6th SANEM Annual Economists' Conference (SAEC) 2023

Conference Proceedings

Building Resilience to Shocks
Priorities, Challenges and Prospects

4-5 February 2023 | Dhaka, Bangladesh

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SOUTH ASIAN NETWORK ON ECONOMIC M0ODELING

6th SANEM Annual Economists' Conference (SAEC) 2023

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Abstracts of Conference Papers

Conference Themes

Agricultural and Food Security
Digital Economy
Economic Growth and Development Challenges
Education
Energy
Environment and Climate Change
Gender Inequality
Health
Labour Market
Macroeconomy
Poverty and Inequality
Political Economy
Trade and Industry

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Theme 1: Agriculture and Food Security

1. Risk Aversion, Adoption of Safety Nets and Food Security in India: Interlinkages between Crop-Insurance and Crop-Diversification

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Dr Chandra Sekhar Bahinipati, *Assistant Professor, IIT-Tirupati, Andhra Pradesh*

The increasing impacts of climate variability and weather shocks are making agriculture a risky business (see IPCC, 2022), and concurrently, market aberrations also play a major role. Numerous studies have observed the negative impacts of climate change on agricultural yield, which in turn affect income and livelihood (Pattanayak & Kumar, 2014). To ensure food security, farmers in India are undertaking several risk management strategies over the years (Townsend, 1995; Bahinipati et al., 2021; Bahinipati and Patnaik, 2022). Crop diversification is the most inherent and age-old risk management strategy, and in fact, it protects both food security and water security (Lin, 2011). Hence, crop diversification acts as a buffer against crop failure and fosters ecological resilience (Schroff & Cortes, 2020). Similarly, crop insurance operates as a suitable risk coping mechanism for covariate risk arising out of climate disruption (Biswal and Bahinipati, 2022). The influence of crop insurance on crop diversification is relevant because it may affect what and how farmers produce, which has a consequence for food supply as well as environmental outcomes such as pesticide use and biodiversity (Knapp et a., 2021). For instance, farmers having crop insurance choose mono-cropping and switch to risky high crops instead of crop diversification (Yu & Sumner, 2018) and use more inputs (Roll, 2019). Also, when crop insurance is used, farmers are more likely to grow cash crops instead of crops that help reduce drought, like intercropping with different drought-tolerant crops (Mobarak & Rosenzweig, 2013; Elabed & Carter, 2015).

Although there are a number of studies available relating to farm diversification and crop insurance adoption, there is little literature available, especially on crop diversification and crop insurance. Furthermore, the available literature is more region-specific (Chang and Mishra, 2012; Velandia et al., 2009; Lefebvre et al., 2014; Goodwin, 1993). Hence, this study aims at examining the association of crop diversification with crop insurance by taking large- scale, nationally representative household data from India. The specific objective of the study is to understand whether crop insurance encourages crop diversification or not. Using the National Sample Survey Office (NSSO) 70th round and 77th round situation assessment of agricultural households data of 2013 and 2019 and applying the logit and ordered logit model, this study finds that the adoption of crop insurance does not hinder crop diversification. In fact, in 2019, it promoted crop diversification in India. Furthermore, factors like household size, primary and secondary

education of the household heads, household landholding, percapita consumption, access to employment scheme (MGNREGA), soil health card, agricultural training, Radio and Television access and previous year crop loss experience also encourage crop diversification. However, factors like female-headed households, socially marginalised castes and farmers having graduation and above education discourage crop diversification. Hence, the government should encourage farmers to adopt crop insurance as well as crop diversification, and the ongoing crop insurance schemes should be continued.

2. Land Utilization in Wheat Production of Bangladesh: What Affects Farmers' Efficiency?

Mr Sourav Mohan Saha, *Lecturer, Department of Agricultural Finance, Co-operatives and Banking, Khulna Agricultural University, Bangladesh*

Mr Md Jahurul Islam, *Lecturer, Khulna Agricultural University*

Mr Md. Jaber Ranab, *Lecturer, Khulna Agricultural University*

In terms of food, calories, and protein intake for Bangladeshi people, wheat ranks second behind rice as a key cereal. Over the past two decades, its output has significantly decreased due to the loss of arable land, while on the other hand, demand has increased, leading to an increase in wheat imports. Increasing productivity and efficiency of wheat farming would facilitate higher food production for the growing populations and reduce import dependency. Therefore, this study estimates the farmers' profitability of wheat production along with technical efficiency (TE) and land use efficiency (LUE). Primary data from 160 farmers of Thakurgaon and Panchagarh districts were used while stochastic frontier analysis was employed. Findings reveal that farmers were scarcely getting profit from wheat production while the major proportion of cost was incurred in fertilizers and labor. TE results in the production frontier indicate that there was still an opportunity to increase wheat production by 14.2% using the same amount of inputs. LUE by the wheat farmers was found to be very low; hence, they were using their land inefficiently. Additionally, a "U-shaped" relationship between farm size and LUE was observed where LUE reached its minimum level at approximately 2.33 ha. However, their inefficiency was positively affected by land holdings and household income while negatively affected by their education, training and organizational membership. This study recommends facilitating training programs on scientific land and resources management among farmers including increasing their organizational involvement through co-operatives, NGOs, extension offices, etc. for higher efficiency.

