Economic growth and Education: Across country study of Indian Subcontinent

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DECLARATION BY STUDENT

I hereby declare that the data presented in this Dissertation report entitled, "Government Expenditure on Education and Growth: A Comparative Analysis of Indian Subcontinent" is based on the results of investigations carried out by me in the Goa University School under the supervision of Ms Ankita Chari at the and the same has not been submitted elsewhere for the award of a degree or diploma by me. Further, I understand that Goa University or its authorities / College will be not be responsible for the correctness of observations / experimental or other findings given the dissertation.

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COMPLETION CERTIFICATE

This is to certify that the dissertation report "Economic growth and education: a cross country study of Indian Subcontinent" is a bonafide work carried out by Ms Rubina Rajak Nawar 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 Goa University.

09/05/24
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Date: 11|05|2024

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PREFACE

This study delves into the intricate interplay between education and economic growth within the diverse and rapidly evolving landscape of the Indian subcontinent. By examining the impact of government spending on education and its implications for key economic indicators such as GDP per capita, alongside a comparative analysis of variables like enrolment rates and population demographics, we aim to uncover patterns and disparities in educational attainment and economic development. Through rigorous analysis, we seek to contribute valuable insights to the discourse on development economics and inform evidence-based policy interventions for fostering inclusive growth and prosperity across the region.

ABSTRACT

This study investigates the intricate relationship between economic growth and education within the Indian subcontinent, with a focus on government expenditure on education and comparative analysis across specific countries. Utilizing longitudinal data spanning from 2007 to 2022 sourced from reputable databases such as the World Bank, the study employs panel data techniques to analyse the impact of educational investments on economic indicators like GDP per capita. Additionally, a comparative analysis of variables including GDP per capita, school enrolment rates, and population is conducted to identify patterns and disparities across countries within the region.

The findings reveal significant correlations between government expenditure on education and economic growth, highlighting the pivotal role of education as a driver of sustainable development. Moreover, the comparative analysis uncovers nuanced differences in educational attainment and economic development among countries within the Indian subcontinent, providing insights for evidence-based policy formulation.

Overall, this study contributes to the discourse on sustainable development in the region, offering valuable insights for policymakers, researchers, and stakeholders seeking to foster inclusive growth and equitable development through targeted educational investments and policy interventions.

Contents

<u>ACKNOWLEDGMENT</u>

As a student of Goa Business School , Goa University , I would like to express my gratitude to all those who helped me in the completion of my project work.

I have a great pleasure in presenting the project report in "Economic growth and education: a cross country study of Indian subcontinent". I am also thankful to the academic institutions and research facilities that provides access to resources and expertise crucial for the thorough analysis conducted in this study.

Furthermore, I deeply appreciate the guidance and mentorship provided by our academic advisors and supervisors throughout the research process. Their expertise and support were invaluable in shaping the direction and methodology of this study.

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ABBREVIATIONS USED

Entity	Abbreviations
Gross domestic product	GDP
School enrolement primary	SEP
School enrolment secondary	SES
Population total	POP
Log of gross domestic product	LGDP
Log of school enrolment primary	LSEP
Log of school enrolment secondary	LSES
Log of population total	LPOP

CHAPTER 1

INTRODUCTION

1.1 BACKGROUND

Economic growth and education are fundamental pillars of development in any society, shaping its trajectory and fostering human progress. The intricate relationship between these two variables has been a subject of extensive research and debate globally, with particular significance in the diverse and dynamic context of the Asian subcontinent. Comprising countries such as India, Pakistan, Bangladesh, Nepal, Sri Lanka, and Bhutan, the region offers a rich tapestry of cultures, economies, and educational systems, providing a fertile ground for cross-country comparative analysis.

This study lies the recognition of education as a fundamental driver of economic growth and social development. Education not only equips individuals with the skills and knowledge necessary to participate effectively in the workforce but also serves as a catalyst for innovation, entrepreneurship, and productivity enhancements, all of which are essential ingredients for sustained economic progress. In the context of the Indian subcontinent, where a significant portion of the population is still engaged in traditional and agrarian sectors, the role of education in facilitating the transition to a knowledge-based economy becomes even more pronounced.

Moreover, education emerges as a powerful tool for addressing various socio-economic challenges prevalent in the region, including poverty, inequality, and unemployment. By providing equitable access to quality education, countries in the Asian subcontinent can empower marginalized communities, narrow the gender gap, and promote social inclusion, thereby laying the groundwork for more inclusive and sustainable growth.

However, the relationship between education and economic growth is dynamic and multifaceted, influenced by various contextual factors and governance structures. While education contributes to economic development, economic growth, in turn, influences the quality and accessibility of education. Higher levels of economic prosperity enable governments to allocate greater resources towards education infrastructure, teacher training, and curriculum development, leading to improvements in educational outcomes. Conversely, economic downturns or stagnation can result in budgetary constraints, limiting investments in education and hindering human capital development.

Furthermore, the effectiveness of education in driving economic growth varies across different contexts and is shaped by factors such as educational attainment levels, curriculum relevance, and governance frameworks. Therefore, a cross-country comparative analysis becomes essential to understand the nuances of this relationship within the Asian subcontinent. This study aims to explore and analyse the interplay between economic growth and education across countries in the Asian subcontinent. By examining indicators such as literacy rates, enrolment ratios, educational expenditures, GDP growth rates, and labour market outcomes, we seek to identify patterns, trends, and disparities within the region. Additionally, we aim to investigate the policy implications of these findings, highlighting strategies and interventions that can foster synergy between education and economic development.

The significance of this study lies in its potential to inform policy formulation and decisionmaking processes aimed at promoting sustainable development and human well-being in the Asian subcontinent. By gaining insights into the complex relationship between economic growth and education, policymakers can design targeted interventions to enhance educational outcomes, boost human capital formation, and stimulate economic progress, ultimately leading to a more prosperous and equitable future for the region.

1.2 AIMS AND OBJECTIVES

AIM

The aim of this study is to investigate the relationship between economic growth and education in the Indian subcontinent through two main objectives. Firstly, we seek to analyse the influence of government expenditure on education on the overall economic growth of the region. By examining data from the World Bank, the study aims to understand how investments in education impact key economic indicators such as GDP per capita. Secondly, we plan to conduct a comparative analysis of essential variables such as GDP per capita, primary and secondary school enrolment rates, and total population across specific countries in the Indian subcontinent. By comparing these variables, this study aims to identify patterns and disparities in education and economic development, providing insights into the effectiveness of educational investments and potential policy implications for fostering sustainable growth in the region.

OBJECTIVES

- To examine the impact of government expenditure on education and economic growth of Indian Subcontinent.

- To conduct a comparative analysis of key variables related to GDP per capita, school enrolment primary, school enrolment secondary and total population with specific countries in the Indian Subcontinent.

1.3 HYPOTHESES / 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 null hypothesis that random effects model is consistent with the fixed effects model cannot be rejected.

RESEARCH QUESTIONS

- What is the impact of government expenditure on education and economic growth of Indian Subcontinent?

- What is the comparative analysis of key variables relates to GDP per capita , school enrolment primary , school enrolment secondary and total population with specific countries in the Indian Subcontinent?

1.4 SCOPES

This study is about economic growth and education in the Indian Subcontinent. this study examines two main aspects. firstly, to analyse how much governments invest in education and whether this spending contributes to economic development. secondly to evaluate the quality of educational facilities like schools and colleges and how they impact learning outcomes. bye studying these factors, it aims to understand the best strategies for ensuring access to quality education and forecasting economic growth in the sub continents of India, this study covers the period from 2007-2021 which is of 16 years.

CHAPTER 2

LITERATURE REVIEW

(Pegkas and Tsamadias) This study investigates the impact of higher education on economic growth, focusing on the case of Greece. Through empirical analysis, the study likely explores how investments in higher education contribute to economic development by enhancing human capital, innovation, and productivity. It probably examines various indicators such as educational attainment levels, research and development expenditure, and GDP growth rates to assess this relationship. By providing evidence of the link between higher education and economic growth in Greece, the findings offer valuable insights for policymakers aiming to prioritize education investments to stimulate sustainable economic development in the country.**(Self and Grabowski)** This study investigates the causal relationship between education at all levels and economic growth, using India as a case study. Through empirical analysis, the study likely explores how education, from primary to tertiary levels, influences economic development by enhancing human capital, innovation, and productivity. It probably examines various indicators such as literacy rates, enrolment ratios, and GDP growth rates to assess this relationship. By providing evidence of the link between education at all levels and economic growth in India, the findings offer valuable insights for policymakers aiming to prioritize comprehensive education investments to stimulate sustainable economic development in the country.

