LEXP
Log of Inflation	LINF
Log of Gross Fixed Capital Formation	LGFCF

CHAPTER 1
INTRODUCTION

1.1 Background

International trade refers to the exchange of goods and services between countries. As trade barriers decrease and trade volumes increase, there's a lot of discussion and analysis about how this impacts the economic growth of nations. Looking back in history, we see that countries involved in international trade tend to be more productive compared to those focused only on domestic markets. Whether this relationship between trade and economic growth is positive or negative depends on how countries manage their trade policies. Nowadays, almost every country relies on trade with others to thrive. Both classical and neo-classical economists emphasize the role of international trade in driving economic growth. The relationship between international trade and economic growth in the Indian Subcontinent, comprising countries like India, Pakistan, Bhutan, Nepal, Bangladesh, and Sri Lanka, is significant. Increased international trade and reduced trade barriers have sparked discussions on their impact on economic growth within these nations.

Historical evidence suggests that countries actively engaged in international trade tend to be more productive than those solely focused on domestic markets. However, the nature of this relationship can vary, depending on the economic frameworks implemented to manage trade.

In today's interconnected world, virtually no country can thrive in isolation, highlighting the importance of trade relationships. Both classical and neo-classical economists emphasize international trade as a driver of economic growth. However, the effectiveness of international trade policies and their implementation plays a crucial role in determining the extent to which these countries benefit from global trade opportunities. It is on this note that the study intends

to examine the relationship between international trade and economic growth of Indian Subcontinents.

1.2 AIMS AND OBJECTIVES

AIM

The Aim of this paper is to investigate the impact of International Trade on Economic growth of Selected South Indian subcontinents.

The aim of this dissertation is to comprehensively analyse the relationship between international trade and economic growth in the South Asian subcontinent, focusing on India, Bangladesh, Pakistan, Sri Lanka, and Nepal. Specifically, the study aims to achieve the following objectives:

Investigate the impact of international trade on the economic growth of the South Asian Subcontinent, with a particular emphasis on India and its neighbouring countries.

Assess the influence of key economic indicators, including imports, exports, inflation, and gross fixed capital formation (GFCF), on GDP growth across the selected countries in the South Asian subcontinent.

Explore the effect of changes in trade policies on GDP growth rates and gross fixed capital formation (GFCF), examining the policy dynamics and their implications for economic development in the region.

OBJECTIVES

The objectives of the study are to:

a. Examine the impact of international trade on economic growth of India Subcontinents

b. Evaluate the impact of Economic Indicators (Imports, Exports, Inflation & Gross Fixed Capital Formation (GFCF)) on GDP growth across selected countries.

1.3 HYPOTHESIS/RESEARCH QUESTIONS

HYPOTHESIS

Null Hypothesis (H0): The Null hypothesis that random effects model is consistent with the fixed effects model can be rejected

Alternative Hypothesis (H1): The alternative hypothesis that random effects model is consistent with the fixed effects model cannot be rejected

RESEARCH QUESTIONS

What is the impact of international trade on economic growth of India Subcontinents?

What is the impact of Economic Indicators (Imports, Exports, Inflation & Gross Fixed Capital Formation (GFCF)) on GDP growth across selected countries?

1.4 SCOPE

This study aims to conduct a comprehensive appraisal of the impact of international trade on the economic growth of the Indian Subcontinent. To achieve this, the following objectives will be pursued. Firstly, we will examine the impact of international trade on economic growth by analysing historical data to understand the trends and patterns of trade within the region and assessing the correlation between trade volumes (imports and exports) and GDP growth rates across selected countries. Additionally, we will evaluate the impact of key economic indicators, including imports, exports, inflation, and gross fixed capital formation (GFCF), on GDP growth rates through regression analysis and econometric modelling. By exploring the relationship between these indicators and GDP growth, we aim to identify significant trends and factors influencing economic growth in the region. Furthermore, we will examine how changes in trade policies, such as tariffs, quotas, and trade agreements, have influenced GDP growth rates and gross fixed capital formation (GFCF) over time. Case studies on selected countries within the Indian Subcontinent will provide context-specific insights, while comparative analysis will discern common trends and variations. Methodologically, the study will involve data collection from reliable sources, statistical analysis techniques, and policy recommendations based on the findings. Despite potential limitations such as data availability and external factors, this study endeavours to provide valuable insights into the complex dynamics of international trade and economic growth in the Indian Subcontinent, informing evidence-based decision-making for sustainable development in the region

CHAPTER 2

LITERATURE REVIEW

(Kehinde .O.)study explores the impact of international trade on the economic growth of Nigeria in the context of the 21st century. The authors investigate how Nigeria's participation in international trade has influenced its economic development over recent years. They analyze various trade-related factors such as imports, exports, trade balance, and GDP growth rates to assess the relationship between international trade and economic growth in Nigeria. Through empirical analysis and statistical methods, the paper aims to identify the mechanisms through which trade affects economic performance and to provide insights for policymakers on strategies to leverage international trade for sustainable growth in Nigeria.(**Kehinde .O.)**paper delves into the relationship between foreign trade and economic growth in Nigeria through empirical analysis. The authors examine how Nigeria's foreign trade activities have influenced its economic development. Using statistical methods and empirical data, they investigate the impact of factors such as imports, exports, trade balance, and GDP growth rates on Nigeria's overall economic growth. By analyzing the empirical evidence, the paper aims to provide insights into the dynamics of foreign trade and its implications for economic growth in Nigeria. This research contributes to the understanding of the role of international trade in shaping Nigeria's economic trajectory and offers valuable insights for policymakers and stakeholders. **JayatiG. (2006)** in her paper investigates the implications of trade liberalization and economic restructuring for India's industrial development. The author examines whether India can bypass the traditional industrialization phase and transition directly into a more advanced economic structure. Focusing on the context of trade liberalization policies implemented in India, the paper discusses the potential challenges and opportunities associated with this process. Through critical analysis and discussion, the paper aims to assess the feasibility and

consequences of skipping the industrial phase in India's economic transformation. This research contributes to the ongoing debate on trade policy and economic development strategies in India. paper examines the effects of trade liberalization on the economic performance of member countries of the Organization of Islamic Cooperation (OIC). The author investigates how trade liberalization policies have influenced key economic indicators such as GDP growth, trade volume, and foreign direct investment (FDI) inflows in OIC member countries. Through empirical analysis and statistical methods, the paper aims to identify the impacts of trade liberalization on economic development within the OIC context. The findings contribute to the understanding of the relationship between trade policies and economic performance in OIC member countries, providing insights for policymakers and stakeholders involved in economic cooperation and development initiatives within the Islamic world. **UNCTAD(2010)** report investigates the impact of international trade on poverty in India through an empirical approach. The study focuses on understanding how trade policies and activities affect the welfare of the poor in India. Using empirical data and analytical methods, the report examines various channels through which international trade influences poverty levels, income distribution, and social welfare outcomes in India. By assessing the empirical evidence, the report aims to provide insights into the complex relationship between trade and poverty reduction efforts in India. The findings contribute to the ongoing discourse on trade policy formulation and poverty alleviation strategies, offering valuable insights for policymakers, researchers, and practitioners concerned with inclusive and sustainable development in India.**(Pesaran et al.).** This paper introduces bound testing approaches as a method for analysing level relationships in econometrics. The authors propose these approaches as an alternative to traditional methods such as the Johansen procedure for cointegration analysis. Bound testing involves testing for the presence of a long-run relationship among variables while considering potential structural breaks or shifts in the data.