3. Drivers of Agricultural Commercialization and its Impact on Household Food Security in Kenya

Mr Peter Kipkorir, *PhD Student, Agricultural Economics and Resource Management, Moi University, Kenya*

Dr Vincent Ngeno, *Moi University*

Dr Chepchumba Chumo, *Moi University*

Because of the increase in population growth in Kenya over the past two decades, agricultural production in Kenya has remained low with relative food insecurity affecting many citizens in most parts of the country. This study, specifically, examined the drivers of agricultural commercialization decisions and its impact on household food security in Kenya. Panel data from Kenya 2020 Covid-19 Rapid Response Phone Survey was utilized to determine the impact of agricultural commercialization decisions on household food security in Kenya. An endogenous switching regression was utilized to establish the impact of agricultural commercialization on household food security and at the same time account for endogeneity and self-selection problems.

The study findings revealed that women empowerment, age, land size, education, credit access and internet access were the key significant drivers of agricultural commercialization decisions among households. The ESR model also controls for structural differences between the commercialized and the non-commercialized households in terms of food security outcome functions particularly, land size had a significant ($p < 0.01$) positive ($\beta AC=1 = 0.3266$) impact on the food security of the commercialized households while it had a negative $\beta AC=0 = -0.1805$ but significant ($p < 0.01$) impact on the food security of the non-commercialized households. Therefore, households with large land sizes are more likely to improve by a greater extent household food security compared to households with small land sizes when they participate more in the market. However, age ($\beta AC=1 = 0.1364$, $\beta AC=0 = 0.0992$), women empowerment ($\beta AC=1 = 0.4356$, $\beta AC=0 = 0.1618$) and internet access ($\beta AC=1 = 0.2351$, $\beta AC=0 = 0.1174$) recorded a significant ($p < 0.01$) homogenous effect on the food security of the households among the commercialized and non-commercialized group of households. The results further suggest that the both the observed and unobserved characteristics influence the decision to, and food security outcome give the decision to commercialize. The results reveal that households participating in agricultural commercialization would experience improved food security through increased dietary diversity. The study concludes that there is a need to support agricultural

commercialization to increase household food security. This could be achieved by empowering households through adequate online training and education and commercialization and various variety of food diets, improving infrastructures and institutions such as internet connectivity, credit and commercial institutions.
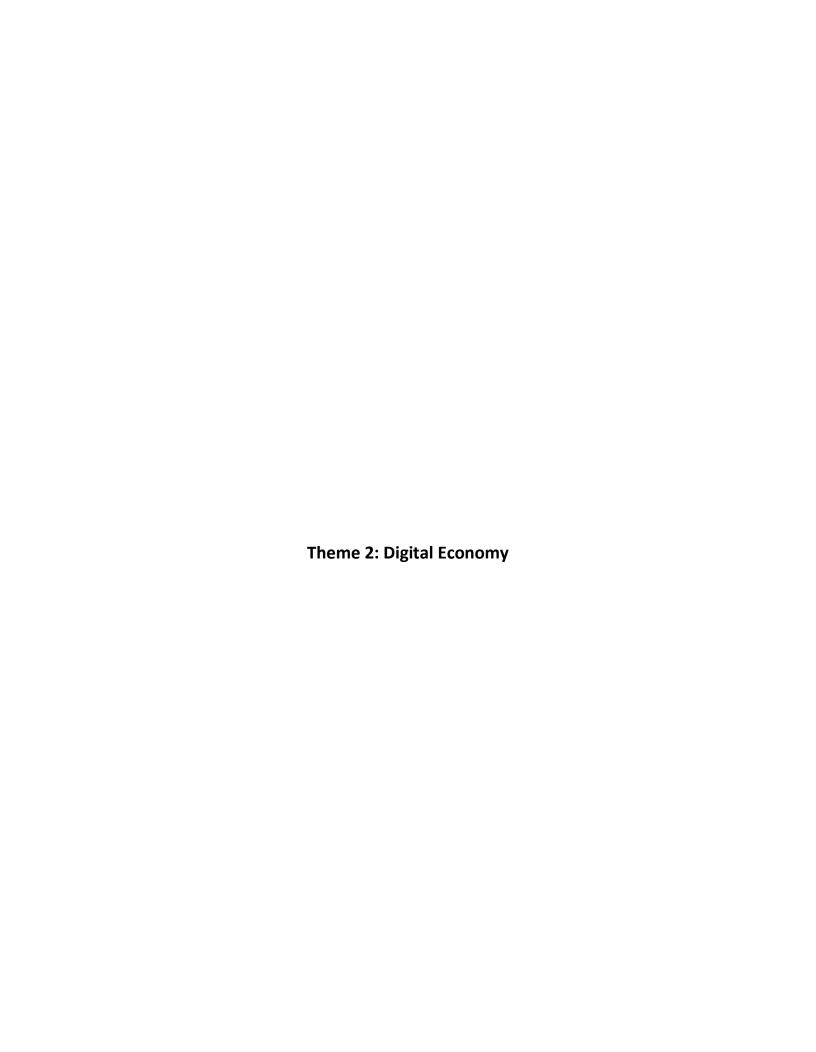
4. Prevalence of Undernourishment and its Associated Factors as a Hardship in Asian and African Regions; a Cross Sectional Study