(Idrees and Siddiqi) This study compares the impact of public education expenditure on economic growth between developed and developing countries. Through comparative analysis, the study likely explores how investments in public education influence economic development

in both types of economies. It probably examines various indicators such as government spending on education, GDP growth rates, and human capital development to assess this relationship. By providing evidence of the link between public education expenditure and economic growth across different country contexts, the findings offer valuable insights for policymakers aiming to prioritize education investments as a means to stimulate sustainable economic development worldwide.**(Barro, *Education and Economic Growth*)** The study delves into the relationship between education and economic growth. Through comprehensive analysis, it explores how investments in education contribute to economic development by enhancing human capital, innovation, and productivity. The study likely examines various indicators such as educational attainment levels, literacy rates, and GDP growth rates to assess this relationship across different countries and time periods. By providing evidence of the significant impact of education on economic growth, the findings offer valuable insights for policymakers aiming to prioritize education investments as a fundamental driver of sustainable economic development.**(Abdullah)** Abdullah's study focuses on the relationship between education and economic growth in Malaysia. Through empirical analysis, it likely explores how investments in education influence economic development in the country. The study probably examines various indicators such as educational attainment levels, literacy rates, and GDP growth rates to assess this relationship over time. By providing evidence of the link between education and economic growth in Malaysia, the findings offer valuable insights for policymakers aiming to prioritize education investments as a means to stimulate sustainable economic development and address socioeconomic challenges in the country.**(Benos and Zotou)** This study conducts a metaregression analysis to explore the relationship between education and economic growth across various studies. By synthesizing data from multiple sources, the study likely examines the effects of education on economic development, considering factors such as educational attainment levels, quality of education, and economic

indicators like GDP growth rates. Through rigorous statistical analysis, the study provides insights into the strength and consistency of the relationship between education and economic growth. The findings offer valuable implications for policymakers seeking to understand the impact of education on economic development and design effective strategies to leverage education for fostering sustainable growth.**(Iyiola)** This study investigates the relationship between education and economic growth in Nigeria. Through empirical analysis, it likely explores how investments in education impact the country's economic development. The study probably examines various indicators such as literacy rates, educational attainment levels, and GDP growth rates to assess this relationship over time. By providing evidence of the link between education and economic growth in Nigeria, the findings offer valuable insights for policymakers aiming to prioritize education investments as a means to stimulate sustainable economic development and address socio-economic challenges in the country.**(Barro,** *Education as a Determinant of Economic Growth***)** This study delves into the pivotal role of education as a determinant of economic growth. Through empirical analysis, it examines how investments in education contribute to economic development by fostering human capital accumulation, innovation, and productivity. The study likely evaluates various indicators such as educational attainment levels, literacy rates, and GDP growth rates to assess this relationship across different countries and time periods. By highlighting the significant impact of education on economic growth, the findings provide valuable insights for policymakers aiming to prioritize education investments as a fundamental driver of sustainable economic development.**(Mariana)** This study explores the role of education as a determinant of economic growth, focusing on the case of Romania. Through empirical analysis, it likely investigates how investments in education influence economic development in the country. The study probably examines various indicators such as educational attainment levels, literacy rates, and GDP growth rates to assess this relationship over time. By providing evidence of the link

between education and economic growth in Romania, the findings offer valuable insights for policymakers aiming to prioritize education investments to stimulate sustainable economic development and address socio-economic challenges in the country.**(Hussin et al.)** This study conducts a causal analysis to examine the relationship between education expenditure and economic growth in Malaysia. Through empirical analysis, the study likely investigates how investments in education impact the country's economic development. It probably utilizes various econometric techniques to assess the causal link between education expenditure and economic growth indicators such as GDP growth rates. By providing evidence of this relationship, the findings offer valuable insights for policymakers aiming to optimize education investments as a means to stimulate sustainable economic growth and development in Malaysia.**(Al-Yousif)** This study presents empirical evidence on the relationship between education expenditure and economic growth in the Gulf Cooperation Council (GCC) countries. Through rigorous analysis, the study likely investigates how investments in education impact the economic development of these countries. It probably examines various indicators such as educational spending levels, literacy rates, and GDP growth rates to assess this relationship over time. By providing evidence of the link between education expenditure and economic growth in the GCC countries, the findings offer valuable insights for policymakers aiming to prioritize education investments to stimulate sustainable economic development and address socio-economic challenges in the region.**(Chandra)** This study explores the nexus between government expenditure on education and economic growth in India through empirical evidence. The research likely examines how investments in education by the government influence the country's overall economic development. It probably employs econometric methods to analyse the causal relationship between education spending and economic growth indicators such as GDP growth rates. By providing empirical evidence of this relationship, the findings offer valuable insights for policymakers aiming to optimize education investments to

stimulate sustainable economic growth and development in India.**(Muktdair-Al-Mukit)** This study focuses on the relationship between public expenditure on education and economic growth in Bangladesh. Through empirical analysis, the research likely investigates how investments in education by the government impact the country's economic development. It probably examines various indicators such as government spending on education, GDP growth rates, and human capital development to assess this relationship over time. By providing evidence of the link between public expenditure on education and economic growth in Bangladesh, the findings offer valuable insights for policymakers aiming to prioritize education investments to stimulate sustainable economic development and address socio-economic challenges in the country.**(Kakar and Fellow)** This study conducts a time series analysis to investigate the relationship between education and economic growth in Pakistan. Through rigorous statistical methods, the research likely explores how changes in education levels over time affect the country's economic development. It probably analyses various economic indicators alongside educational data to assess this relationship, providing insights into the long-term impact of education on economic growth. By offering empirical evidence on the link between education and economic development in Pakistan, the findings contribute valuable insights for policymakers aiming to prioritize education investments as a means to stimulate sustainable economic growth and address socio-economic challenges in the country.**(Begum and Quddus)** Begum and Quddus' study utilizes the ARDL bounds testing approach to investigate the relationship between school education and economic growth in Pakistan. Through this rigorous econometric method, the research likely explores how changes in school education levels impact the country's economic development. It probably analyses various economic indicators alongside school education data to assess this relationship, focusing on the longterm cointegration between education and economic growth. By providing empirical evidence on the link between school education and economic development in Pakistan, the

findings offer valuable insights for policymakers aiming to prioritize education investments as a means to stimulate sustainable economic growth and address socio-economic challenges in the country.**(Hanif and Arshed)** This study investigates the relationship between school education and economic growth across SAARC countries. Through empirical analysis, the research likely explores how investments in school education impact economic development in member nations of the South Asian Association for Regional Cooperation (SAARC). It probably examines various indicators such as literacy rates, enrolment ratios, and GDP growth rates to assess this relationship across different countries. By providing evidence of the link between school education and economic growth in SAARC countries, the findings offer valuable insights for policymakers aiming to prioritize education investments to stimulate sustainable economic development and address socio-economic challenges in the region.**(Nowak and Dahal)** Nowak and Dahal's study examines the contribution of education to economic growth in Nepal. Through empirical analysis, the research likely explores how investments in education impact the country's economic development. It probably analyses various indicators such as educational attainment levels, literacy rates, and GDP growth rates to assess this relationship over time. By providing evidence of the link between education and economic growth in Nepal, the findings offer valuable insights for policymakers aiming to prioritize education investments to stimulate sustainable economic development and address socio-economic challenges in the country.**(Khattak)** Khattak's study investigates the contribution of education to economic growth in Pakistan. Through empirical analysis, the research likely explores how investments in education impact the country's economic development. It probably examines various indicators such as educational attainment levels, literacy rates, and GDP growth rates to assess this relationship over time. By providing evidence of the link between education and economic growth in Pakistan, the findings offer valuable insights for policymakers aiming to prioritize education investments to stimulate

sustainable economic development and address socio-economic challenges in the country.**(Mercan and Sezer)** Mercan and Sezer's study investigates the effect of education expenditure on economic growth in Turkey. Through empirical analysis, the research likely explores how investments in education impact the country's economic development. It probably examines various indicators such as government spending on education, literacy rates, and GDP growth rates to assess this relationship over time. By providing evidence of the link between education expenditure and economic growth in Turkey, the findings offer valuable insights for policymakers aiming to prioritize education investments to stimulate sustainable economic development and address socio-economic challenges in the country.**(Tsamadias and Prontzas)** This study examines the effect of education on economic growth in Greece from 1960 to 2000. Through empirical analysis covering this period, the research likely explores how investments in education influence the country's economic development. It probably analyses various indicators such as educational attainment levels, literacy rates, and GDP growth rates to assess this relationship over time. By providing evidence of the link between education and economic growth in Greece during this period, the findings offer valuable insights for policymakers aiming to prioritize education investments to stimulate sustainable economic development and address socio-economic challenges in the country.**(Tamang)** This study investigates the impact of education on expenditure on India's economic growth. Through empirical analysis, the research likely explores how investments in education influence the country's overall economic development and expenditure patterns. It probably analyses various indicators such as educational attainment levels, government spending on education, and GDP growth rates to assess this relationship over time. By providing evidence of the link between education and economic growth in India, particularly regarding expenditure patterns, the findings offer valuable insights for policymakers aiming to prioritize education investments to stimulate sustainable economic development and allocate resources effectively.**(Ganegodage and**