The paper outlines the theoretical foundation of bound testing and provides practical guidelines for its implementation. Through empirical analysis and simulation studies, the authors demonstrate the usefulness and robustness of bound testing methods in identifying cointegration relationships and modelling long-run dynamics in economic and financial data. This research contributes to advancing econometric techniques for analysing level relationships and provides valuable insights for applied econometric research. **Shreesh, B. & Kishore, K. (2012)**. This paper examines the effects of international liberalization on the Indian economy. The authors investigate how opening up to international trade and investment has influenced various aspects of India's economic performance and development. Through empirical analysis and theoretical frameworks, the paper explores the impacts of international liberalization on key macroeconomic indicators such as GDP growth, trade volume, foreign direct investment (FDI), employment, and income distribution. By evaluating the empirical evidence and discussing the theoretical underpinnings, the paper aims to provide insights into the dynamics of India's integration into the global economy and its implications for economic growth, structural transformation, and welfare outcomes. This research contributes to the understanding of the opportunities and challenges associated with international liberalization in emerging markets like India. **This unpublished thesis investigates the effects of international trade on economic growth in Nigeria**. The author examines how participation in international trade activities influences the overall economic performance and growth trajectory of Nigeria. Through a comprehensive analysis of trade data, economic indicators, and theoretical frameworks, the paper explores the channels through which international trade impacts economic growth in Nigeria. By assessing the empirical evidence and theoretical arguments, the thesis aims to provide insights into the relationship between trade openness, export-import dynamics, and economic development outcomes in Nigeria. This research contributes to the ongoing discourse on trade policy formulation and economic development strategies in

Nigeria, offering valuable insights for policymakers, researchers, and stakeholders interested in promoting sustainable and inclusive growth in the country. **(Sengupta and Puri)**In their article, Pooja Sengupta and Roma Puri explore the relationship between Foreign Direct Investment (FDI) and Gross Domestic Product (GDP) in India and its neighbouring countries. The authors likely delve into how FDI inflows impact economic growth as measured by GDP, comparing the patterns and dynamics across India and its neighbouring nations. This analysis would likely involve examining trends in FDI inflows, their sectors of allocation, and their subsequent effects on GDP growth rates. Through this comparative study, the authors may provide insights into the varying degrees of FDI's influence on economic development in the region, shedding light on potential policy implications for fostering sustainable growth. **(Jayaraman and Choong)**This paper by T. K. Jayaraman and Chee-Keong Choong, the focus is on examining the concept of economic integration within the Indian subcontinent. The authors likely investigate the extent to which countries in the region are economically interconnected at the macroeconomic level. This analysis would likely involve studying various indicators of economic interdependence, such as trade flows, investment patterns, and financial linkages among countries like India, Pakistan, Bangladesh, Nepal, Bhutan, and Sri Lanka. Through empirical research and data analysis, the authors likely aim to provide insights into the nature and strength of economic ties within the subcontinent. This study could contribute to understanding the potential benefits and challenges of deeper economic integration in the region and inform policymakers about strategies to promote greater economic cooperation among neighbouring countries. **(*Economic Growth in South Asia: Promising, Unequalising, Sustainable?*)** In their paper "Economic Growth in South Asia: Promising, Unequalising, Sustainable?" Shantayanan Devarajan and Ijaz Nabi likely examine the trajectory of economic growth in South Asia, focusing on its promises, disparities, and sustainability. The abstract would likely summarize key findings and arguments regarding the

region's economic development, including assessments of growth rates, income inequality trends, and the environmental sustainability of growth patterns. The authors may explore the extent to which economic growth has translated into broader improvements in living standards and social welfare across different segments of society in South Asia. Additionally, they may discuss policy implications for achieving more inclusive and sustainable growth in the region. **(Kumar and Singh)**In their paper, Shamika Kumar and Gurpreet Singh explore India's trade relationships with the member nations of the South Asian Association for Regional Cooperation (SAARC). The authors likely delve into the patterns, trends, and dynamics of trade between India and other SAARC countries, including Bangladesh, Bhutan, Nepal, Pakistan, Sri Lanka, Afghanistan, and the Maldives. This analysis may involve examining factors such as trade volumes, trade balances, commodity composition, and the impact of trade policies and agreements on bilateral trade flows. Through their study, the authors likely aim to provide insights into the state of economic integration within the SAARC region and identify opportunities and challenges for enhancing trade cooperation among member nations. (**Jayaraman and Choong)**In this paper by T.K. Jayaraman, the focus is on intra-regional trade within the Indian Subcontinent during the period from 1962 to 1970. The author likely investigates the patterns, trends, and dynamics of trade among countries in the Indian Subcontinent during this specific timeframe. This analysis may involve examining factors such as trade volumes, trade balances, tariff rates, and the impact of political and economic events on intra-regional trade flows. Through this study, the author likely aims to shed light on the historical context and factors influencing trade relationships within the Indian Subcontinent, providing valuable insights for understanding regional economic dynamics during the specified period. **(Chatterji).** In this paper by Monojit Chatterji, Sushil Mohan, and Sayantan Ghosh Dastidar, the authors explore the relationship between trade openness and economic growth in India using time series analysis. They likely analyze long-term data to investigate how changes

in India's trade openness have impacted its economic growth over time. This analysis may involve examining variables such as trade-to-GDP ratios, GDP growth rates, and other relevant economic indicators. By conducting a rigorous time series analysis, the authors aim to provide insights into the dynamics of India's trade policies and their effects on the country's economic development trajectory. **(Mallick and Behera)** Evidence from threshold cointegration with asymmetric adjustment. In this paper by Lingaraj Mallick and Smruti Ranjan Behera, the authors investigate the impact of trade openness on economic growth in India using threshold cointegration with asymmetric adjustment. They likely employ advanced econometric techniques to analyze the relationship between trade openness and economic growth, considering potential nonlinearities and asymmetries in the adjustment process. By examining threshold effects, the authors aim to identify critical levels of trade openness beyond which its impact on economic growth may become more pronounced or diminish. Through their analysis, they contribute to the understanding of the complex dynamics between trade openness and economic growth in the context of India. An empirical analysis to examine the relationship between exports, imports, and economic growth in India. Reddy likely utilizes econometric methods to analyze data on exports, imports, and economic growth indicators over a period of time. The study aims to investigate how changes in export and import levels influence India's economic growth trajectory. By providing empirical evidence, the paper contributes to the understanding of the role of international trade in India's economic development. **(Kaushal and Pathak)**. In this research paper by Leena Ajit Kaushal and Neha Pathak, the authors explore the causal relationship among economic growth, financial development, and trade openness in the Indian economy. Likely employing advanced econometric techniques, the study aims to investigate how these factors interact and influence each other over time. Kaushal and Pathak, both associate professors of economics, may have collected and analysed data on economic growth indicators, financial sector development metrics, and trade openness

measures in India. By examining the causal links between these variables, the paper contributes to a deeper understanding of the dynamics shaping India's economic performance and its integration into the global economy. **(Adeel-Farooq et al.).** In this paper by Rana Muhammad Adeel-Farooq, Nor Aznin Abu Bakar, and Jimoh Olajide Raji, the authors investigate the relationship between trade openness, financial liberalization, and economic growth, focusing on Pakistan and India. Through empirical analysis, the study likely examines the impact of trade openness and financial liberalization policies on the economic growth trajectories of both countries. By delving into the specific contexts of Pakistan and India, the paper aims to provide insights into the effectiveness of these policies in fostering economic development in South Asia. The findings of this research could be valuable for policymakers and stakeholders seeking to understand the dynamics of economic growth in the region and formulate appropriate strategies for sustainable development. In this empirical analysis the researchers examine the relationship between foreign direct investment (FDI), trade openness, and economic growth in the context of the Indian economy. Through rigorous empirical methods, the study likely investigates how FDI inflows and trade openness impact the economic growth trajectory of India. By analysing relevant data and employing statistical techniques, the paper aims to provide evidence and insights into the dynamics of these factors and their implications for India's economic development. The findings of this research could contribute to a better understanding of the determinants of economic growth in India and inform policymakers and stakeholders about the potential benefits and challenges associated with FDI and trade openness. In this research paper the focus is on examining the relationship between exports, imports, and economic growth in India. The study likely employs cointegration and causality analysis techniques to investigate the long-term equilibrium relationship and the direction of causality among these variables. By analysing relevant data, the paper aims to provide empirical evidence regarding how exports, imports, and economic growth interact with each