Ms Sathsarani Weerasinghe, *Student, Department of Business Economics, University of Sri Jayewardenepura, Sri Lanka*
Ms Thilani Lavanga Navaratne, *Senior Lecturer, University of Sri Jayawardenepura*
Mr Pasindu Dissanayake, *Assistant Lecturer, University of Sri Jayewardenepura*

As a component of Malnutrition, Undernourishment has made measurements on different countries or regions with respect to an insufficient share of population that has a daily intake of food for maintaining the amount of dietary energy to an active and healthy life. Continuous demand increasing, climate changes, economic and political crisis situations and recently, the COVID-19 pandemic have most prominently influenced to the ability to produce the food for countries. Food insecurity is also one of the majoring issues that directly affect with malnutrition and leading health issues in a country. This is to examine the status of undernourishment and its' related variables within the regions of Asia and Africa for the year 2019 - containing 51 and 54 countries respectively, as cross-sectional study for each region separately. It has been done a comparison also to have a picture about trends and possible solutions to mitigate hardships among each region. Data published by Food and Agriculture (FAO) organization has been occupied to check the significance in here for the Prevalence of undernourishment of regions with independent variables such as food insecurity, Incidence of caloric losses at retail distribution level, GDP per capita, Per Capita food production and Political stability. Here, there are all together 840 observations for both the regions to examine the study. STATA/SE 14.2 software has occupied to run the multiple linear regression to get the OLS output. The regression output says that When there is a 1% increase in food insecurity in Asian region, there will be a 20.32% increase in undernourishment and When there is a 1% increase in food insecurity in African region, there will be a 29.82% increase in undernourishment. After completing the analysis for each region based on regression results, it has cleared that there would be a greater impact of food insecurity on undernourishment for African region compared with Asian region. Endorsements are more likely to lies on social protectionism mechanisms and most use of limited resources for each region. In order to increase the food productivity for having the highest return

on capital, greater investments represent the advanced sustainable farming practices and research and development.

Theme 2: Digital Economy

5. Do Digitalization and Technological Progress Expedite the Digital Inequality in Emerging South Asian Countries?

Ms Shamima Nasrin, *Joint Director, Banking Regulation and Policy Department Bangladesh Bank*

The digital revolution is reshaping the global economy. Traditional and digital economies are merging, and business strategies, production, organizational structure, and governance are blending with cutting-edge digital elements. As a result, market developments lead to inequalities in the business, labor, income, and wealth worlds. In a number of emerging countries, technology has benefited equality by facilitating productive transformation and rapid economic growth. For instance, fintech expands the financial system in China which facilitates more credit to borrowers, thereby improving production, welfare, and the living standard of Chinese citizens (Appiah-Otoo, I.; Song, N., 2021). In contrast, not all the emerging countries are ready to cope with the benefits of digitalization. The informal market is where most of the activities of the populace in emerging nations are conducted. This paper will examine the effect of digitalization and technological progress on the inequality of 15 emerging and developing Asian Countries for a ten-year period by using Ordinary Least Square (OLS) method.

6. Nexus between Digitalization, Productivity, and International Trade Participation: Firm-level Evidence from India's Unorganized Sector MSMEs

Dr Neha Jain, *Assistant Professor of Economics, Indian Institute of Foreign Trade (IIFT)*
Ms Sugandha Huria, *Assistant Professor, IIFT, New Delhi*
Ms Kriti Sharma, *IIFT, New Delhi*

Can we advance digitalization as a major process determining firm-level productivity and in turn leading to greater participation in international market? Our study addressed this larger question in the context of India's unorganized sector MSMEs which form the backbone of the Indian economy by accounting for over 97% of its MSMEs (RBI, 2018). The sector has offered around 11.10 crore jobs out of which 3.6 crore have been in manufacturing sector, 3.9 crore in trade and 3.7 crore in other services (National Sample Survey, 2015-16). Overall, the MSME sector accounts for 45% of the manufacturing output, 40% of the total exports of the country; and 30.74% of GDP in 2014–15 (MSME Ministry Annual Report, Government of India, 2017–18). Although it is the second largest employer after agriculture in the Indian economy, the sector's contribution to GDP is quite low when we compare it with the world's average where MSMEs' contribution is 50% of global GDP and 70% of total employment (Report Reference4). This points towards the low productivity of the sector arising from other severe bottlenecks such as lack of

digital and human infrastructure, inadequate access to credit, low profitability, and lack of awareness, consequently affecting their potential to enter or compete in the global markets (Huria et al. 2022).