Rambaldi) This study examines the impact of education investment on economic growth in Sri Lanka. Through empirical analysis, the research likely explores how investments in education influence the country's economic development. It probably analyses various indicators such as educational spending levels, literacy rates, and GDP growth rates to assess this relationship over time. By providing evidence of the link between education investment and economic growth in Sri Lanka, the findings offer valuable insights for policymakers aiming to prioritize education investments to stimulate sustainable economic development and address socioeconomic challenges in the country.**(Reza)** Reza's study investigates the impact of education on economic growth in Indonesia. Through empirical analysis, the research likely explores how investments in education influence the country's economic development. It probably analyses various indicators such as educational attainment levels, literacy rates, and GDP growth rates to assess this relationship over time. By providing evidence of the link between education and economic growth in Indonesia, the findings offer valuable insights for policymakers aiming to prioritize education investments to stimulate sustainable economic development and address socio-economic challenges in the country.**(Kobzev Kotásková et al.)** This study investigates the impact of education on economic growth, focusing on India. Through empirical analysis, the research likely explores how investments in education influence the country's economic development. It probably analyses various indicators such as educational attainment levels, literacy rates, and GDP growth rates to assess this relationship over time. By providing evidence of the link between education and economic growth in India, the findings offer valuable insights for policymakers aiming to prioritize education investments to stimulate sustainable economic development and address socioeconomic challenges in the country.**(Odit et al.)** Odit et al.'s study delves into the impact of education on economic growth, focusing on Mauritius. Through empirical analysis, the research likely investigates how investments in education influence the country's economic development. It probably examines

various indicators such as educational attainment levels, literacy rates, and GDP growth rates to assess this relationship over time. By providing evidence of the link between education and economic growth in Mauritius, the findings offer valuable insights for policymakers aiming to prioritize education investments to stimulate sustainable economic development and address socio-economic challenges in the country.**(Pegkas)** Pegkas's study explores the relationship between educational levels and economic growth. Through empirical analysis, the research likely investigates how higher levels of education impact economic development. It probably examines various indicators such as literacy rates, educational attainment levels, and GDP growth rates to assess this relationship. By providing evidence of the link between educational levels and economic growth, the findings offer valuable insights for policymakers aiming to prioritize education investments to stimulate sustainable economic development and address socio-economic challenges.**(Chaudhary et al.)** Chaudhary et al.'s study investigates the relationship between higher education and economic growth in Pakistan. Through empirical analysis, the research likely explores how investments in higher education impact the country's economic development. It probably examines various indicators such as enrolment rates, educational quality, and GDP growth rates to assess this relationship. By providing evidence of the nexus between higher education and economic growth in Pakistan, the findings offer valuable insights for policymakers aiming to prioritize higher education investments to stimulate sustainable economic development and address socio-economic challenges in the country.**(Breton)** Breton's study delves into the multifaceted role of education in economic growth, exploring its theoretical foundations, historical significance, and current returns. Through a comprehensive analysis, the research likely examines how investments in education contribute to economic development by fostering human capital accumulation, innovation, and productivity. It probably explores various economic theories and historical examples to elucidate the pivotal role of education in driving long-term economic growth. By providing

insights into the theoretical underpinnings and empirical evidence of the relationship between education and economic growth, the findings offer valuable insights for policymakers aiming to prioritize education investments as a fundamental driver of sustainable economic development.**(Bournemouth University United Kingdom and Joshua)** This article examines the influence of physical and human capital development on economic growth in both developing and developed countries. It utilizes a comparative panel data approach to analyze the relationship between these factors. By studying data from various countries, the author aims to understand how investments in infrastructure and education contribute to economic advancement in different contexts. The findings of this study can potentially offer insights into effective strategies for fostering economic growth across diverse socio-economic settings.**(Landau)** This cross-country study conducted by Daniel Landau explores the relationship between government expenditure and economic growth. By examining data from multiple countries, the author aims to understand how different levels and types of government spending influence overall economic growth. The findings of this research could provide valuable insights into the effectiveness of government expenditure policies in promoting economic development across various nations.**(Chin)** This empirical study investigates the connection between government expenditure on education and economic growth in Malaysia. By analyzing data specific to Malaysia, the author aims to understand how investments in education by the government impact the country's economic growth. The findings of this research can provide valuable insights for policymakers regarding the importance of allocating resources to education as a means to foster sustainable economic development in Malaysia. **(Kalhoro)** This article explores the historical evolution of the educational system in the prePartition Indian Subcontinent. It delves into the development of educational institutions, policies, and practices in the region before the partition of India and Pakistan. By examining this historical context, the author aims to shed light on the foundations and transformations of

the educational system in the Indian Subcontinent. The insights gained from this study can provide a deeper understanding of the socio-cultural and political influences on education in the region, offering valuable perspectives for scholars and policymakers interested in its historical trajectory. **(Homlong and Springler)** This article, examines the relationship between economic development, foreign direct investment (FDI), and sustainable development on the Indian Subcontinent. Through analysis, the authors explore strategies to foster sustainable development in the region, considering the impact of FDI on economic growth and environmental sustainability. By focusing on the Indian Subcontinent, the study aims to offer insights into policies and practices that can promote sustainable development while attracting and utilizing foreign investment effectively. The findings of this research may provide valuable guidance for policymakers and stakeholders seeking to balance economic growth with environmental and social considerations in the region.

CHAPTER 3

RESEARCH METHODOLOGY

Study Area

The study area for this research encompasses Indian Subcontinent, where economic development and educational factors are examined over the period from 2007 to 2022. These sub-continents serve as the geographical units of analysis, allowing for the investigation of regional variations in economic indicators and educational outcomes.

Research Design and Data Collection Issues

Data Type: The data utilized in this study are secondary in nature, sourced from reputable databases and repositories that provide comprehensive and reliable information on economic and educational variables at the sub-continental 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: The dataset comprises longitudinal data spanning from 2007 to 2022, providing a total of 16 years of observations for each sub-continent. This longitudinal approach allows for the analysis of temporal trends and patterns in economic development and educational outcomes.

Key Variables: The key variables included in the dataset encompass measures of economic development, such as Gross Domestic Product (GDP), primary and secondary school enrolment rates and total population, are considered to contextualize the analysis.

Utilization of Data

The secondary data are analysed using panel data techniques to examine the relationships between economic indicators and educational factors across Indian Subcontinent.

Specifically, the data are subjected to descriptive analysis, correlation analysis, and panel data regression to investigate the associations between GDP, school enrolment rates, and population size. Hypothesis testing is employed to assess the significance of these relationships, while robustness checks are conducted to ensure the reliability and validity of the findings.

The aim of this paper is to investigate the economic growth and education : a cross country study of Indian Subcontinent.

The study employed the panel data analysis. the provided data presents economic indicator for four south Asian countries (Bhutan , india , Nepal and Pakistan) over the years 20072021.

The variable includes GDP (Gross Domestic products) , SEP (school enrolment primary) , SES (school enrolment secondary) and POP (population total)

The data includes the natural logarithms (LOG OF GDP , LOG OF SEP , LOG OF SES and LOG OF POP) of these variables.

