



Serial No. 202

Environmental Sustainability and Economy

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Chapter 5 - Linkage between energy use, pollution, and economic growth—a cross-country analysis

Soumyendra Kishore Datta¹, Tanushree De²

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Abstract

The relationship between energy consumption, pollution, and economic growth is a close one. However, with increase in global warming it seems important to analyze how intensities of different pollutants vary with respect to changes in GDP. This chapter examines the question of existence of Environmental Kuznets curve (EKC) corresponding to different panels of countries belonging to low, middle, and high income status group across the world over the period 1990–2016. Based on Hausmann test, fixed/random effect regression with robust standard error is carried out to test EKC with regard to carbon dioxide, nitrous oxide, and methane. Suitable form of Kaya identity is used to help analyze the contribution of growth of several component ratios toward overall pollution level in different countries. Panel vector error correction model is applied to check the unidirectional/bidirectional causality across GDP and emission of pollutants.

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countries groups over the period 1990–2016 with 3 determinants of environmental quality that are SO₂, carbon emissions and Methane. With data from 1995 to 2015 in France and Germany, Ma et al. (2021) found an inverted U-Shaped while investigating the role of renewable (associated to non renewable) energy....

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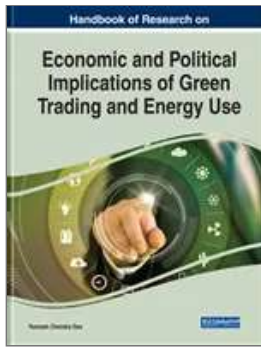
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Urbanization and Ownership of Polluting Vehicles: A Study From Urban India

Asish Kumar Pal, Atanu Sengupta

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Abstract

Most Indian cities are experiencing rapid urbanization, and a majority of the country's population is expected to live in cities within a span of the next two decades. The rapid development in urban India has also resulted in a tremendous increase in the number of motor vehicles, and in some cities, this has doubled in the last decade. This is the main source of air pollution and poor ambient air quality impacting millions of dwellers. This chapter presents a review of the vehicular population in urban Indian cities with its pattern and determinants. The transport system is shared by two parts such as public transport as well as private transport system. To reduce the vehicular pollution, we have to emphasize on public transport system rather than private transport. In an underdeveloped country, it is very tough to use public transport. Due to lack of government fund, new technology, proper checking, etc., private cars, buses, and tracks are increased rapidly. We use these randomly for transport purposes. This causes pollution.

Chapter Preview

Top

Review And Relevant Literature

Different studies have been done in the field of motor vehicular emissions in the different regions of the world, especially to establish the level of air pollution from the operation of motor vehicles and the general urban air quality as a whole. Three of such studies which have relevance to this study are: the vehicle activity study in Nairobi, Kenya, conducted in March 2001 by the U.S. EPA, CE-CERT5, and GSSR6 the evaluation of evaporative emissions from gasoline powered motor vehicles under South African conditions, conducted in 2003 by Van des Westhuisena *et al.* (2004); and the impact of automobile emissions on the level of platinum and lead in Accra, Ghana conducted in 2001 by Kylander *et al.* (2003). All of these find strong correlates between air pollution and vehicular efficiency (in the fuel use).

Key Terms in this Chapter

Developed Countries (/dictionary/developed-countries/55588): Developed economies are the countries that enjoy certain high standards. Such countries generally have a good infrastructure, stable economy with very high per capita income. The degree of development, industrialization, and general standard of living for its citizens is very high.

Pollution (/dictionary/pollution/46962): Pollution is something introduced into the environment that is dirty, unclean, or has a harmful effect.

Private Transport (/dictionary/private-transport/74600): Private transport (as opposed to public transport) is transportation service which is not available for use by the general public. Private transport is the dominant form of transportation in most of the world.

Public Transport (/dictionary/public-transport/74601): Public Transport is transport of passengers by group travel systems available for use by the general public, typically managed on a schedule, operated on established routes, and that charge a posted fee for each trip.

Urban (/dictionary/urban/66107): An urban area or urban agglomeration is a human settlement with high population density and infrastructure of built environment. Urban areas are created through urbanization and are categorized by urban morphology as cities, towns, conurbations, or suburbs.

Population (/dictionary/population/22993): The whole number of people or inhabitants in a country or region.

Developing Countries (/dictionary/developing-countries/7401): A developing country also called a less developed economy or underdeveloped country is a nation with an underdeveloped industrial base, and a low human development index (HDI) relative to other countries.