In this study, it is hypothesized that the transition into Industry 4.0 characterized by the integration of digital technology into production processes has a huge potential to boost productivity as it enables businesses to produce higher-quality goods at reduced costs (OECD, 2021) which, in turn, is a key source of competitiveness, particularly in the international markets (Antràs, 2003; Krugman, 1994; Melitz, 2003). Therefore, it is quite imperative to understand the nexus between digitalization, productivity, and participation in the international market for the growth of the India's unorganized sector MSMEs and to achieve the target of becoming a $5 trillion economy by 2028-29. Though there exists a great deal of evidence in the literature suggesting a positive link between digitalization and export performance, it is rather limited in the Indian context. For the Indian organized sector MSMEs, the only study by Huria et al. (2022) finds that firms with higher investment in digital assets are not only more likely to enter the export market but also exhibit greater export intensity if they are already exporting. Clearly then, digitalization has ushered in new opportunities for India's organized MSME sector. Against this backdrop, our study focuses on the unorganized sector MSMEs for which no such empirical evidence is found, and tries to address the following objectives for both manufacturing and services sector firms: (i) Does digitization have any productivity-enhancing effects for the unorganized sector MSME firms? (ii) How does the impact of digitization vary across different levels of productivity (iii) What is the influence of digitization when combined with higher productivity in facilitating export market entry for these firms? (iv) Is there any differential bearing of digitization on productivity and export market entry of manufacturing vis-à-vis service sector firms? Given that the Indian manufacturing sector has been experiencing stagnancy in its growth for the past decade and a half, with more manufacturing sector trade rather than services trade getting impacted since the onset of the COVID-19 pandemic, addressing the last objective offers critical policy suggestions to revamp the country's overall production growth, and hence, exports.

The study is conducted using the National Sample Survey's (NSS) 73rd round on unincorporated non-agricultural enterprises, 2015-16, which is the first NSS round incorporating information on 290,000 MSME firms' digitization and related aspects. Our paper makes four key contributions to the literature: First, it establishes an empirical relationship between digitization and export market entry for India's unorganized sector MSMEs, which, to the best of the authors' knowledge, have never been attempted in the literature owing to the lack of adequate data. Second, analysis of a huge sample of unorganized sector MSMEs, comprising both manufacturing and service sector firms enables us to draw policy implications. Third, it validates the argument that greater digitization in association with higher productivity is a pathway to entering

international markets, thereby calling for a greater policy focus on the enhancement of firms' productivity. Finally, the robustness of the results is verified by using various methodologies such as Quantile regression and Probit regression.

The summary of the findings is as follows: First, digitization enhances the productivity of the firm, while controlling for firm-level characteristics and this impact is consistent across different levels of productivity as shown by quantile regression analysis. Second, a Probit Regression model shows that digitization, complemented with productivity, increases the predicted likelihood of a firm's participation in international trade. Third, the results are suggestive of the greater scope of gains from digitization in manufacturing firms vis-à-vis services firms. Fourth, given these critical observations, the important question, however, remains – "Are the Indian unorganized sector MSMEs digitally equipped to sufficiently leverage the benefits from growing online commerce?" The empirical assessment highlights that only 5% percent of firms have access to basic digital infrastructure. While the international peers of India heading rapidly towards the adoption of digital practices (ET Online, 2021), the results obtained in this study calls for immediate policy attention before the new age of Industry 4.0 (and the upcoming 5.0 revolution) turned out a bane (rather than a boon) for the Indian economy.

7. How Has Covid-19 and the Economic Crisis Shaped Platform-Mediated Gig Work in Sri Lanka? Evidence from a Field Survey

Ms Nimaya Dahanayake, Research Assistant, Centre for a Smart Future, Sri Lanka
Mr Anushka S. Wijesinha, Director and Co-Founder, Centre for a Smart Future, Colombo, Sri Lanka

The COVID-19 pandemic upended labour markets across the globe. Widespread job losses and increased reliance on technology for work, has transformed the way people work today. In Sri Lanka, the pandemic created both challenges and opportunities for platform-mediated gig work. In many urban and semi-urban areas of the major cities of Sri Lanka, the use of platform based ride sharing and delivery services like Pick Me/Pick Me Food and Uber/Uber Eats became extensive during the pandemic, with the government recognizing many of these services as essential. While increased digital literacy and connectivity in Sri Lanka has improved the number of users of such platforms, the economic crisis unravelling in the country at present, has hindered the expansion of platform-mediated gig work. This study explored two key factors shaping platform-based gig work in Sri Lanka; namely, the COVID-19 pandemic and more recently, the economic crisis. The aim of this research was to understand the impact of these factors on Sri Lanka's gig economy. The research followed a mixed methodology approach, with a primary survey of gig workers at the core of the study. The study concludes that the impact of both the pandemic and the economic crisis varies across the different types of gig workers/gig work

undertaken, while the motivation to join the gig economy largely predates the pandemic and the economic crisis, with many citing the flexibility of gig work as a key attraction.