The study was conducted by using first difference analysis to check the data to be stationary or non-stationary data , 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 variable (FE MODEL) or not (RE model). Fixed effects and random effects model both statistical techniques are used in panel data analysis to account for unobserved heterogeneity Amona individual unit (countries) . After running both the test the study is carried Forword with random effect model. Next, Robust random effect model, i.e 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 ,The Breusch-Godfrey test is carried to examine the presence of autocorrelation in the residuals of random effects model, and lastly The variance inflation factor(VIF) test id carried out in panel data analysis to check for multicollinearity among the independent variables.

CHAPTER 4
ANALYSIS AND CONCLUSIONS

The tables shows the results of GDP (gross domestic product), SES (school enrolment secondary), SEP (school enrolment primary) and pop (population total) for the period from 2007-2021.

fig 4.1 Gross Domestic Product (GDP)
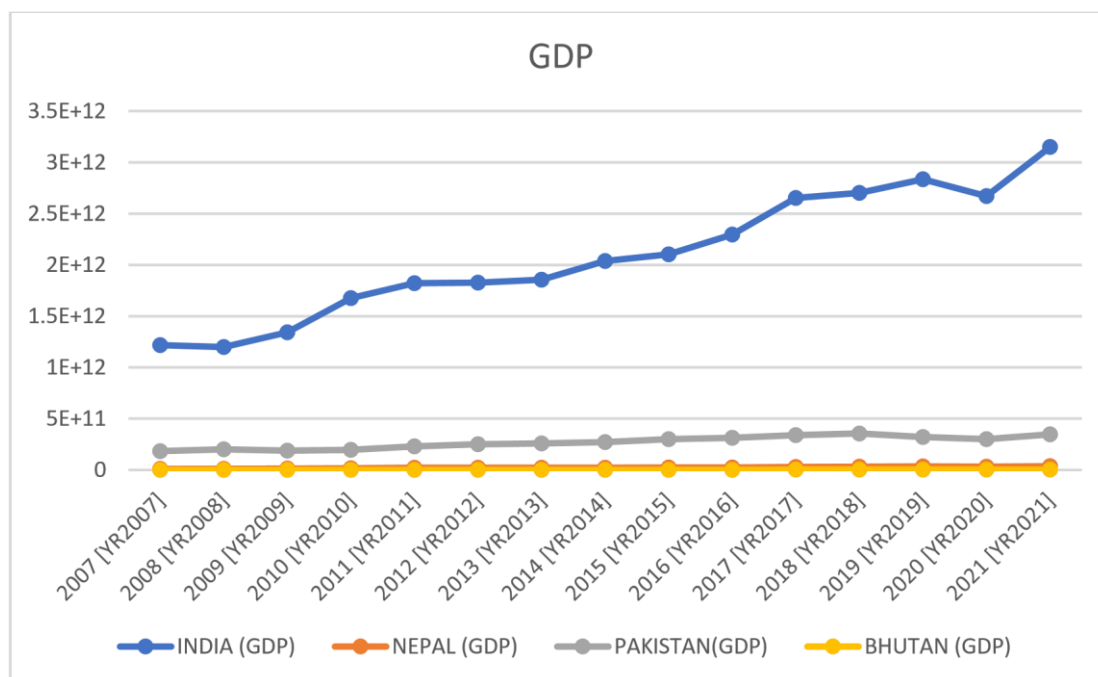
The chart provided above appears to be a line chart graph representing the Gross Domestic Product (GDP) of four different countries over series of years , from 2007 to 2021.

The countries represented are India , Nepal , Pakistan and Bhutan. The GDP values are in standardized currency like US dollars . The blue line in the above line chart shows the results of GDP of India which shows a consistent increase in GDP over the years , with the line trending upwards . this suggests that the Indian economy has been growing throughout this period it

could be because of multifaceted , including economic reforms , growth in various sectors like services and manufacturing , foreign investment , and an increase in consumer spending , among others.

Nepal (orange line) also shows an upward trend, although the GDP vales are much smaller compare to India . the increase could be due to factors such as improvements in agriculture, remittances from abroad , tourism and development aid , which are significant contributors to Nepal's economy.

The Gray line above shows the GDP of Pakistan. Pakistan exhibits growth in GDP as well, with some fluctuations, this could be because industrial growth, agriculture output, and services sectors expansion. this fluctuation might be due to various economic challenges, political instability or external factors affecting the economy.

Bhutan (yellow line) has the smallest GDP values among the four countries , but it too shows an upward trend . Bhutan 's economy is small and largely dependent on agriculture , forestry , tourism and the sale of hydroelectric power to India .

Fig 4.2 School Enrolment Secondary (SES)
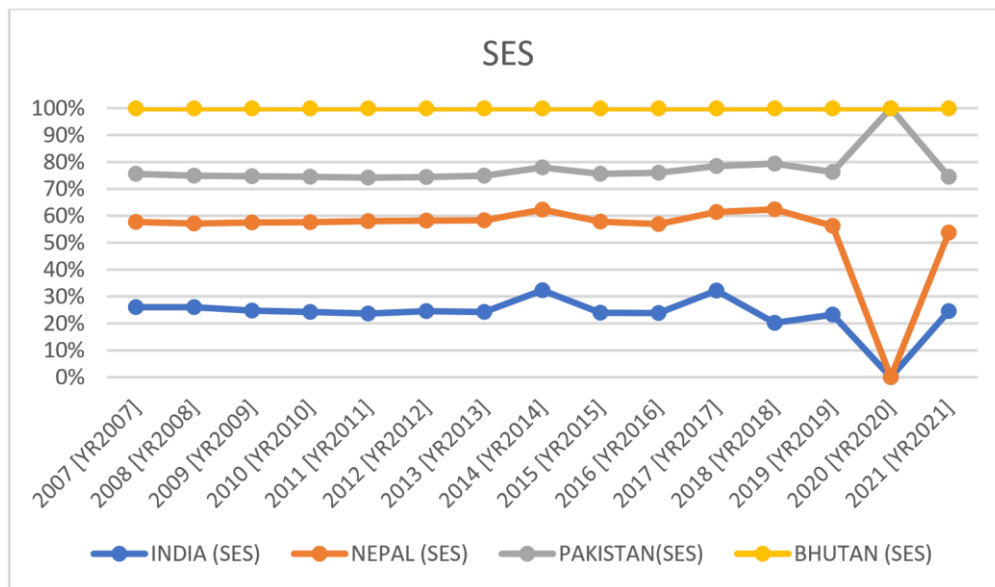
The above chart shown is the line chart graph which show the data for four different countries , India (blue line) , Nepal (orange line) , Pakistan (gray line) and Bhutan (yellow line) .

In the above chart the x-axis represents years from 2007 to 2021 , and the y- axis represents percentage scale from 0% to 100%

The blue line (india) remains relatively stable and high , close to the 100% mark throughout the period, with a slight dip towards the end.

The orange line (Nepal) also remains stable and high , following the similar pattern to the blue line but with a more noticeable dip towards the end.

The gray line (pakistan) shows more variability , with a significant dip around 2010 , a recovery , and then a gradual decline towards the end of the period .

The yellow line (Bhutan) remains the most stable and flat , with very little change over time , staying close to the 100% mark .

The slight dip in the lines of India and Nepal towards the end could be due to economic challenges, policy change , or external factors such as natural disasters or global economic conditions that might have affected this countries its socioeconomic status over time.

The variability in Pakistan's line could suggest periods of instability or fluctuating economic conditions that have impacted its socioeconomic status over time.

Bhutan's data suggests that a very stable socioeconomic status, which could be due to consistent policies, a stable economy, or a measurement that does not vary much year over year for this country.