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The Dynamics of Human Development A Partial Mobility Perspective

By Atanu Sengupta, Abhijit Ghosh

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Description

This book studies the dynamic aspects of the Human Development Index (HDI) through a partial mobility perspective. It offers a new axiomatic structure and a set of mobility indices to discuss partial trends and interrogate the human development status at the subgroup and subregional levels. While traditional human development theories are primarily concerned with static distributions corresponding to a point in time, this book looks at an oft-neglected side of HDI and focuses on relative changes in human development that may not be captured by the absolutist framework. In addition, the authors also introduce the concepts of jump and fractional mobility which aid in tracking the development and stagnation among various groups within a population.

This work breaks fresh ground in the study of human development. It will be of great interest to scholars and researchers of economics, development economics, political economy, and development practitioners.

Table of Contents

Author(s)

Biography

Atanu Sengupta is Professor at the Department of Economics, Burdwan University, West Bengal, India, where he has been teaching for more than a decade. He has published over 45 papers in various refereed national and international journals such as *Economic and Political Weekly*, *Sankhya*, *Social Indicators Research*, *International Journal of Education and Development*, *Indian Economic Review*, *Asia Pacific Development Journal*, and *Asia Pacific Journal of Education and*

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developing as well as developed countries. In the era of globalisation, it is the most important global environmental issue. In general, urban air quality is becoming vulnerable especially in the developing countries due to adopting various developmental schemes. Air pollution problem in Kolkata, capital city of West Bengal, is under serious for a long day. As per guidelines of World Health Organization, for residential areas, air pollution level in Kolkata is considerably higher than the standard enumerated. There are several types of air pollutants which are continuously exposing the air of Kolkata. West Bengal pollution control board (WBPCB) has been monitoring ambient air quality (AAQ) for the parameters viz. suspended particulate matters (SPM), respiratory particulate matters (RPM), sulphur dioxide (SO₂), nitrogen dioxide (NO₂) and lead (Pb) in Kolkata throughout the years. Present study has been designed to determine the vertical floor-wise air quality status of the city of Kolkata and the seasonal variation of the pollutants over the consecutive years from 2011 to 2017. It is demonstrated that the air pollution is the highest in the winter due to dry weather, second is festive season followed by winter due to heavy movement of vehicles and pedestrians for festival shoppings as well as pandel hoppings and then next is summer. But coming to the point of rainy season, this is the lowest due to wetted air or wind of monsoon. This chapter attempts to understand the long-run trend of air pollution as the periodical average value suggests.

Keywords

Air pollution

Pollutants

Trend

Fluctuation

Seasonal

Kolkata

O18

Q53

Citation

Pal, A.K. and Sengupta, A. (2023), "A Joyless City: Long-Run Trend of Air Pollution Levels of Kolkata, India", Kumar Pal, M. (Ed.) *The Impact of Environmental Emissions and Aggregate Economic Activity on Industry: Theoretical and Empirical Perspectives*, Emerald Publishing Limited, Leeds, pp. 331-341. <https://doi.org/10.1108/978-1-80382-577-920231023>

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Sustainable Consumption Pattern in India

| Chapter | First Online: 28 July 2020

| pp 183–202 | [Cite this chapter](#)



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[Sanchita Daripa](#) & [Soumyananda Dinda](#)

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Abstract

This chapter focuses on sustainable development goals 12 (SDG 12) highlighting sustainable consumption in India. SDG 12 ensures sustainable consumption and production pattern. The chapter provides evidence of fuel and material consumption footprint in India and shows the trends of domestic material consumption and assesses SDG 12. This study suggests reducing fuel consumption-related subsidies in urban India and providing clean fuel access to rural India. It is also suggested to adopt the circular economy model for reuse and recycle materials to minimize resource consumption footprint in India.