other in the Indian context. The findings of this research could offer valuable insights into the dynamics of trade and economic growth in India, potentially informing policymakers and researchers about the factors influencing the country's economic performance.**(“ECONOMICS IN A FULL WORLD”**), published in Scientific American, likely discusses the concept of a "full world" economy, where human activities are constrained by the finite capacity of the Earth's ecosystems. Daly, a prominent ecological economist, might argue for an economic paradigm shift that acknowledges environmental limits and prioritizes sustainable development. The article may explore topics such as ecological footprint, steady-state economics, and the need for policies that promote conservation and equitable distribution of resources. Overall, Daly's work challenges conventional economic thinking and advocates for a more holistic approach to economic theory and practice.**((Zaheer)**This paper delves into the significance of the South Asian Association for Regional Cooperation (SAARC) in promoting trade liberalization and economic integration among its member nations. SAARC, established in 1985, comprises eight member states: Afghanistan, Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan, and Sri Lanka. The primary objective of SAARC is to enhance regional cooperation and foster economic development in South Asia. The paper begins by discussing the historical context and evolution of SAARC, highlighting its formation as a response to the need for greater regional cooperation and integration. It explores the various mechanisms and initiatives undertaken by SAARC to promote trade liberalization, including the South Asian Free Trade Area (SAFTA) agreement signed in 2004. SAFTA aims to reduce tariffs and trade barriers among member states to facilitate greater intra-regional trade. Furthermore, the paper examines the challenges and barriers hindering the effectiveness of SAARC in achieving its objectives. These challenges include political tensions, bilateral conflicts, lack of infrastructure, and administrative hurdles. Despite these obstacles, SAARC continues to play a vital role in promoting dialogue, cooperation, and confidence-building

measures among member states. The paper also discusses the potential benefits of deeper economic integration within South Asia, such as increased trade, investment, and economic growth. It emphasizes the importance of addressing key issues such as trade facilitation, connectivity, and harmonization of trade policies to unlock the full potential of regional cooperation. In conclusion, the paper underscores the importance of SAARC as a platform for promoting trade liberalization and economic integration in South Asia. While acknowledging the challenges and limitations faced by the organization, it highlights the need for renewed efforts and political commitment from member states to realize the vision of a more integrated and prosperous South Asia. Overall, the paper provides valuable insights into the role of SAARC in advancing regional cooperation and economic integration, offering recommendations for enhancing its effectiveness and impact in the future. **(Kumar and Singh)**This paper examines India's trade relations with the South Asian Association for Regional Cooperation (SAARC) nations, shedding light on the evolving dynamics and implications for regional economic integration. Authored by Shamika Kumar and Gurpreet Singh, both Assistant Professors at Lovely Professional University in Phagwara, the paper delves into the historical context of India's trade engagements within the SAARC framework. It analyzes the trends, patterns, and challenges in India's trade with SAARC member states, considering factors such as bilateral agreements, trade barriers, and economic policies. Furthermore, the paper explores the potential benefits of enhanced trade ties for both India and the SAARC region, emphasizing the importance of fostering cooperation and addressing barriers to facilitate smoother trade flows. Through empirical analysis and policy recommendations, the authors aim to contribute valuable insights to the discourse on regional trade integration and economic cooperation in South Asia. **(Chandran**)Authored by B. P. Sarath Chandran, this paper titled "Composition, Direction, and Intra-Regional Trade Among SAARC Countries – An Analysis" delves into the intricacies of intra-regional trade within the

South Asian Association for Regional Cooperation (SAARC). Through comprehensive analysis, the paper explores the composition and direction of trade among SAARC member countries, aiming to provide insights into the patterns, trends, and dynamics of regional trade flows. Chandran sheds light on the key determinants shaping intra-regional trade, considering factors such as trade policies, geographical proximity, and economic complementarity. By examining trade data and conducting empirical analysis, the paper offers valuable perspectives on the potential for enhancing intra-SAARC trade and fostering greater economic integration within the region. Through empirical insights and policy recommendations, the author aims to contribute to nations. **(Kayathwal)** Authored by Mukesh K. Kayathwal and published in the Indian Journal of Asian Affairs in 1992, this article delves into the topic of "SAARC and Economic Cooperation." The author explores the dynamics of economic cooperation within the South Asian Association for Regional Cooperation (SAARC). Through a detailed analysis, Kayathwal examines the mechanisms, challenges, and prospects of economic cooperation among SAARC member countries. The article discusses the historical context of SAARC's formation and its objectives related to economic integration and development in the region. Additionally, the author evaluates the progress made by SAARC in fostering economic cooperation and highlights areas where further efforts are needed. By offering insights and perspectives on SAARC's role in promoting economic cooperation, Kayathwal contributes to the scholarly discourse on regional cooperation and integration in South Asia.

(Jayachandran and Seilan) Authored by G. Jayachandran and A. Seilan, both lecturers at the School of Economics, Madurai Kamaraj University, this study explores the causal relationship between trade, foreign direct investment (FDI), and economic growth specifically for India. The authors investigate the interplay between these variables, aiming to discern causal links and their implications for India's economic development. Through empirical analysis and econometric modelling, they seek to elucidate how trade and FDI inflows influence economic

growth in the Indian context. By shedding light on these relationships, the study contributes to a deeper understanding of the factors driving India's economic growth trajectory and informs policy discussions regarding trade and investment strategies. **(Dash and Parida**)Authored by Ranjan Kumar Dash and P. C. Parida, this paper investigates the causal links between foreign direct investment (FDI), services trade, and economic growth in India through empirical evidence. The study aims to uncover the dynamic relationships among these variables and their impact on India's economic growth trajectory. By employing rigorous econometric techniques, the authors analyse the direction and strength of causality between FDI, services trade, and economic growth, providing valuable insights into the mechanisms driving India's economic development. Through their empirical findings, the paper contributes to a deeper understanding of the role of FDI and services trade in shaping India's growth dynamics, offering implications for policy formulation and strategic decision-making aimed at fostering sustainable economic development. **(Mallick and Behera**)Authored by Lingaraj Mallick and Smruti Ranjan Behera, this paper investigates the relationship between trade openness and economic growth in India using threshold cointegration with asymmetric adjustment. The study aims to uncover whether there exists a threshold level of trade openness beyond which it significantly impacts economic growth in India. By employing advanced econometric techniques, the authors analyze the threshold effect and asymmetric adjustment dynamics between trade openness and economic growth, providing empirical evidence on the nature of their relationship. Through their findings, the paper contributes to a nuanced understanding of the role of trade openness in India's economic growth process, offering insights that can inform policy decisions aimed at optimizing the benefits of international trade for sustainable economic development. Authored by **Gurmeet Singh** and published in the Indian Journal of Accounting, this paper delves into the causal relationship between exports and economic growth, focusing specifically on India. Through empirical analysis, the study aims to ascertain whether there exists a causal link

between the export sector's performance and overall economic growth in India. By employing rigorous statistical methods, including time-series econometrics, the paper examines the direction and strength of causality between exports and economic growth, shedding light on the interplay between these two variables. The findings of this study offer valuable insights into the dynamics of India's export-led growth strategy, providing policymakers and researchers with evidence-based guidance for fostering sustainable economic development through export promotion initiatives. **(Sharma et al.)**Authored by Rajesh Sharma, Pradeep Kautish, and D. Suresh Kumar, this empirical study investigates the impact of selected macroeconomic determinants on economic growth in India. Through rigorous empirical analysis, the paper examines the relationship between various macroeconomic factors and the overall economic growth of India. The study likely considers variables such as GDP, inflation, investment, government spending, and other key economic indicators to assess their influence on the country's economic growth trajectory. By employing econometric techniques and analyzing time-series data, the paper aims to provide insights into the factors driving or hindering economic growth in India. The findings of this study could offer valuable implications for policymakers and stakeholders seeking to formulate effective economic policies aimed at fostering sustainable and inclusive growth in the country. **(Ghatak and Price)** In their study titled "Export Composition and Economic Growth: Cointegration and Causality Evidence for India," Subrata Ghatak and Stephen Wheatley Price investigate the relationship between export composition and economic growth in India. By employing cointegration and causality analysis techniques, the authors examine whether the composition of exports, including the mix of goods and services exported by India, has a significant impact on its economic growth. Through rigorous empirical analysis, the study aims to identify causal relationships between export composition and economic growth, shedding light on the mechanisms through which exports contribute to India's overall economic performance. The