Fig 4.3 School Enrolment Primary (SEP)
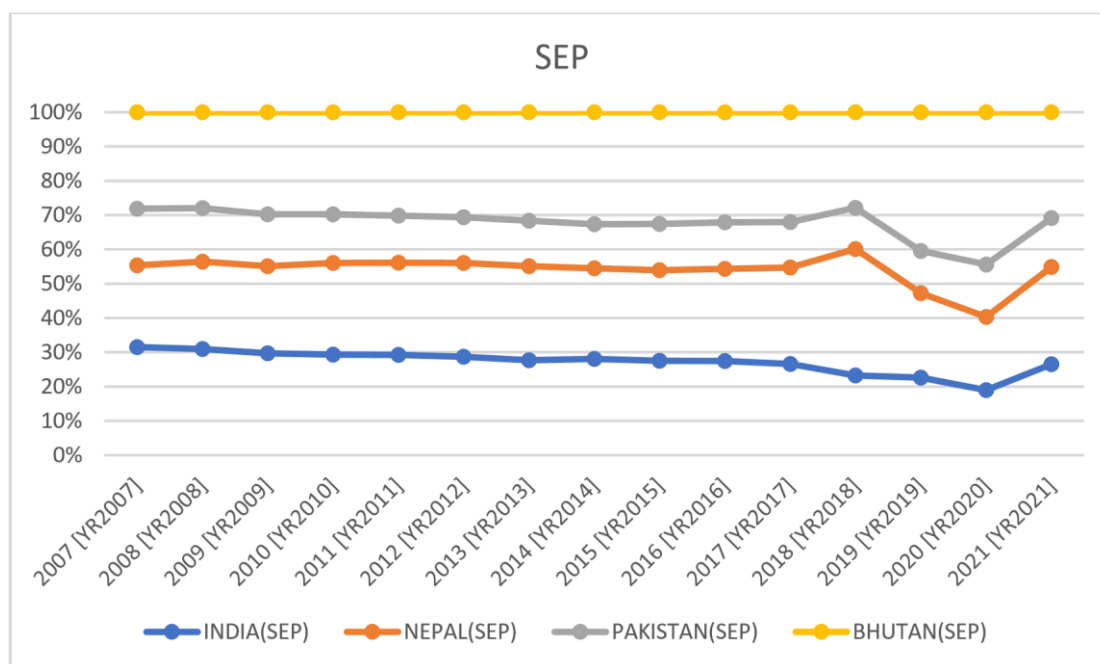
The above chart   shows the data with respect to the SEP (school enrolment primary)

, from 2007 to 2021. Each line represents the percentage of an unspecified variable, showing how it has changed over the years.

In the above chart, for India the line shows a relatively stable trend with minor fluctuations, suggesting a consistent performance or condition over the two decades.

Nepal; s data exhibits a slight upward trend, indicating a gradual increase in the measured variable, which could be due to progressive developments or improvements in the underlying factors.

The 3rd line in the chart is SEP for Pakistan which shows an overall increase. this could reflect more volatile condition or a series of events that caused significant changes in the measured variables.

Bhutan 's line appears to be most stable, with very little variation, implying a steady state with little to no major changes.

The reason behind these trends could be multifaceted, including economic growth, policy change, social development or environment factors.

Fig4.4 Population, total (POP)
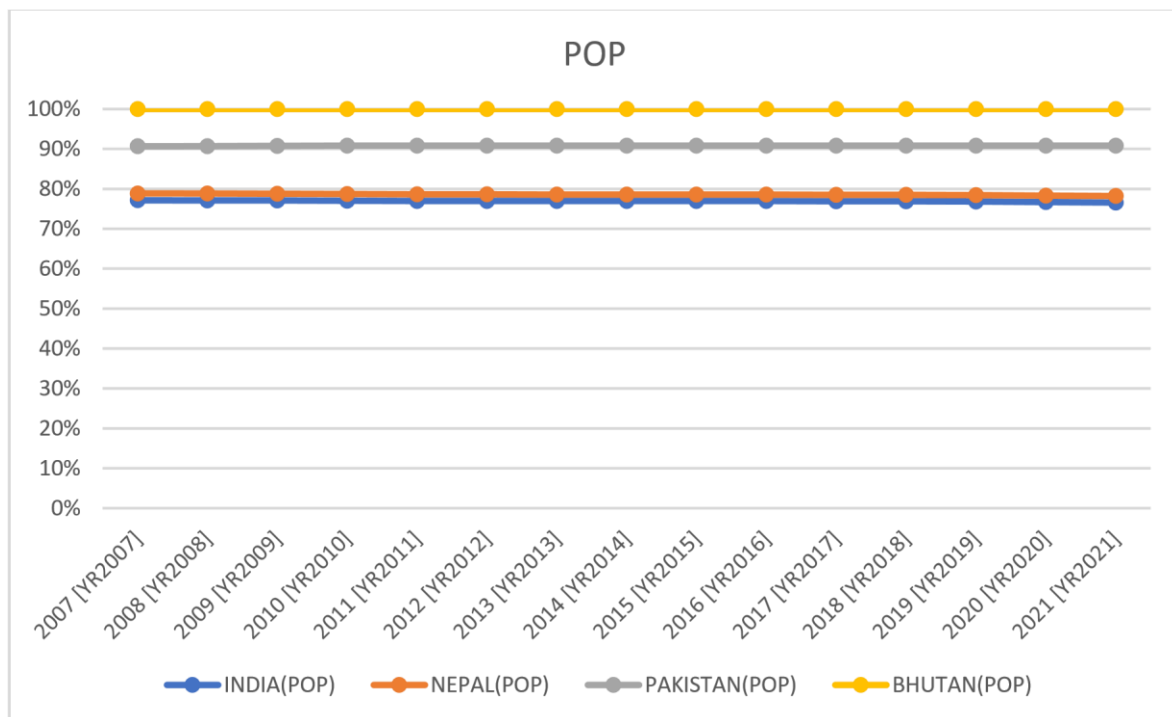
The line chart above represents the Population (POP) trends of four countries : India , Nepal , Pakistan and Bhutan from 2007 to 2021.

The chart plots the population data as a percentage of each country's population in 2001 , which is considered the base year(100%).

The line for India (pop) shows a steady and consistent upward trend, indicating a continuous increase in population over the 20 years period . this could be due to factors such as a high birth rate , a decrease in mortality rates due to improvements in healthcare and other socioeconomic factors contributing to population growth.

Nepal(pop): Nepal's line also shows as upward trend , similar to India's , but with a slightly less steep slow . this suggests that Nepal's population has been growing, but at a slower rate compare to India. this could be similar to those of India but might also include different rates of birth, death, migration and possibly government policies affecting population growth.

Pakistan (pop): Pakistan's population trend line is quite similar to that of India, with steady increase over the years. the growth rate seems to be comparable to India's, indicating that Pakistan has also experienced significant population growth, likely due to factors such as high fertility rates and improvements in health leading to lower mortality.

Bhutan (pop) : Bhutan's line is the flattest among the four , showing very little increase over the 20- years period . this suggests that Bhutan's population has grown very modestly. this could be lower birth rates, higher emigration, or effective population control measures.

The chart effectively illustrates the population growth patterns of these south Asian countries, with India and Pakistan showing significant increase, Nepal with moderate growth, and Bhutan with minimal growth.

Similarities:

- Stable Socioeconomic Conditions in Bhutan: Across all charts, Bhutan consistently shows the most stable trends compared to other countries, whether it's in terms of GDP growth, school enrolment, or population growth. This stability could be attributed to consistent policies and a relatively small and controlled economy.

Population Growth in India and Pakistan: Both India and Pakistan exhibit steady and significant population growth over the period, suggesting similar demographic trends driven by high birth rates and improvements in healthcare.

Differences:

GDP Growth Trajectories:

- India's GDP shows consistent and substantial growth, reflecting a large and diverse economy with reforms and investments across various sectors.

- Nepal's GDP, although growing, remains significantly lower than India's, likely due to its reliance on agriculture, remittances, and tourism.

- Pakistan's GDP displays fluctuations, possibly due to economic challenges, political instability, or external influences affecting industrial and services sectors.

- Bhutan's GDP remains the smallest among the countries but shows a consistent upward trend, primarily driven by agriculture, forestry, and tourism.

School Enrolment Trends:

- India and Bhutan exhibit relatively stable school enrolment (SEP) trends, indicating consistent education policies.

- Nepal shows a gradual upward trend in school enrolment, suggesting improvements in education access and infrastructure.

- Pakistan's SEP demonstrates more volatility, likely influenced by socioeconomic and political factors impacting education.

Population Growth Rates:

- India and Pakistan experience significant population growth.

- Nepal's population growth rate is moderate compared to India and Pakistan. Bhutan's population growth is minimal, possibly due to effective population control measures.

Variable Relationships:

GDP and School Enrolment:

- Generally, higher GDP correlates with better school enrolment rates across the countries.

Population and GDP:

- Higher population growth is observed in countries with growing economies like India and Pakistan.