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Cite this chapter

Daripa, S., Dinda, S. (2020). Sustainable Consumption Pattern in India. In: Hazra, S., Bhukta, A. (eds) Sustainable Development Goals. Sustainable Development Goals Series. Springer, Cham. https://doi.org/10.1007/978-3-030-42488-6_12

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DOI

https://doi.org/10.1007/978-3-030-42488-6_12

Published

28 July 2020

Publisher Name

Springer, Cham

Print ISBN

978-3-030-42487-9

Online ISBN

978-3-030-42488-6

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Hurdles in Fuel Choice and Consumption in Rural India

| Chapter | First Online: 26 February 2022

| pp 109–123 | [Cite this chapter](#)



Persistent and Emerging Challenges to Development

[Sanchita Daripa](#) & [Soumyananda Dinda](#) 

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Abstract

This chapter investigates hurdles in fuel choice and identifies stage-based socio-economic determinants at household level in rural India. Using NSSO data, this chapter estimates double hurdle model. Firewood consumption decision is based on two stage decision: (i) whether households participate on firewood consumption; and (ii) amount of firewood consumption, if participate. Empirical findings indicate that income significantly determines quantity consumption, not firewood choice decision. Firewood

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Daripa, S., Dinda, S. (2022). Hurdles in Fuel Choice and Consumption in Rural India. In: Bagli, S., Chakrabarti, G., Guha, P. (eds) Persistent and Emerging Challenges to Development. India Studies in Business and Economics. Springer, Singapore.

https://doi.org/10.1007/978-981-16-4181-7_6

[.RIS](#) [.ENW](#) [.BIB](#)

DOI

https://doi.org/10.1007/978-981-16-4181-7_6

Published

26 February 2022

Publisher Name

Springer, Singapore

Print ISBN

978-981-16-4180-0

Online ISBN

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Publication date: 17 May 2024 [Permissions](#)

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Abstract

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Clean energy is the most demanding issue for sustainable development, especially in post-COVID-19 scenario. The Government of India (GOI) has adopted various reform policies in the energy sector focusing on Sustainable Development Goal 7 (SDG 7). India has taken initiative on SDG 7 to ensure access to sustainable energy for all. The core interest area of this paper is to analyse recent energy reform policies in energy sectors covering power generation, transmission, distribution and consumption and discusses mechanism SDG target achievement within 2030 in India. In the COVID-19 pandemic scenario, every country faces a major issue of energy security since the uninterrupted energy security is related to energy demand. In the time period of pandemic, industrial energy demand goes down rapidly all over the world, especially in India. Though in the eve of festive season in India the difference between the energy supply and demand slightly overcomes. In the year 2003, GOI through Electricity Act opened electricity market for private participation to increase efficiencies. In the COVID-19 pandemic scenario, every country faces a major issue of energy security since the uninterrupted energy security is related to energy demand. Further, the Ministry of Power has taken several policies such as National Electrification Policy in 2005, National Tariff Policy, Rural Electrification Policy in 2009 and Integrated Energy Policy. This policy brief paper highlights the progress of clean energy in India and provides their future trajectory towards achieving SDG targets, especially in the period of COVID-19 pandemic.

Keywords

SDGs

COVID-19

Energy policy

Reform

Electricity Act

Clean energy

P18

Q01

Q28

Q48

Citation

Niyogi, S. and Dinda, S. (2024), "Achieving Targets of SDG 7 in Post-COVID-19: Critical Review of Recent Indian Energy Policies", Chatterjee, I. (Ed.) *International Trade, Economic Crisis and the Sustainable Development Goals*, Emerald Publishing Limited, Leeds, pp. 149-160. <https://doi.org/10.1108/978-1-83753-586-620241010>

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ISBN: 978-1-83753-587-3, eISBN: 978-1-83753-586-6

(International Standard Book Number.)
Publication date: 17 May 2024 [Permissions](#)

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Abstract

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The incidence of the COVID-19 pandemic has come as a big blow to every dimension of any economy. It disrupts the usual constructs and functioning of economies across the globe. Different macroeconomic variables such as income, employment, etc. have been in shambles because of the unprecedented pandemic. Such a situation needs an alternative thought to turn around everything, and circular economic approach indeed is a potent tool to weather this tumultuous situation. Circular economic framework facilitates recycling and reusing of wastes discarded. Because of various activities, wastes are generated, and if products could be generated out of wastes through a system, it would be beneficial to economies as this ensures the judicious utilisation of resources. Recycling, refurbishing and reducing are three important pillars of the circular economic framework, where product lifecycle gets extended and prudent use of existing resources can be possible. The usage of resources even out of wastes stands out to be a game changer in terms of sustainability of environment. The alternative usage of resources in this way creates alternative employment opportunities. The extension of product lifecycle through recycling and reusing creates alternative rooms for employment, giving ample opportunities for sustainable development. It leads to market creation for waste products. Such a circular economy approach, paving the way for alternative employment generation, leads to sustainable development. The present work tries to re-examine the efficacy of the circular economic framework and its resilience in the context of the unprecedented pandemic in terms of providing alternative employment opportunities. It attempts to underscore how circular economic construct positively impacts prudent use of resources through alternative employment generation in pandemic.