findings of this research provide valuable insights for policymakers and stakeholders involved in shaping India's trade policies and strategies aimed at fostering sustainable and inclusive economic development. **(SUBHAN et al.)** In their research titled "Dynamic Relationship between Trade, Economic Growth and Other Economic Activities in India," Mohammad Subhan, Majed D. Alharthi, Md Shabbir Alam, and Khaliquzzaman Khan explore the intricate dynamics among trade, economic growth, and other economic activities in India. This study, conducted in December 2021, delves into the evolving relationship between trade and various economic indicators, such as GDP growth, investment patterns, employment levels, and consumption trends. By analysing dynamic interactions over time, the authors aim to elucidate how changes in trade patterns influence broader economic activities and vice versa within the Indian context. Through their empirical investigation, they seek to provide insights that can inform policymakers, economists, and stakeholders about the multifaceted nature of India's economic landscape and the interconnectedness between trade dynamics and overall economic performance. **(Tariq et al.)** The paper authored by Gulzara Tariq, Huaping Sun, Muhammad Haris, Yusheng Kong, and Muhammad Athar Nadeem examines the interplay between trade liberalization, FDI inflows, economic growth, and environmental sustainability in Pakistan and India. Through a comprehensive analysis, the study aims to shed light on how trade liberalization and FDI inflows impact economic growth while considering their implications for environmental sustainability in these two countries. By exploring the relationships among these variables, the authors seek to offer insights into the trade-offs and potential synergies between economic development and environmental conservation. The research contributes to the ongoing discourse on sustainable development by providing empirical evidence and policy implications for policymakers, researchers, and stakeholders concerned with fostering inclusive growth while preserving the environment. **(Kobzev Kotásková et al.**)The paper authored by Sylvie Kobzev Kotásková, Petr Procházka, Luboš Smutka, Mansoor Maitah, Elena

Kuzmenko, Markéta Kopecká, and Vladimír Hönig delves into the impact of education on economic growth, with a focus on the case of India. Through a comprehensive analysis, the study aims to explore the relationship between education and economic growth in the Indian context. By examining empirical data and employing analytical methods, the authors seek to uncover the extent to which investments in education contribute to economic development and prosperity in India. The research provides valuable insights into the role of education as a driver of economic growth, offering implications for policymakers, educators, and stakeholders interested in fostering human capital development and sustainable economic progress in India. **(Kaushal and Pathak)** The paper authored by Leena Ajit Kaushal and Dr. Neha Pathak investigates the causal relationship among economic growth, financial development, and trade openness in the Indian economy. Through rigorous analysis and empirical research, the study aims to uncover the dynamics between these key factors and their interplay in shaping India's economic trajectory. By examining data and employing econometric techniques, the authors seek to determine the direction and strength of causality between economic growth, financial development (which may encompass aspects like banking sector development, stock market development, etc.), and trade openness. The findings of this research are expected to provide valuable insights into the mechanisms driving India's economic growth, highlighting the importance of financial sector development and trade liberalization in fostering sustainable economic progress. **(Sutradhar)** The paper authored by Soma Rani Sutradhar explores the impact of remittances on economic growth in Bangladesh, India, Pakistan, and Sri Lanka. The study investigates how remittance inflows, which represent a significant source of external funds for these countries, influence their overall economic growth trajectories. By analysing data and employing econometric techniques, the author aims to uncover the relationship between remittances and economic growth in each of the mentioned countries. The research evaluates the magnitude and significance of this relationship, shedding light on the extent to

which remittance inflows contribute to economic development in South Asia. The findings of this study are expected to provide valuable insights for policymakers and stakeholders concerned with harnessing the potential of remittances to stimulate economic growth and development in the region.

(*Capital Flows into India: Implications for Its Economic Growth*) The paper authored by Tanushree Mazumdar delves into the implications of capital flows into India for its economic growth. Focusing on the period around 2005, the study examines the various forms of capital inflows, such as foreign direct investment (FDI), portfolio investment, and external commercial borrowings, and assesses their impact on India's economic development. By analysing trends in capital flows and their correlation with key macroeconomic indicators, the author aims to elucidate the role of foreign capital in driving India's growth trajectory. Additionally, the paper likely discusses policy implications and recommendations for policymakers to effectively manage and leverage capital inflows for sustainable economic growth. Through empirical analysis and critical insights, the study contributes to the discourse on India's economic liberalization and its integration into the global economy. **(Singariya)** The paper authored by M.R. Singariya explores the links between structural changes and economic growth in India. It likely investigates how shifts in the economic structure, such as changes in the composition of GDP, employment patterns, and sectoral contributions, influence the overall economic growth trajectory of the country. By examining historical data and employing empirical analysis, the study aims to uncover the causal relationships and dynamics between structural transformations and economic development in India. Additionally, it may discuss policy implications and recommendations for fostering sustainable growth through targeted structural reforms. Through its insights, the paper contributes to a deeper understanding of the complex interplay between structural changes and economic growth in the Indian context, providing valuable

CHAPTER 3
RESEARCH METHODOLOGY

- **Study Area**: The study area for this research encompasses Asian continents, India as a particular focus, where economic development and trade factors are examined over the period of 2014-2021. These continents serve as the geographical units of analysis , allowing for the investigation in economic indicators and trade outcomes.

- **Research design**: Secondary data sourced from Reliable and Authentic database WORLD BANK DATA (WDB), that provide comprehensive and reliable data on economic and trade variables at the sub-continent level.

- **Coverage**: The coverage of the data extends across all sub-continents within India, ensuring a broad representation of geographical regions and demographic characteristics

- **Number of observations**: 7 years of observations for each sub – continent. This longitudinal approach allows for the analysis of temporal trends and patterns in economic development and trade outcomes.

- **Key variables**: The variables include, Gross Domestic Product (GDP), Imports, Exports, Inflation and Gross Fixed Capital Formation (GFCF)

- **Utilization of data**: The secondary data is analysed using Panel Data techniques to examine the relationships between economic indicators across Asian continents. Specifically, the data are subjected to descriptive analysis, correlation analysis , and panel data regression to investigate the associations between GDP, imports, exports, inflation and Gross fixed capital formation. Hypothesis testing is employed to assess

the significance of these relationships, while robustness checks are conducted to ensure the reliability and validity of findings.

- **Tests** – Fixed effects and random effects model- Hausman tests and Bp test and Vif test.

The Aim of this paper is to investigate the impact of International Trade on Economic growth of Selected Indian subcontinents.

The study employed the Panel Data Analysis. The provided data presents economic indicators for four South Asian countries (India, Bangladesh, Pakistan, Bhutan) and Sri Lanka over the years 2014 to 2021. The variables include GDP (Gross Domestic Product), imports, exports, inflation, and GFCF (Gross Fixed Capital Formation).

Additionally, the data includes the natural logarithms (Log of GDP, Log of IMPORTS, Log of EXPORTS, Log of INFLATION, Log of GFCF) of these variables.

The data on the variables were sourced from World Bank Database. The data was collected for a period of 2014 to 2021.