8. E-Commerce, & the Indian Retail and Manufacturing Sectors- An Empirical Analysis with a Specific Focus on Organized Sector MSMEs

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Ms Sugandha Huria, Assistant Professor, IIFT, India;
Ms Ashley Jose, Research Analyst, Centre for Social and Economic Progress, India
Dr Kanika Pathania, Consultant, IIFT, India

The fourth industrial revolution has led to the digitalization of economic activities around the globe. Big e-commerce firms have been the leaders on this front. Like most countries in the world, India too has been witnessing an expansion in its e-commerce sector in recent years. Factors such as the growing penetration of smartphones, cheap modes of communication, better logistics systems, digital payments, and an expanding workforce, among others, have contributed significantly to the growth of its e-commerce sector. E-commerce earlier have limited capture of products but today they have multiple product ranges including electronics, apparel, grocery, loan to Kirana stores, etc. E-commerce share in India comprises a small share of the total retail market. According to the Economic Survey, the e-commerce market has been estimated at USD 43 billion for 2018-19, at a growth rate of 12 per cent. The latest report by the IBEF estimated that the overall e-commerce market will reach USD 75 billion in 2022, experiencing a growth rate of 21.5 per cent. The sector is expected to attain USD 350 billion by 2030. This will help India's vision to become a trillion-dollar digital economy by 2025.

Theme 3: Economic Growth and Development Challenges

9. Environmental cost Adjusted National Accounts for Coal Mining in India

Mr Dasarathi Padhan, *PhD Student, National Institute of Science Education and Research, Bhubaneswar, India*

National Accounts, which systematically account for economic activities, are essential to evaluate the economy and formulate policies for economic growth. To measure national accounts, the United Nations' System of National Accounts (SNA, hereafter) gives the structure that is followed across countries to maintain uniformity and comparability. This conventional measure of national accounts is being challenged, particularly after the Brundtland commission report on sustainable development, due to its negligence towards environmental aspects of the economic activities. Human economic activities have environmental consequences such as pollution, natural resource depletion, destruction of biodiversity, etc. These are the environmental costs we have to bear for our economic activities. UNSNA does not consider these costs in the national accounts measurement process. Environmental assets are ignored in the accounting system (Padhan and Das, 2021). Non- inclusion of the environment in national accounting happens in two ways. Firstly, non- inclusion of the value of goods and services provided by nature (Hueting, 1987), and secondly, not considering the depletion of natural capital (Elsarafy, 1989). The accounting process should consider the degradation of natural resources (Bartelmus and Tongeren, 1994). Common and Sanyal (1998) argue that we need to have environmentally adjusted accounts to make policy for sustainable development. These accounts would lead us to understand the path of sustainability. Policies made using accounts that do not adjust the harmful effects of economic activities on the environment lead to unsustainability (Santos and Zaratan, 1997). Green GDP reflects both the economic and environmental conditions of the countries (Xu et al., 2010). Environmental accounting is necessary to guide policymakers to utilize the resources and protect the environment adequately. Dasgupta (2013) explains that the calculation of GDP is necessary but not sufficient to understand the welfare of the people.

To overcome this limitation in GDP measurement United Nations has initiated bringing alternative measurements. Handbook of Integrated Environmental and Economic Accounting was introduced in the 1993by United Nations. The latest version of the handbook, System of Environmental-Economic Accounting 2012_Central Framework (UNSEEA), provides an alternative measurement of national accounts that incorporate the environment (UN, 2014). and Energy resources include oil resources, natural gas resources, coal & peat resources, non-metallic mineral resources, and metallic mineral resources. Depletion of these resources is not considered in calculating state GDP. This paper tries to calculate the Environmentally Adjusted Gross Value Added (EGVA) from Mining and Quarrying in India. I have estimated the depletion cost and pollution cost from coal production in India from 2004 to 2015.

10. Structural Comparison of Regional Growth between China and India

Dr Sunetra Ghatak, Assistant Professor, Jindal School of Government and Public Policy, O. P. Jindal Global University, India

World has witnessed the emergence of two fastest growing economies in the world, namely, China and India. These two giants today represent Asia's two largest and most dynamic economies which are expected to set new trend in international relations. Especially, during the last three decades China has increasingly attracted the attention of the global economic community due to its excellent track record in maintaining a high growth rate unparalleled in the annals of the world economy (Zheng, et al. 2009). To be sure, China is the one major power that impacts directly on India's geopolitical space and that is likely to pose the most important challenges for India's foreign policy and strategy. The gaps in overall economic size and potential between China and India are already significant and likely to increase in the near future. This could result in a corresponding increase in the power differential between the two countries. In consequence, getting the measure of China's rise remains the single-most important task for India's foreign policy. Therefore, the future relationship between India and China is going to be both competitive and collaborative as the same time. However, the relationship will not be a balanced one as the Chinese economy is already stronger on almost all fronts. But India definitely can build a strong economic relation with China to utilize and maximiseits bilateral trade potential.