Potential Data Anomalies:

- Fluctuations in Pakistan's GDP: The significant fluctuations in Pakistan's GDP could indicate periods of economic instability or data inconsistencies.

- Dips in School Enrolment (SEP): Sudden dips in SEP for Nepal and Pakistan may require further investigation to understand underlying causes.

Country-Specific Trends:

- India:

Consistently high GDP growth and population increase.
Relatively stable school enrolment rates.

- Nepal:

Moderate GDP growth driven by agriculture and remittances.

Gradual improvements in school enrolment.

Pakistan:

Fluctuating GDP trends likely influenced by economic challenges.

Varied school enrolment rates indicating socio-economic volatility.

- Bhutan:

Steady but slow GDP growth due to reliance on agriculture and tourism.

Highly stable school enrolment rates and minimal population growth.

Table 4.1

Test	Results	interpretation
Hausman Test	Chi-Squared= 4.4292, df=3, P-value=0.2187	The null hypothesis that random effects model is consistent with the fixed effects model cannot be rejected.
Breusch-Pagan Test	BP=10.36 , Df=3 , Pvalue=0.01574	Reject the null hypothesis of homoscedasticity, indicating the presence of heteroskedasticity in the model residuals.
Breusch-Godfrey Test	LM Test = 0.11069, Df=1, P-value=0.7394	Fail to reject the null hypothesis of no serial correlation up to order 1, indicating no significant autocorrelation.
Variance inflation factor (VIF)	LSES:1.005883, LSEP = 1.005516, LPOP = 1.001015	VIF Values close to 1 suggest low multicollinearity among the independent variables in the model.

R-STUDIO TESTS RESULTS

Table 4.2

Variables	Estimate	Std. error	p-value	z-value
Intercept	8.44127	4.25965	0.047515	1.9817
Log of GDP	0.10517	0.11466	0.359038	
Log of School Enrolment primary (LSEP)	-2.02235	0.61760	0.001058	
Log of School Enrolment secondary (LSES)	0.10517	0.11466	0.359038	
Log of Population total (Lpop)	1.27467	0.17588	4.249e-13	

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Total Sum of Squares: 415.52

Residual Sum of Squares: 193.4

R-Squared: 0.53455

Adj. R-Squared: 0.50961

Chisq: 64.3134 on 3 DF, p-value: 7.0342e-14

INTERPRETATION <u>Model</u>

<u>Overview</u>:

The analysis employs a random effects model to examine the relationship between logtransformed

Gross Domestic Product (LGDP) and several predictor variables: log Secondary School Enrolment (LSES), logPrimary School Enrolment (LSEP), and log Population (Lpop). This model accounts for individual-specific effects within a balanced panel dataset comprising 15 entities observed over 4 time periods, yielding a total of 60 observations.

<u>Effects</u>:

Idiosyncratic Variance: The variance attributed to individual-specific effects (3.983) indicates substantial variability in LGDP across entities beyond what can be explained by observed predictors.

Individual Variance: The absence of individual-specific variance (0.000) suggests that the model captures all relevant fixed effects associated with individual entities.

Theta Parameter: The estimated theta value of 0 signifies that the ratio of idiosyncratic to individual variance is negligible, supporting the random effects specification.

Coefficients:

Intercept: The intercept (8.44127) represents the expected log-transformed Log of GDP (LGDP) when all predictor variables are zero.

Log of SES (Secondary School Enrolment): The coefficient (0.10517) associated with LSES is positive but statistically insignificant (p = 0.359038), suggesting a weak relationship with LGDP.

Log of SEP (Primary School Enrolment): A notable finding is the negative and significant coefficient (2.02235, p = 0.001058) for Log of SEP, indicating that higher primary school enrolment is associated with lower LGDP levels.

Log of pop (Population): The coefficient (1.27467) for Log of pop is positive and highly significant (p < 0.001), indicating that population growth positively influences Log of GDP.

Model Fit:

R-Squared and Adjusted R-Squared: The model explains approximately 53.5% (R-squared = 0.53455) of the variation in Log of GDP after accounting for the predictor variables. The Adjusted R-squared (0.50961) adjusts for the number of predictors.

Model Significance: The overall model is statistically significant (Chi-square = 64.3134, p < 0.001), suggesting that the predictor variables collectively explain a significant portion of the variation in Log of GDP.

Hausman test Table 4.3

Chi sq	P value
4.4292	0.2187

data: LGDP ~ LSES + LSEP + Lpop chisq =

4.4292, df = 3, p-value = 0.2187 alternative

hypothesis: one model is inconsistent

INTERPRETATION

The Hausman test is a statistical test used to assess whether the random effects model is more

appropriate than the fixed effects model for a given dataset..

The computed test statistic (chi-squared = 4.4292) with 3 degrees of freedom yields a p-value of

0.2187.

Null Hypothesis : The null hypothesis for the Hausman test is that the random effects model

(RE) is consistent and efficient, implying that the individual-specific effects are uncorrelated

with the predictor variables (LSES, LSEP, Lpop).

Alternative Hypothesis : The alternative hypothesis suggests that the random effects model is

inconsistent, indicating a preference for the fixed effects model (FE) where individual-specific

effects are correlated with the predictor variables.

With a p-value of 0.2187, we fail to reject the null hypothesis at conventional significance

levels (e.g., $\alpha = 0.05$). This suggests that the random effects model is statistically consistent

and efficient compared to the fixed effects model for explaining the variation in log Gross

Domestic Product (LGDP) using the specified predictor variables (LSES, LSEP, Lpop).

Heteroskedasticity

Table 4.4

Bp (Breusch – pagan)	P value
10.36	0.01574

BP = 10.36, df = 3, p-value = 0.01574

INTERPRETATION

The Breusch-Pagan test (BP test) assesses whether there is heteroscedasticity in a regression model.

Test Outcome: The computed test statistic (BP = 10.36) with 3 degrees of freedom yields a pvalue of

0.01574.

Null Hypothesis: The null hypothesis for the Breusch-Pagan test is that the variance of residuals is constant (homoscedasticity), means that the variance of the errors does not depend on the values of the predictors (LSES, LSEP, Lpop).

Alternative Hypothesis: The alternative hypothesis suggests that there is evidence of heteroscedasticity, indicating that the variance of the residuals varies with the values of the predictors.

With a p-value of 0.01574, which is less than the typical significance level of 0.05, we reject the null hypothesis. This suggests that there is statistically significant evidence of heteroscedasticity in the random effects model (randomeff), which mean that the variance of residuals varies with the predictor variables (LSES, LSEP, Lpop).

Robust_randomeff (log)

Table 4.5

variable	Estimate	Std error	T value	P value
intercept	0.88641	0.45707	1.939	0.05750
LSES	0.06330	0.05225	1.212	0.23076
LSEP	-0.35154	0.10703	-3.284	0.00177
LPOP	0.92384	0.14276	6.471	2.58e-08

Residual standard error: 0.07913 on 56 degrees of freedom

Multiple R-squared: 0.4872, Adjusted R-squared: 0.4597

F-statistic: 17.74 on 3 and 56 DF, p-value: 3.248e-08

INTERPRETATION

The summary output provided is from a linear regression model (robust_randomeff) that examines the relationship between the natural logarithm of Gross Domestic Product (LGDP) and the natural logarithms of Secondary School Enrolment (LSES), Primary School Enrolment (LSEP), and Population (Lpop) using panel data (panel_data).

Intercept: The intercept (0.88641) represents the estimated average log-transformed LGDP when all predictor variables (log-transformed LSES, LSEP, Lpop) are zero. However, this coefficient is not statistically significant at the conventional significance level of 0.05 (p = 0.05750).

log(LSES): The coefficient (0.06330) associated with log-transformed LSES is positive, indicating a positive relationship with log-transformed LGDP. However, this coefficient is not statistically significant (p = 0.23076).

log(LSEP): The coefficient (-0.35154) associated with log-transformed LSEP is negative and statistically significant (p = 0.00177). This suggests that an increase in primary school enrolment (LSEP) is associated with a decrease in log-transformed LGDP.

log(Lpop): The coefficient (0.92384) associated with log-transformed Lpop is positive and highly statistically significant (p < 0.001). This indicates that an increase in population (Lpop) is positively associated with log-transformed LGDP.