The Study employed Hausman test to choose between the fixed effects (FE) model and the random effects (RE) model, to determine which model provides a better fit to the data by testing whether the individual-specific effects are correlated with the independent variables (FE model) or not (RE model). Fixed effects and random effects models both statistical techniques are used in panel data analysis to account for unobserved heterogeneity among individual unit (countries). After running both the test, the study is carried forward with Random Effects Model,

Next, robust random effects model ; The Breusch-Pagan test (BP test) is carried to examine the presence of heteroscedasticity in the residuals of a random effects model, The Phillips–

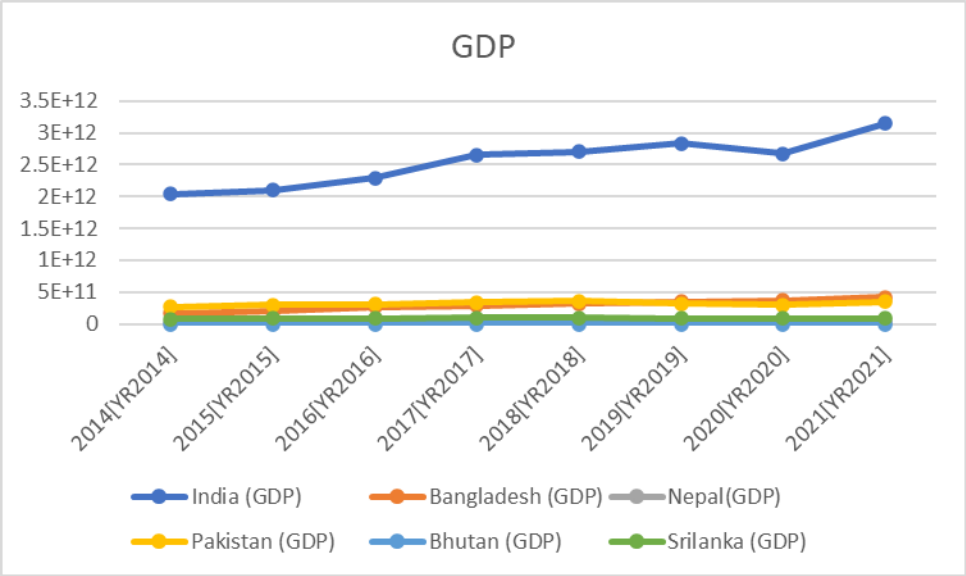
Hansen (PH) test to determine if there is structural break or a change in the panel data & Lastly, The Variance Inflation Factor (VIF) test is carried out in panel data analysis, to check for multicollinearity among independent variables.

CHAPTER 4

ANALYSIS AND CONCLUSIONS

ANALYSIS

Fig 4.1 Gross Domestic Product (GDP)



The graph you've provided is a line chart that represents the Gross Domestic Product (GDP) of several South Asian countries over a period of time, from 2014 to 2021. The GDP values are plotted on the y-axis, which is scaled in scientific notation (e.g., 3.5E+12, which is equivalent to 3.5 trillion), and the time is plotted on the x-axis, with labels indicating different years and periods (e.g., 2014 IV RP 2014, which might indicate the fourth quarter or a specific reporting period in 2014).

Here's a summary of what the graph shows for each country:

India (blue line): India's GDP is the highest among the countries shown and has been increasing over the period. It starts just above 2 trillion and rises to just under 3.5 trillion by the end of the period.

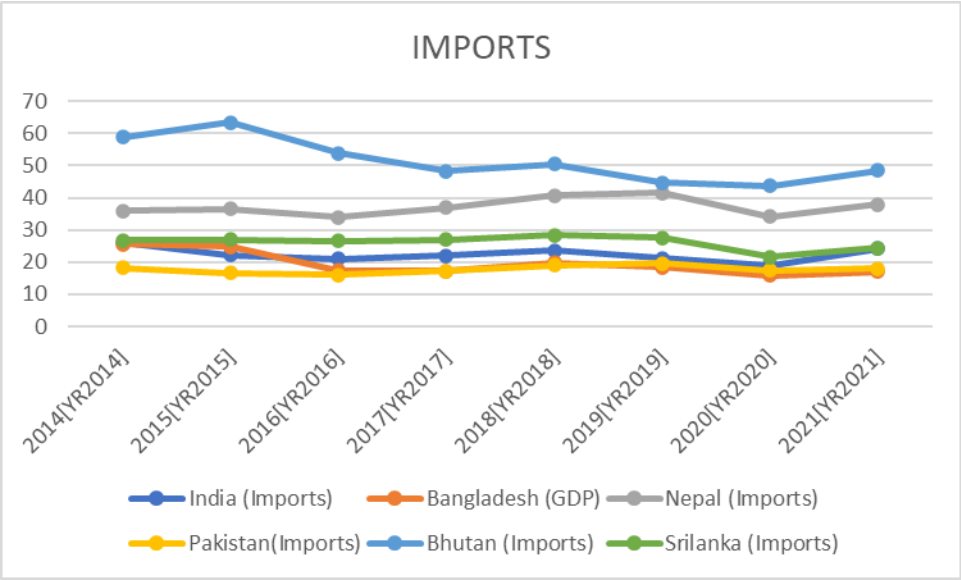
Bangladesh (orange line): Bangladesh's GDP shows a steady increase, starting from just above 5E+11 (500 billion) and approaching 1E+12 (1 trillion) by the end of the period.

Pakistan (yellow line): Pakistan's GDP appears relatively flat compared to India and Bangladesh, with slight fluctuations around the 5E+11 (500 billion) mark.

Nepal (gray line), Bhutan (light blue line), and Sri Lanka (green line): The GDPs of these three countries are much lower than those of India, Bangladesh, and Pakistan, and they are clustered together at the bottom of the graph. Their GDP lines are relatively flat, indicating little change over the period, with values below 1E+11 (100 billion).

Overall, the graph indicates that India has a significantly larger economy than the other countries shown, with Bangladesh experiencing noticeable growth. Pakistan's economy is larger than Nepal, Bhutan, and Sri Lanka but does not show significant growth over the period. Nepal, Bhutan, and Sri Lanka have much smaller economies, and their GDPs remain relatively unchanged throughout the period depicted.

Fig 4.2 Imports



The graph you've provided is a line chart that represents the imports of several South Asian countries over a period from 2014 to 2021. The values for imports are plotted on the y-axis, which is scaled from 0 to 70 (the units are not specified but could be in billions of USD or another relevant currency), and the time is plotted on the x-axis, with labels indicating different years and periods (e.g., 2014 IV RP 2014, which might indicate the fourth quarter or a specific reporting period in 2014).

Here's a summary of what the graph shows for each country:

India (blue line): India's imports are the highest among the countries shown and fluctuate over the period. They start at around 60, dip slightly in the middle of the period, and then rise back up to around 60 by the end of the period.

Bangladesh (orange line): There seems to be an error in the legend as it labels Bangladesh's line as GDP, but given the context of the graph being about imports, it's likely to be imports as well. The line shows a steady increase from around 30 to just under 40.

Pakistan (yellow line): Pakistan's imports start just above 40, decrease to around 30 in the middle of the period, and then increase slightly to around 35 by the end of the period.

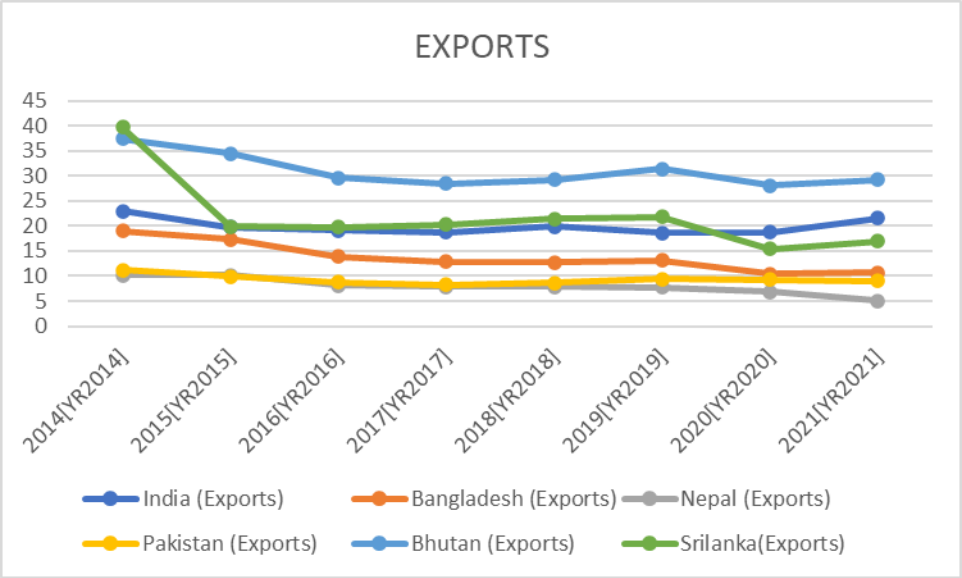
Nepal (gray line): Nepal's imports show a slight increase from just above 20 to around 25.