With the advent of rapid economic transformation and growth in China and India, this paper adds to the literature by focusing on regional growth dimension in the two countries. In particular, it attempts to explore how regional economies in the two vast countries have performed during the period of high growth and assess whether or not regional disparity has deteriorated as economic liberalization deepens. It further tries to identify the role of trade liberalization by seeing the state-wise trade openness along with other sources of regional disparity if any (Srinivasan, 1994; Swamy, 2003; Srinivasan, 2004; Balasubramanyam and Wei 2005; Kehal, 2005; Singh, 2005; Wu and Zhou, 2006; Wu, 2007). In view of the above, this paper aims on comparing growth and regional disparities across India (States and Union Territories) and China (Provinces and Special Municipalities) over the period 1990 to 2020. The notion of regional disparity is measured with β-convergence, σ-convergence. Further assessment will be done to check sources of disparity (if any) with the help of regression approach using a number of determining factors such as human capital, infrastructure, urbanization, industrialization and trade openness.

11. Macroeconomic Determinants of Income Inequality in South Asia

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Income inequality has become one of the biggest social, economic, and political problems facing the world today. According to the Sustainable Development Goals (SDGs) 2030, income inequality has emerged as one of the key concerns for economic policy in both developed and developing countries (IMF, 2015). Even though South Asian economies have recorded impressive economic progress in recent decades, which has brought with it a number of problems. One of the region's most serious problems is the rise in income inequality (Pata et al., 2022). By considering, all these facts into account, the objective of this study is to identify the macroeconomic determinants of income inequality in South Asia. Therefore, in order to test the objective, panel data from six South Asian countries from 2009 to 2019 is used in the data analysis, which covers a period of 11 years, and a Pooled OLS model is used in order to estimate the parameter. Finally, the study revealed that the unemployment rate, inflation rate, investment, foreign direct investment, urbanization and economic development are the main determinants whose increase leads to a rise in income inequality in South Asia, while the fertility rate and natural resource endowment also have a statistically significant, but a negative impact on income inequality in South Asia.

12. A Proposal of Dynamic Human Development Index for G7 Countries: Re-visiting Human Development Index

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Dr Hemlata Manglani, *Associate Professor, Department of Economics, Central University of Rajasthan, Kishangarh, Ajmer, India*
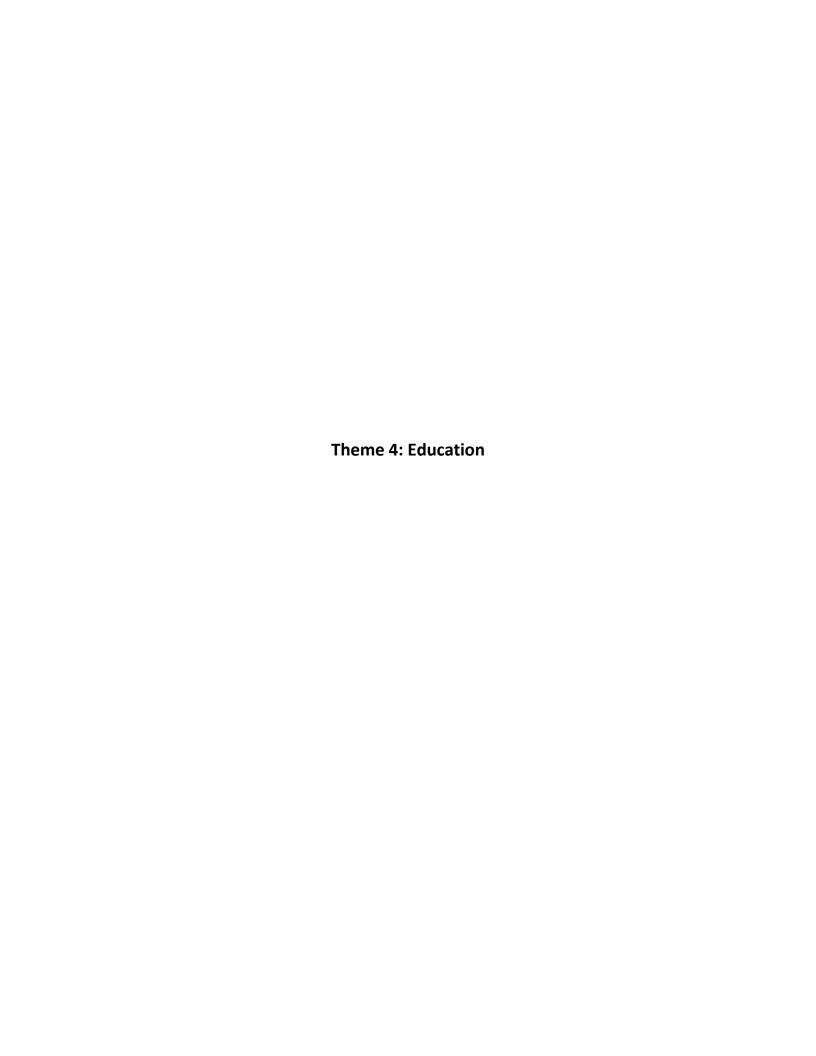
Human Development Index (HDI) is the barometer used to estimate human advancement as it broadly combines knowledge and longevity besides the economic front, i.e., the standard of living. It serves as HD paradigm's main indicator holding relevant designation in the development arena (Dervis & Klugman, 2011; Klugman et al., 2011; Morse, 2014). It only encompasses the socio-economic hands of human development. The primary goal of development is to develop an ambiance enabling people to live long, healthy, and productive lives. In actuality, the concept