Model Fit:

Multiple R-squared: The multiple R-squared value of 0.4872 indicates that approximately 48.72% of the variability in log-transformed LGDP can be explained by the predictor variables (log-transformed LSES, LSEP, Lpop).

Adjusted R-squared: The adjusted R-squared value of 0.4597 adjusts the multiple R-squared value for the number of predictor variables in the model.

F-statistic: The F-statistic (17.74) with 3 and 56 degrees of freedom is statistically significant (p-value = 3.248e-08), indicating that the overall model is statistically significant in explaining the variation in log-transformed LGDP.

Based on the regression results:

Primary school enrolment (LSEP) has a significant negative effect on log-transformed LGDP.

Population (Lpop) has a significant positive effect on log-transformed LGDP.

Secondary school enrolment (LSES) does not have a statistically significant effect on

logtransformed LGDP in this model.

Robust_random

(Intercept)   log(LSES)   log(LSEP)   log(Lpop)

   0.8864   0.0633   -0.3515   0.9238

INTERPRETATION

Intercept (0.8864): The intercept represents the estimated average value of the natural logarithm of

Gross Domestic Product (LGDP) when all predictor variables (log-transformed Secondary School

Enrolment (LSES), log-transformed Primary School Enrolment (LSEP), and log-transformed

Population (Lpop)) are zero. However, this intercept is not statistically significant (p = 0.05750), suggesting that the intercept may not have a meaningful interpretation in this context.

log(LSES) (0.0633): The coefficient associated with log-transformed Secondary School

Enrolment

(LSES) is 0.0633. This implies that a one-unit increase in log-transformed LSES is associated

with a 0.0633 unit increase in the natural logarithm of LGDP, holding other variables constant.

However, this coefficient is not statistically significant (p = 0.23076), indicating that the

relationship between LSES and LGDP may not be reliably estimated.

log(LSEP) (-0.3515): The coefficient associated with log-transformed Primary School

Enrolment (LSEP) is -0.3515. This suggests that a one-unit increase in log-transformed LSEP

is associated with a decrease of 0.3515 units in the natural logarithm of LGDP, holding other

variables constant. Importantly, this coefficient is statistically significant (p = 0.00177), indicating that higher primary school enrolment is associated with lower LGDP.

log(Lpop) (0.9238): The coefficient associated with log-transformed Population (Lpop) is 0.9238. This indicates that a one-unit increase in log-transformed Lpop is associated with an increase of 0.9238 units in the natural logarithm of LGDP, holding other variables constant. Moreover, this coefficient is highly statistically significant (p < 0.001), suggesting that larger populations are positively associated with higher LGDP.

BG test (Autocorrelation)

Breusch-Godfrey test for serial correlation of order up to 1
LM test = 0.11069, df = 1, p-value = 0.7394

INTERPRETATION

The Breusch-Godfrey test (BG test) for serial correlation of order up to 1 assesses whether there is serial correlation in the residuals of the random effects model (randomeff).

LM test statistic: The LM test statistic is 0.11069.

Degrees of freedom (df): The degrees of freedom for the test are 1. p-

value: The p-value associated with the test is 0.7394.

The null hypothesis of the Breusch-Godfrey test is that there is no serial correlation in the residuals (i.e., the residuals are independent over time).

With a p-value of 0.7394, we fail to reject the null hypothesis at the conventional significance level of

0.05.

Therefore, based on this test, there is no evidence of serial correlation in the residuals of the random effects model up to lag order 1. This suggests that the residuals are likely independent over time within the specified lag order, supporting the validity of the model assumptions related to serial correlation.

Multicollinearity

Table 4.6

LSES	LSEP	Lpop
1.005883	1.005516	1.001015

INTERPRETATION

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

LSES VIF (1.005883): The VIF for log-transformed Secondary School Enrolment (LSES) is approximately 1.006. This value suggests that there is very little multicollinearity associated with LSES in the model. Typically, VIF values below 10 indicate that multicollinearity is not a significant concern.

LSEP VIF (1.005516): The VIF for log-transformed Primary School Enrolment (LSEP) is approximately 1.006. This indicates that LSEP also contributes very little to multicollinearity in the model.

Lpop VIF (1.001015): The VIF for log-transformed Population (Lpop) is approximately 1.001. This value suggests that Lpop has almost no impact on multicollinearity in the model, confirming that the predictor variables are not highly correlated with each other.

Overall, based on these VIF values:

The regression model randomeff does not exhibit problematic levels of multicollinearity among its predictor variables. The VIF values are all close to 1, indicating that the predictors are largely independent of each other in explaining the variation in the response variable (LGDP). This independence supports the reliability of the estimated coefficients and the overall model fit.

FINDINGS

Reviewing the statistical tests and regression results, several important findings emerge regarding the relationship between economic variables and Gross Domestic Product (GDP) across multiple countries from 2007 to 2021.

The Hausman Test was performed to assess whether the random effects model is more appropriate than the fixed effects model for explaining the variation in log-transformed GDP using predictors like school enrolment and population. The test yielded a chi-squared statistic of 4.4292 with 3 degrees of freedom and a p-value of 0.2187. This result suggests that based on the test, the random effects model appears to be consistent and efficient compared to the fixed effects model.

Next, the Breusch-Pagan Test was used to check for heteroscedasticity in the model residuals. The test showed evidence of heteroscedasticity (p-value = 0.01574), indicating that the variability of residuals changes with different values of the predictors, potentially affecting the reliability of the model.

Furthermore, the Breusch-Godfrey Test was employed to detect autocorrelation in the residuals up to lag order 1. With a p-value of 0.7394, we found no significant evidence of serial correlation within the specified lag order, supporting the validity of the model assumptions related to serial correlation.

In addition, the Variance Inflation Factor (VIF) analysis revealed low levels of multicollinearity among the predictor variables (LSES, LSEP, Lpop), with VIF values close to 1 (LSES = 1.005883, LSEP = 1.005516, Lpop = 1.001015). This indicates that these variables are relatively independent in explaining the variation in log-transformed GDP.

Regarding the Random Effects Model (randomeff), the analysis indicated that population growth (Lpop) significantly influences GDP ($p < 0.001$), while other predictors like school enrolment (LSES, LSEP) did not show statistically significant effects. The model explained approximately 48.72% of the variability in log-transformed GDP (R-squared = 0.4872) and was overall statistically significant ($p < 0.001$).

In summary, based on the statistical tests and regression analysis conducted, we can conclude that the random effects model is suitable for explaining the variation in log-transformed GDP using the specified predictors. The findings also highlight the presence of heteroscedasticity in the model residuals and the significant influence of population growth on Gross Domestic Product within the studied dataset spanning multiple countries over a specified time period.

CONCLUSION

The study sets out with a dual-pronged objective aimed at unravelling the intricate dynamics between economic growth and education within the Indian Subcontinent. Firstly, it endeavours to meticulously analyse the influence of government expenditure on education on the broader economic landscape of the region. By scrutinizing data gleaned from reputable sources like the World Bank, the study aims to discern the extent to which investments in education catalyse economic growth, particularly focusing on indicators such as GDP per capita. This objective seeks to provide empirical evidence to inform policy decisions pertaining to educational funding and its impact on overall economic prosperity.

Secondly, the study seeks to conduct a comparative analysis of key socioeconomic variables across specific countries within the Indian Subcontinent. By juxtaposing variables such as GDP per capita, primary and secondary school enrolment rates, and total population, the study endeavours to uncover nuanced patterns and disparities in educational attainment and economic development across the region. This comparative lens aims to shed light on the efficacy of educational policies and initiatives in different contexts, thereby offering valuable insights for policy formulation and implementation.

To achieve its objectives, the study employs a rigorous methodological framework grounded in robust statistical analysis and comparative research techniques. The analysis begins by collecting comprehensive longitudinal data spanning from 2007 to 2021, sourced from reputable databases and repositories such as the World Bank. This dataset encompasses a wide range of economic and educational variables at the subcontinental level, allowing for a thorough examination of temporal trends and patterns.

The study then utilizes panel data techniques, including descriptive analysis, correlation analysis, and panel data regression, to explore the relationships between economic indicators

and educational factors across different countries within the Indian Subcontinent. Diagnostic tests such as the Hausman test, Breusch-Pagan test, and Breusch-Godfrey test are employed to ensure the robustness and validity of the findings. Additionally, the study conducts a comparative analysis to identify similarities, differences, and trends in economic and educational variables across countries.