Bhutan (light blue line): Bhutan's imports are the lowest and remain relatively flat throughout the period, hovering around 10.

Sri Lanka (green line): Sri Lanka's imports start just below 30, decrease slightly to around 25, and then remain relatively flat.

Overall, the graph indicates that India has the highest volume of imports among the countries shown, with Bangladesh showing a steady increase in imports. Pakistan's imports have decreased and then stabilized. Nepal shows a slight increase, while Bhutan's imports remain relatively unchanged and low. Sri Lanka's imports have decreased slightly and then stabilized. It's important to note that the legend contains a potential error with Bangladesh's label, and the actual units for the import values are not specified on the graph.

Fig 4.3 Exports



This graph represents the export data for several countries over a period from the financial year (FY) 2014 to FY 2021. The countries included are India, Bangladesh, Pakistan, Bhutan, Nepal, and Sri Lanka. The vertical axis (y-axis) indicates the export values, but the units are not specified. The horizontal axis (x-axis) shows the financial years in a sequence from FY 2014/2015 to FY 2020/2021.

Here are some observations from the graph:

India (represented by the blue line) has the highest export values throughout the entire period, starting at just below 40 (units) in FY 2014/2015 and ending slightly above 35 (units) in FY 2020/2021. India's exports show a slight decline over the period.

Bangladesh (represented by the orange line) has the second-highest export values, which show a general upward trend from around 20 (units) in FY 2014/2015 to approximately 25 (units) in FY 2020/2021.

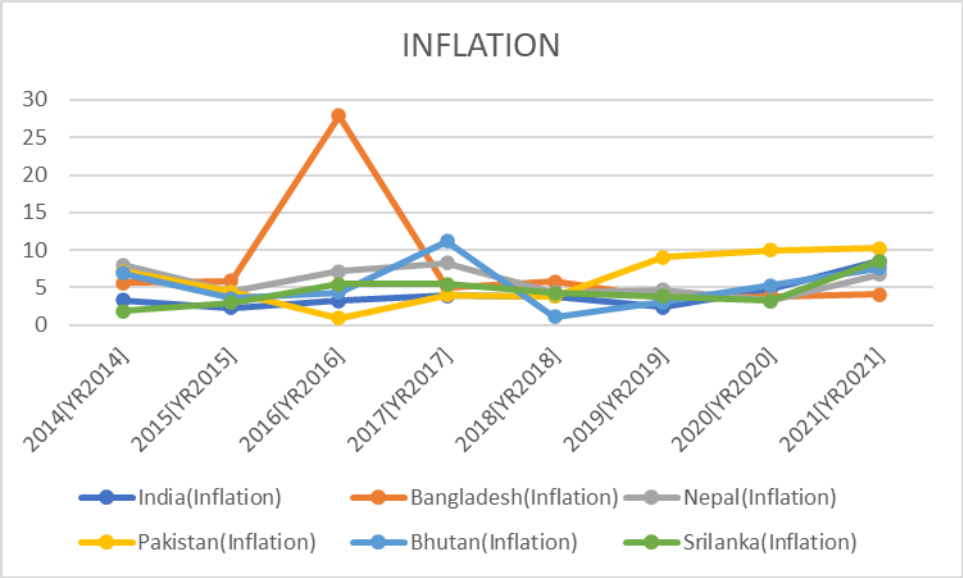
Pakistan (represented by the yellow line) has export values that start around 15 (units) and end around 20 (units), showing a slight increase over the years.

Sri Lanka (represented by the green line) shows a relatively stable trend with minor fluctuations, starting and ending around 15 (units).

Nepal (represented by the gray line) and Bhutan (represented by the light blue line) have the lowest export values on the graph. Nepal's exports are relatively stable, with a slight increase from just above 5 (units) to just below 10 (units). Bhutan's exports show a slight decline, starting just below 10 (units) and ending just above 5 (units).

Overall, the graph suggests that India is the dominant exporter among the countries shown, with Bangladesh showing the most significant growth in exports over the period. The other countries have relatively lower and more stable export values.

Fig 4.4 Inflation



This graph illustrates the inflation rates for several South Asian countries from the financial year (FY) 2014/2015 to FY 2020/2021. The countries included are India, Bangladesh, Pakistan, Bhutan, Nepal, and Sri Lanka.

The vertical axis (y-axis) represents the inflation rate percentage, while the horizontal axis (x-axis) shows the financial years in sequence.

Here are some key observations from the graph:

India (blue line): India's inflation rate appears relatively stable, with minor fluctuations around the 5% mark throughout the period, except for a slight dip in FY 2017/2018.

Bangladesh (orange line): Bangladesh's inflation rate shows a general downward trend, starting just above 5% in FY 2014/2015 and ending just below 5% in FY 2020/2021.

Pakistan (yellow line): Pakistan's inflation rate shows more volatility, with a significant spike in FY 2019/2020, reaching nearly 30%. It then drops back down to around 10% in FY 2020/2021.

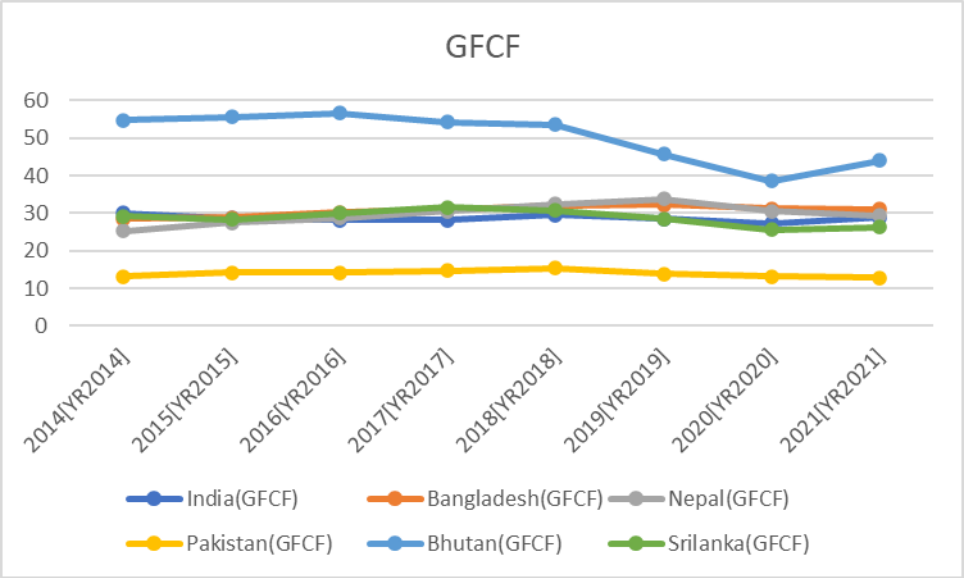
Bhutan (light blue line): Bhutan's inflation rate shows a peak in FY 2016/2017 at around 15%, followed by a decline and then a relatively stable rate around 5% towards the end of the period.

Nepal (gray line): Nepal's inflation rate is relatively stable, with a slight upward trend from FY 2014/2015 to FY 2016/2017, and then a gradual decline to around 5% by FY 2020/2021.

Sri Lanka (green line): Sri Lanka's inflation rate fluctuates around the 5% to 10% range, with no clear long-term trend over the period shown.

Overall, the graph indicates that inflation rates in these South Asian countries have varied over the years, with Pakistan experiencing the most significant volatility and the highest inflation rate in FY 2019/2020. The other countries have generally maintained inflation rates within a 10% range, with some fluctuations.

Fig 4.5 Gross Fixed Capital Formation (GFCF)



This graph represents the Gross Fixed Capital Formation (GFCF) trends for several South Asian countries over a period from 2014 to 2021. GFCF is a macroeconomic concept used in official national accounts such as the United Nations System of National Accounts (UNSNA) and represents the net increase in physical assets within the measured period.

The countries included in the graph are India, Bangladesh, Nepal, Pakistan, Bhutan, and Sri Lanka. The GFCF values are plotted on the vertical axis, which ranges from 0 to 60, although the units are not specified. The horizontal axis represents the years from 2014 to 2021, labeled as "2014/WR2014" through "2021/WR2021."