Keywords

Circular economy

Efficacy

Employment

Pandemic

Resilience

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Unprecedented

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Internal Migration and Inclusive Development: Insights from the Field

| Chapter | First Online: 15 October 2020

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[Jhilam Ray](#), [Farhat Naaz](#), [Poulomi Khasnobis](#) & [Rajarshi Majumder](#)

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Abstract

Migration is a universal phenomenon. From time immemorial, women and men have travelled in search of better living. There are two separate streams of migration. The first one is at the upper end of human capital hierarchy, to fill in existing surplus demand in the labour market of destination regions. Consequently, this process is highly selective in nature—in terms of skills and training, age and gender. The second stream emerges due to ‘Push factors’ or distress conditions in the source regions (relative to the destination)—economic hardships in the form of low wages, high unemployment, heavy population

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Acknowledgments

Parts of this study have been separately funded by ICSSR and UGC–SAP. Comments received during a national seminar organised by the Department of Economics, Banaras Hindu University during March, 2018 have been most helpful.

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Ray, J., Naaz, F., Khasnobis, P., Majumder, R. (2020). Internal Migration and Inclusive Development: Insights from the Field. In: Mishra, N.K. (eds) Development Challenges of India After Twenty Five Years of Economic Reforms. India Studies in Business and Economics. Springer, Singapore. https://doi.org/10.1007/978-981-15-8265-3_22

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DOI

https://doi.org/10.1007/978-981-15-8265-3_22

Published

15 October 2020

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Extreme Events and Resilience in the times of Pandemic: A Case Study

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Abstract

For the last thirty years or so, the world is increasingly looking at environmental extremes, many of which are triggered by climate change. Scientists, though divided over the extent and likely damages to be caused by global warming, are unanimous about the need to build in mitigating and adaptive measures in local, national and global policies. However, another likely impact of climate change had remained out of focus till 2020 – the potential for contagious diseases going ‘viral’ and spreading pan-world. COVID19, as we know it, changed all that and globally interest has surged in this area too over the last few months. A handful of researchers are also underlining the threat of multiple shocks attacking a country or society simultaneously and the likely impact of such contagion effect. Using a case study, this paper tries to discuss how resilience to climate extreme events is affected by health extreme events like pandemic and what lessons we can draw from these. The paper starts with a background on extreme events, resilience, damage costs and avoidance costs. Thereafter it looks into the fundamentals of resilience planning and how cyclone management policies have evolved in India over the last two decades. Finally, it examines how the prevalent pandemic has affected resilience activities during a recent severe cyclonic storm in eastern India – bringing to limelight the problems faced during multiple extreme events. The issues discussed has serious implications for future resilience planning and implementation policies across the globe.

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Ever since it came into existence in 1990, the UNDP Human Development Report and the HDI has become an important tool for measuring progress of a country beyond the narrow boundary of macroeconomic growth. This exercise has been replicated at country level, bringing out national and sub-national HDRs. In India, national HDR has been followed by state level and district level HDRs, bringing to fore some limitations of the current method. First, there is an acute lack of data support at necessary granular level. Second, often the global template is not sufficient to reflect the actual context and

comments received during a National Seminar at Kalyani University and from an anonymous referee. Needless to say, the final responsibility lies with the authors.

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Dey, S., Ray, J., Majumder, R. (2022). Measuring Human Development at Sub-National Level: Methods and Application. In: Dasgupta, B., Sarkhel, P., Ghosh, A., Ghosh, B. (eds) In Quest of Humane Development. India Studies in Business and Economics. Springer, Singapore. https://doi.org/10.1007/978-981-16-9579-7_4

[.RIS](#) [.ENW](#) [.BIB](#)

DOI

https://doi.org/10.1007/978-981-16-9579-7_4

Published

14 May 2022

Publisher Name

Springer, Singapore

Print ISBN

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Online ISBN

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Majumder, R. (2023). Extreme Events, Resilience and Disaster Management: Lessons from Case Studies. In: Mitra, S., Dasgupta, K., Dey, A., Bedamatta, R. (eds) Disaster Management and Risk Reduction: Multidisciplinary Perspectives and Approaches in the Indian Context. NERC 2022. Springer, Singapore. https://doi.org/10.1007/978-981-99-6395-9_17

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https://doi.org/10.1007/978-981-99-6395-9_17