of humans as the 'principal goals' of the development process asks for focus to be placed on what people obtain from development, not merely what they put into it.

HDI has various bottlenecks based on conceptual definition, technicalities, components included, and sustainability parameters. (Ivanov & Peleah (2013); Hickel (2020), Trabold-Nubler, 1991; McGillivray, 1991; Streeten, 1995; Morse, 2003, Kelly, 1991; Srinivasan, 1994; Ravallion, 1997; Noorbakhsh, 1998; Grimm et al., 2008), Here comes the scope for alterations in HDI such that it can picturize the human development of the nations holistically. G7 nations comprises of Canada, France, Italy, Japan, Germany, United States and United Kingdom. It is the group of developed or high-income nations integrated to assist each other in the path of development, and industrialization. Majorly, these member nations of G7 comes in the Very high HDI range. Hence, they are chosen to visualize that whether their position will change or not in delivering the human well-being to their citizens when other aspects of human development will be added such as better measures of education, health, human values and sustainability.

As "human development" is an intrinsically enigmatic term, adopting PCA for weighting can be justified. Especially considering the fact that each of the three HDI dimensions conveys crucial aspects of human development, none of them can enclose it. Sustainable human development is inextricably linked to human development. No HDI component, though, presently fully captures it (UNDP, 2010). Deb (2015) devised that any anticipated modifications to the HDI methodology should portray a holistic picture of SHD, contemplating two vital concerns: adding missing dimensions and transitioning to the statistical estimation of dimensional weights. Also, the proposed index could determine if current policies align with a long-term sustainable route from a sustainable perspective or Sustainable Human Development (Jin et al., 2020).

Fabricating composite index has strengths and drawbacks (Zhou & Ang, 2009). Nevertheless, composite indicators can be used to summarise complex or multifaceted issues, such as human development (Saltelli, 2007) or sustainable human development. Due to its ability to accurately portray reality, such a summary statistic is an indispensable tool for worldwide performance comparisons, benchmarking, policy analysis, and mass communication (Zhou et al., 2009).

Theme 4: Education

13. Determinants of Female Participation in the Tertiary level of Education in Bangladesh

Dr Md Deen Islam, *Associate Professor, Department of Economics, University of Dhaka*

This paper investigates the determinants of females' participation in tertiary level of education. Using the latest household income and expenditure survey of Bangladesh, I find that a combination of individuals, household heads, and households' characteristics can significantly affect the chances of study continuation and the choosing STEM as a field of study for females. Comparing males and females, I obtain that females have a significantly lower probability of continuing post-HSC study and choosing STEM as a field of study. Among females, individual characteristics, such as age, employment status, marital status, religion, disability, and chronic disease, can significantly affect the chances for females to continue their studies at the post-HSC level. Household heads' characteristics, such as gender, age, level of education, and marital status of household heads, are significantly correlated with the odds of study continuation for females. Similarly, households' characteristics, such as demographic dependence, household size, participation in social safety net programs, household level disability and chronic diseases, the total number of female members, income and poverty, can influence the chances of females' participation in the post-HSC level of education.

14. Investigating Educational Inequality in Bangladesh: A Decomposition Analysis

Mr Md. Nadim Uddin, *Lecturer, Department of Economics, Sheikh Hasina University, Netrokona, Bangladesh*
Mr Sakil Ahmmed, *Lecturer, Department of Economics, University of Dhaka*

Over the last two decades, Bangladesh has made significant strides in ensuring educational opportunities for its citizens. The literacy rate has significantly increased from 35.32 per cent in 1990 to 74.66 per cent in 2022. However, the question remains whether the educational opportunity in Bangladesh is equitable or not. There may exist inequality in education associated with location, gender and socio-economic status which might lead to the skewed distribution of educational opportunities. Since education contributes to human capital, equitable distribution of education is the precondition for individual productivity and efficiency which on the other hand led to higher wage and contribute to rising above poverty (Matin, 2017).

Against this backdrop, this study attempts to explore the current state of educational inequality in Bangladesh, and identify the key contributing factors that lead to this inequality. The findings of this study might pave the way for the development of comprehensive policy

documents that would allow the policymaker to intervene to ensure more equitable educational opportunities in the country.