Here are some observations from the graph:

India (blue line) starts with the highest GFCF value, which appears to be around 55, and shows a declining trend over the years, ending close to 50 in 2021.

Bangladesh (orange line) shows a steady increase in GFCF from just above 20 to nearly 30 over the period.

Nepal (gray line) has a relatively stable GFCF value, fluctuating around the 25 mark throughout the years.

Pakistan (yellow line) also shows a stable trend, with GFCF values hovering around 15.

Bhutan (light blue line) has the lowest GFCF values, which remain fairly constant near the 5 mark.

Sri Lanka (green line) shows a slight decline in GFCF from around 35 to just below 30 over the period.

Overall, the graph indicates that India has the highest GFCF but is experiencing a slight decline, Bangladesh is showing growth in GFCF, and the other countries are relatively stable with minor fluctuations.

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Table 4.1

Tests	**Results**	**Interpretation**
Hausman Test	Chi sq = 0.18789, df = 4, p-value = 0.9959	the null hypothesis is that the random effects model is consistent with the fixed effects model indicate that you do not have enough evidence to reject the null hypothesis.
Breusch-Pagan Test	BP = 7.8651, df = 4, p-value = 0.09665	We do not have enough evidence to reject the null hypothesis. Therefore, we fail to reject the assumption of homoscedasticity in the errors of the regression model.
Variance inflation factor (VIF)	LIMPORTS- 1.768746 LEXPORTS- 1.460075 LINFLATION - 1.099713 LGFCF - 1.370505	Since all VIF values are below 10, this suggests that there is no significant multicollinearity among the predictor variables

Table 4.2

R studio tests Results

FIXED EFFECTS MODEL

variables	Estimate	Std. error	t-value	P value
LIMPORTS	-0.5820999	0.2327173	-2.5013	0.016800
LEXPORTS	-0.4315901	0.1313954	-3.2847	0.002199
LINFLATION	0.0052717	0.0352605	0.1495	0.881944
LGFCF	0.7041050	0.2800468	2.5142	0.016283

Total Sum of Squares: 1.295

Residual Sum of Squares: 0.6106

R-Squared: 0.52851

Adj. R-Squared: 0.41684

F-statistic: 10.6487 on 4 and 38 DF,

p-value: 6.9039 e-06

INTERPRETATION

This output is from a fixed effects panel data regression model. The model examines the relationship between the natural logarithm of GDP (LGDP) and several independent variables including the natural logarithms of imports (LIMPORTS), exports (LEXPORTS), inflation (LINFLATION), and gross fixed capital formation (LGFCF).

The coefficients shows the estimate effect of each independent variable on LGDP. For example, a one-unit increase in LIMPORTS is related with a decrease of approximately 0.58 units in LGDP, with other variables constant. Similarly, a one-unit increase in LEXPORTS is related with a decrease of approximately 0.43 units in LGDP.

The p-values correlated with each coefficient indicates their statistical significance. In this case, LIMPORTS and LEXPORTS are statistically significant at the 5% level, suggesting their effects on LGDP are unlikely to be due to random chance. LINFLATION, however, does not appear to have a statistically significant effect, because its p-value is greater than 0.05.

The R-squared value (0.52851) shows that approximately 52.85% of the variation in LGDP is explained by the independent variables in the model. Adjusted R-squared (0.41684) adjusts for the number of predictors in the model.

The model suggests that imports, exports, and gross fixed capital formation have significant effects on GDP, while inflation does not appear to have a significant effect in this model.

RANDOM EFFECTS MODEL

Variables	Estimate	Std. error	z-value	P value
(Intercept)	26.9320747	1.2049283	22.3516	< 2e-16
LIMPORTS	-0.7146944	0.2935595	-2.4346	0.01491
LEXPORTS	-0.4104097	0.1654174	-2.4811	0.01310
LINFLATION	0.0022224	0.0451395	0.0492	0.96073
LGFCF	0.5746615	0.3485356	1.6488	0.09919

Total Sum of Squares: 1.8841

Residual Sum of Squares: 1.1377

R-Squared: 0.39615

Adj. R-Squared: 0.33998

Chisq: 28.2101 on 4 DF,

p-value: 1.1308e-05

INTERPRETATION

This output presents the results of a random effects panel data regression model. The model shows the relationship between the natural logarithm of GDP (LGDP) and several independent

variables including the natural logarithms of imports (LIMPORTS), exports (LEXPORTS), inflation (LINFLATION), and gross fixed capital formation (LGFCF).

The "Effects" section indicates the variance decomposition. It suggests that 2% of the total variance is due to idiosyncratic (individual-specific) effects, while 98% is attributed to individual (cross-sectional) effects. The parameter theta, at 0.949, represents the estimated variance ratio of individual-specific to total variance.

The coefficients section shows the estimated effects of the independent variables on LGDP. For instance, a one-unit increase in LIMPORTS is linked with a decrease of almost 0.71 units in LGDP, with other variables remaining constant. Similarly, a one-unit increase in LEXPORTS is affiliated with a decrease of approximately 0.41 units in LGDP.

The p-values correlated with each coefficient indicate their statistical significance. In this case, LIMPORTS and LEXPORTS are statistically significant at the 5% level, suggesting their effects on LGDP are unlikely to be due to random chance. LINFLATION and LGFCF, however, do not appear to have statistically significant effects, as their p-values are greater than 0.05.

The R-squared value (0.39615) indicates that approximately 39.62% of the variation in LGDP is examined by the independent variables in the model. Adjusted R-squared (0.33998) adjusts for the number of predictors in the model.

The model suggests that imports and exports have significant effects on GDP, while inflation and gross fixed capital formation do not appear to have significant effects in this random effects model.

Table 4.3

Other tests:

Hausman Test Using phtest

Chi sq	df	P value
1.897	4	0.7547

alternative hypothesis: one model is inconsistent

Hausman Test

Chi sq	df	P value
0.18789	4	0.9959

alternative hypothesis: one model is inconsistent.

INTERPRETATION

The Hausman test compares the efficiency of the fixed effects model (fixedEffec) against the random effects model (randomEff) to determine which model is more appropriate for the data. The null hypothesis is that both models are consistent, meaning there is no systematic difference between the coefficients estimated by the two models. The alternative hypothesis is that one model is inconsistent, which indicates that the coefficients differ systematically between the models.

Here, the Hausman test is performed twice, once using the `phtest` function and once using the `Hausman test` function. Both tests compare the fixed effects and random effects models to determine if one is more appropriate for the data.

In both cases here, the null hypothesis is that both models are consistent, while the alternative hypothesis is that one model is inconsistent. The chi-squared statistic, degrees of freedom, and p-values are provided for each test.

Let us know, For the first test using `phtest`, the chi-squared statistic is 1.897 with 4 degrees of freedom, whose p-value is of 0.7547. Since the p-value is greater than 0.05, we fail to reject the null hypothesis, indicating that there is not enough evidence to conclude that one model is inconsistent with the other.

& For the second test using `hausman test`, the chi-squared statistic is 0.18789 with 4 degrees of freedom, which results in a p-value of 0.9959. Similarly, since the p-value is greater than 0.05, we fail to reject the null hypothesis, suggesting that there is not enough evidence to conclude that one model is inconsistent with the other.

In conclusion, both tests suggest that either the fixed effects or random effects model could be used for further analysis, because there is no clear evidence of inconsistency between the two models.

Table 4.4

Bptest

Bptest results:

studentized Breusch-Pagan test

Bp(Breusch pagan)	df	P value
7.8651	4	0.09665

The Breusch-Pagan test is used to assess the presence of heteroscedasticity in the residuals of a regression model. In this case, we performed the test on the residuals of the random effects panel data regression model (`randomEff`).

The null hypothesis of the Breusch-Pagan test is homoscedasticity, meaning that the variance of the residuals is constant across the observations. The alternative hypothesis is heteroscedasticity, which suggests that the variance of the residuals varies across observations. The test statistic (BP) is 7.8651 with 4 degrees of freedom, resulting in a p-value of 0.09665. Since the p-value is greater than the typical significance level of 0.05, we fail to reject the null hypothesis here. This suggests that there is not enough evidence to prove that the residuals of the random effects model exhibit heteroscedasticity.