Published

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Publisher Name

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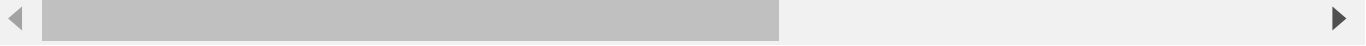
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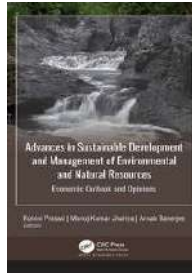
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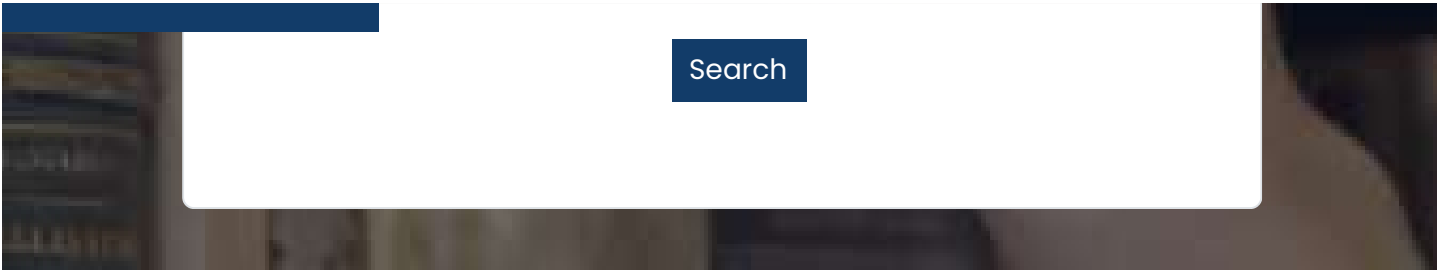


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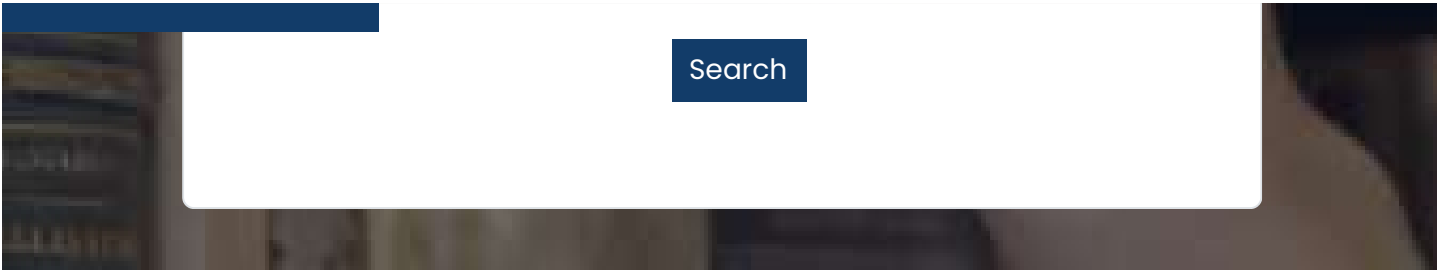
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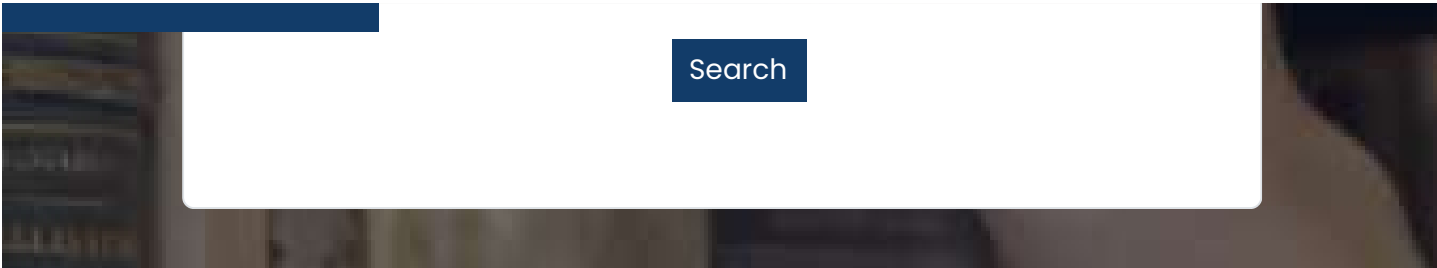
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