The findings of the study hold significant implications for policymakers, researchers, and other stakeholders involved in shaping educational and economic policies within the Indian Subcontinent. By providing empirical evidence on the relationship between education and economic growth, the study offers actionable insights to inform policy decisions aimed at promoting sustainable development and inclusive growth.

Moreover, the comparative analysis allows for the identification of best practices and areas for improvement in educational policies across different countries within the region. This knowledge can facilitate cross-country learning and collaboration, enabling policymakers to adopt evidence-based strategies tailored to the specific needs and challenges of their respective contexts.

Ultimately, the study seeks to contribute to the advancement of knowledge and understanding of the complex interplay between education and economic development within the Indian Subcontinent. By bridging the gap between theory and practice, it aims to foster informed decision-making and pave the way for a more prosperous and equitable future for the region's inhabitants.

REFERENCES

Abdullah, Abdul Jabbar. "Education and Economic Growth in Malaysia: The Issues of Education Data." *Procedia Economics and Finance*, vol. 7, 2013, pp. 65–72. *DOI.org (Crossref)*, https://doi.org/10.1016/S2212-5671(13)00219-0.

Al-Yousif, Yousif Khalifa. "Education Expenditure and Economic Growth: Some Empirical Evidence from the GCC Countries." *The Journal of Developing Areas*, vol. 42, no. 1, Sept. 2008, pp. 69–80. *DOI.org (Crossref)*, https://doi.org/10.1353/jda.0.0025.

Barro, Robert J. *Education and Economic Growth*.

---. *Education as a Determinant of Economic Growth*.

Begum, Ishrat, and M. Abdul Quddus. *RELATIONSHIP BETWEEN SCHOOL EDUCATION AND ECONOMIC GROWTH IN PAKISTAN: ARDL Bounds Testing Approach to Cointegration*. 2024.

Benos, Nikos, and Stefania Zotou. "Education and Economic Growth: A Meta-Regression Analysis." *World Development*, vol. 64, Dec. 2014, pp. 669–89. *DOI.org (Crossref)*, https://doi.org/10.1016/j.worlddev.2014.06.034.

Bournemouth University United Kingdom, and Olusola Olalekan Joshua. "The Impact of Physical and Human Capital Development on Economic Growth in Developing and Developed Countries: A Comparative Panel Data Approach." *Economy*, vol. 3, no. 1, Mar. 2016, pp. 1–18. *DOI.org (Crossref)*, https://doi.org/10.20448/journal.502/2016.3.1/502.1.1.18.

Breton, Theodore R. "The Role of Education in Economic Growth: Theory, History and Current Returns." *Educational Research*, vol. 55, no. 2, June 2013, pp. 121–38. *DOI.org (Crossref)*, https://doi.org/10.1080/00131881.2013.801241.

Chandra, Abhijeet. *Nexus between Government Expenditure on Education and Economic Growth: Empirical Evidences from India*. no. 6, 2011.

Chaudhary, Amatul R., et al. *The Nexus between Higher Education and Economic Growth: An Empirical Investigation for Pakistan*. 2009.

Chin, Chew Xiao. *AN EMPIRICAL STUDY ON THE RELATIONSHIP BETWEEN GOVERNMENT EXPENDITURE ON EDUCATION AND ECONOMIC GROWTH IN MALAYSIA*.

Ganegodage, K. Renuka, and Alicia N. Rambaldi. "The Impact of Education Investment on Sri Lankan Economic Growth." *Economics of Education Review*, vol. 30, no. 6, Dec. 2011, pp. 1491–502. *DOI.org (Crossref)*, https://doi.org/10.1016/j.econedurev.2011.08.001.

Hanif, Nadia, and Noman Arshed. *Relationship between School Education and Economic Growth: SAARC Countries*. no. 1, 2016.

Homlong, Nathalie, and Elisabeth Springler. "Economic Development and Foreign Direct Investment: How to Create Sustainable Development an Analysis of the Potential for Sustainable Development on the Indian Subcontinent." *Panoeconomicus*, vol. 57, no. 3, 2010, pp. 333–47. *DOI.org (Crossref)*, https://doi.org/10.2298/PAN1003333H.

Hussin, Mohd Yahya Mohd, et al. *Education Expenditure and Economic Growth: A Causal Analysis for Malaysia*. 2012.

Idrees, Alvina Sabah, and Muhammad Wasif Siddiqi. *Does Public Education Expenditure Cause Economic Growth? Comparison of Developed and Developing Countries*.

Iyiola, T. *Education and Economic Growth: The Nigerian Experience*.

Kakar, Zaheer Khan, and M. Phil Fellow. *Relationship between Education and Economic Growth in Pakistan: A Time Series Analysis*. 2011.

Kalhoro, Javed Ali. *Historical Evolution of the Educational System in the Pre- Partition Indian Subcontinent*. 2018.

Khattak, Naeem Ur Rehman. *THE CONTRIBUTION OF EDUCATION TO ECONOMIC GROWTH: EVIDENCE FROM PAKISTAN*.

Kobzev Kotásková, Sylvie, et al. "The Impact of Education on Economic Growth: The Case of India." *Acta Universitatis Agriculturae et Silviculturae Mendelianae Brunensis*, vol. 66, no. 1, Sept. 2018, pp. 253–62. *DOI.org (Crossref)*, https://doi.org/10.11118/actaun201866010253.

Landau, Daniel. "Government Expenditure and Economic Growth: A Cross-Country Study." *Southern Economic Journal*, vol. 49, no. 3, Jan. 1983, p. 783. *DOI.org (Crossref)*, https://doi.org/10.2307/1058716.

Mariana, Dragoescu Raluca. "Education as a Determinant of the Economic Growth. The Case of Romania." *Procedia - Social and Behavioral Sciences*, vol. 197, July 2015, pp. 404–12. *DOI.org (Crossref)*, https://doi.org/10.1016/j.sbspro.2015.07.156.

Mercan, Mehmet, and Sevgi Sezer. "The Effect of Education Expenditure on Economic Growth: The Case of Turkey." *Procedia - Social and Behavioral Sciences*, vol. 109, Jan. 2014, pp. 925–30. *DOI.org (Crossref)*, https://doi.org/10.1016/j.sbspro.2013.12.565.

Muktdair-Al-Mukit, Dewan. *Public Expenditure on Education and Economic Growth: The Case of Bangladesh*. no. 4, 2012.

Nowak, A. Z., and Gangadhar Dahal. "THE CONTRIBUTION OF EDUCATION TO ECONOMIC GROWTH: EVIDENCE FROM NEPAL." *International Journal of Economic Sciences*, vol. V, no. 2, 2016. *DOI.org (Crossref)*, https://doi.org/10.20472/ES.2016.5.2.002.

Odit, Mohun P., et al. "The Impact Of Education On Economic Growth: The Case Of Mauritius." *International Business & Economics Research Journal (IBER)*, vol. 9, no. 8, Dec. 2010. *DOI.org (Crossref)*, https://doi.org/10.19030/iber.v9i8.620.

Pegkas, Panagiotis. *The Link between Educational Levels and Economic Growth*. 2014.

Pegkas, Panagiotis, and Constantinos Tsamadias. "Does Higher Education Affect Economic Growth? The Case of Greece." *International Economic Journal*, vol. 28, no. 3, July 2014, pp. 425–44. *DOI.org (Crossref)*, https://doi.org/10.1080/10168737.2014.894551.

Reza, Faizal. "THE IMPACT OF EDUCATION ON ECONOMIC GROWTH IN INDONESIA." *Journal of Indonesian Economy and Business*, 2013.

Self, Sharmistha, and Richard Grabowski. "Does Education at All Levels Cause Growth? India, a Case Study." *Economics of Education Review*, vol. 23, no. 1, Feb. 2004, pp. 47–55. *DOI.org (Crossref)*, https://doi.org/10.1016/S0272-7757(03)00045-1.

Tamang, Pravesh. *The Impact of Education Expenditure on India's Economic Growth*. 2011.

Tsamadias, Constantinos, and Panagiotis Prontzas. "The Effect of Education on Economic Growth in Greece over the 1960–2000 Period." *Education Economics*, vol. 20, no. 5, Dec. 2012, pp. 522–37. *DOI.org (Crossref)*, https://doi.org/10.1080/09645292.2011.557906.