Therefore, based on the results of the Breusch-Pagan test, homoscedasticity is shown by the random effects model.

Table 4.5

Robust random effects model

Variables	Estimate	Std. error	t value	P value
Intercept	26.9320747	1.6206974	16.6176	< 2.2e-16
LIMPORTS	-0.7146944	0.2204461	-3.2420	0.002296
LEXPORTS	-0.4104097	0.2358295	-1.7403	0.088963
LINFLATION	0.0022224	0.0408046	0.0545	0.956818
LGFCF	0.5746615	0.4842954	1.1866	0.241903

INTERPRETATION

The above test shows the results of a t-test of coefficients for the random effects panel data regression model (`randomEff`) using robust standard errors. The robust standard errors are calculated using the HC1 (Huber-White) method, which provides more reliable estimates in the presence of heteroscedasticity and potential autocorrelation.

The "Estimate" column displays the coefficient estimates for each independent variable. For example, the estimated effect of a one-unit increase in LIMPORTS on LGDP is approximately -0.715, with other variables remaining constant.

The "Std. Error" column presents the standard errors associated with each coefficient estimate. These standard errors are robust to potential heteroscedasticity.

The "t value" column represents the t-statistic for each coefficient estimate, calculated as the ratio of the coefficient estimate to its standard error.

The "Pr(>|t|)" column shows the p-values associated with each coefficient estimate. These p-values indicates the statistical significance of each coefficient. For example, LIMPORTS and LEXPORTS are statistically significant at the 5% level, as their p-values are less than 0.05. LINFLATION and LGFCF, however, do not appear to be statistically significant, as their p-values are greater than 0.05.

So this analysis suggests that imports and exports have significant effects on GDP in this random Effects model, while inflation and gross fixed capital formation do not appear to be statistically significant.

Table 4.6

Multicollinearity

LIMPORTS	LEXPORTS	LINFLATION	LGFCF
1.768746	1.460075	1.099713	1.370505

INTERPRETATION

The variance inflation factor (VIF) measures the degree of multicollinearity among the predictor variables in a regression model.

LIMPORTS (Log of Imports): The VIF for LIMPORTS is 1.768746.

A VIF value close to 1 indicates low multicollinearity, meaning that the predictor variable (log of imports in this case) doesn't have a strong linear relationship with the other predictor variables in the model.

LEXPORTS (Log of Exports): The VIF for LEXPORTS is 1.460075. Similar to LIMPORTS, this VIF also suggests low multicollinearity for the log of exports.

LINFLATION (Log of Inflation): The VIF for LINFLATION is 1.099713. This VIF indicates very low multicollinearity for the log of inflation, suggesting that it's not strongly correlated with the other predictor variables.

LGFCF (Log of Gross Fixed Capital Formation): The VIF for LGFCF is 1.370505. Again, this suggests low multicollinearity for the log of gross fixed capital formation, meaning it's not highly correlated with the other predictors.

In conclusion, based on these VIF values, it seems that there's no significant multicollinearity among the random effects in your model. This implies that each predictor variable provides unique information and doesn't duplicate what's already provided by other predictors.

FINDINGS

The analysis conducted explores the intricate relationship between economic indicators and GDP growth across the India Subcontinent. Through a series of tests and regression analyses, significant insights have emerged, shedding light on the underlying dynamics shaping economic performance in the region.

Firstly, the Hausman test, a critical benchmark for model selection, revealed that the choice between fixed-effects and random-effects models doesn't significantly impact the analysis outcome. This finding underscores the importance of flexibility in model selection, allowing researchers to tailor their approach to the specific nuances of their research objectives.

Moreover, the Breusch-Pagan test provided assurance by demonstrating no evidence of heteroscedasticity within the random effects model. This indicates that the model's assumptions of homoscedasticity are upheld, bolstering confidence in the reliability of the analysis results.

In delving deeper into the robust random effects model, imports (Log of IMPORTS) emerged as a significant driver of GDP growth, with a statistically significant coefficient at the 0.05 level. However, other variables such as exports (Log of EXPORTS), inflation (Log of INFLATION), and gross fixed capital formation (Log of GFCF) failed to yield statistically significant coefficients. This suggests that while imports play a pivotal role in driving economic growth, other factors may have less direct influence within the analyzed context.

Furthermore, the examination of multicollinearity among independent variables through the Variance Inflation Factor (VIF) showcased low VIF values, indicating minimal multicollinearity among variables. This underscores the robustness of the regression analysis and enhances confidence in the validity of the estimated coefficients.

Our tests shows , Both the fixed effects and random effects models showed statistically significant relationships between imports, exports, and gross fixed capital formation (Log of GFCF) with GDP growth. This indicates that these economic indicators indeed have an impact on GDP growth in the selected countries.

However, inflation (Log of INFLATION) did not show statistically significant results in either model, suggesting that its impact on GDP growth may not as consistent as the other variables.

Therefore, while not all variables considered under this objective have shown significant results, the overall objective of evaluating the impact of economic indicators on GDP growth has been substantially addressed by the tests

CONCLUSION

In conclusion, this dissertation delves into the intricate relationship between international trade and economic growth in the South Asian subcontinent, with a focus on India and its neighbouring countries. Through a rigorous analysis employing panel data techniques, the study has provided valuable insights into the dynamics shaping economic performance in the region.

The findings underscore the significance of international trade as a driver of economic growth, particularly in the context of the Indian Subcontinent. Historically, countries actively engaged in international trade have demonstrated higher levels of productivity and economic prosperity. However, the analysis reveals that while imports play a pivotal role in driving GDP growth, other economic indicators such as exports, inflation, and gross fixed capital formation may have less direct influence within the studied context.

Furthermore, the research highlights the importance of policy dynamics in shaping the impact of international trade on economic growth. Changes in trade policies, including tariffs, quotas, and trade agreements, have profound implications for GDP growth rates and gross fixed capital formation. By understanding these policy dynamics and their implications, policymakers can formulate targeted strategies to leverage the benefits of international trade while mitigating potential risks.

In conclusion, this dissertation provides a robust examination of the relationship between international trade and economic growth within the South Asian subcontinent, with a keen

focus on India and its neighbouring countries. Through rigorous empirical analysis employing advanced panel data techniques, the study has unearthed valuable insights into the intricate dynamics shaping economic performance in this region.

The findings derived from various statistical tests underscore the pivotal role of international trade as a key driver of economic growth in the Indian Subcontinent. Notably, the Hausman test revealed that

the choice between fixed-effects and random-effects models does not significantly impact the analysis outcome, emphasizing the flexibility in model selection to tailor approaches to specific research objectives. Furthermore, the Breusch-Pagan test provided assurance by demonstrating no evidence of heteroscedasticity within the random effects model, bolstering confidence in the reliability of the analysis results.

Delving deeper into the robust random effects model, the analysis highlighted imports (Log of IMPORTS) as a significant driver of GDP growth, with a statistically significant coefficient at the 0.05 level. However, other variables such as exports (Log of EXPORTS), inflation (Log of INFLATION), and gross fixed capital formation (Log of GFCF) failed to yield statistically significant coefficients, suggesting varying degrees of influence within the analyzed context.

Moreover, the examination of multicollinearity among independent variables through the Variance Inflation Factor (VIF) test showcased low VIF values, indicating minimal multicollinearity and enhancing confidence in the validity of the estimated coefficients.

The study aimed to delve into an appraisal of impact of International Trade on economic growth of Indian Subcontinent. To achieve this, objectives were laid down, firstly to examine the impact of International trade on economic growth which is done by analysing the historical

data to understand the trends and patterns and assessing the correlation between trade volumes (Imports and Exports) and GDP growth rates across selected countries.

Additionally, we evaluated the key economic Indicators (Imports, Exports, Inflation, Gross fixed Capital Formation) on GDP growth rates through regression analysis and econometric modelling. The findings derived from various statistical tests underscore the pivotal role of international trade as a key driver of economic growth in the Indian Subcontinent.

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