In this regard, as a measure of educational inequality, this paper uses the education Gini coefficient estimated based on the individual's years of schooling. Moreover, a decomposition of the Gini coefficient based on the location (rural-urban and divisions), gender (male and female), socio-economic status and age has been used to assess the relative importance of these factors to the educational inequality in Bangladesh.

15. Heterogeneity in Education and in Return to Education among Eight Divisions in Bangladesh: A Comparative Study between Wage Earners and Entrepreneurs
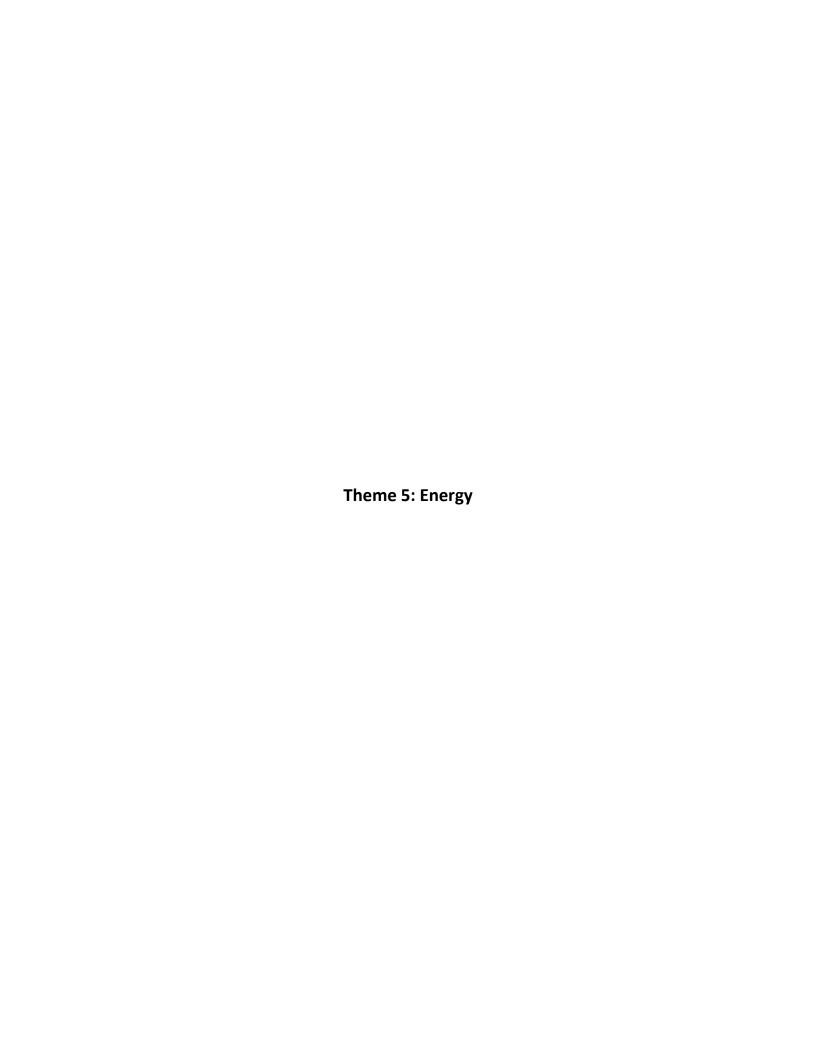
Mr Ekramul Hasan, Research Associate, SANEM

Bangladesh is divided into eight divisions namely Barisal, Chattogram, Dhaka, Khulna, Mymensingh, Rajshahi, Rangpur and Sylhet. This study thoroughly examines the heterogeneity of returns to education among the divisions for both wage earners and entrepreneurs (Self-employed and Employers). The average return in country level is found to be 5.7 percent for the wage earners and 6.7 percent for the entrepreneurs. The return is higher for women within the wage earners and higher for men within the entrepreneurs. Urban areas have higher returns than rural areas for both wage earners and entrepreneurs. Khulna division has the highest return on average in wage earners and Chattogram has the highest return on average in entrepreneurs for an additional year of schooling. The male return is the highest in Khulna for the wage earners and in Chattogram for the entrepreneurs. The female return is the highest in Rangpur for the wage earners and in Dhaka for the entrepreneurs. The urban return is the highest in Rajshahi and Rangpur for the wage earners and in Chattogram for the entrepreneurs. The rural return is the highest in Khulna for the wage earners and in Chattogram for the entrepreneurs. The study finds that the statement that 'the division that has the highest schooling years also has the highest return to education' is not statistically significant. Heterogeneity in return across the divisions, based on gender and region, is more prominent among the wage earners than the entrepreneurs. The returns to education on wage employment and the returns on self-employment hardly coincide across the divisions. The average return on women is significantly high across the divisions in terms of wage employment but very low and even negative in terms of self-employment. This study also finds that a higher autonomous wage or income of a division does not ensure higher return. Rather, a negative relationship has been found between the autonomous wage and the college level return to education.

16. Analysing the Role of Household Resources to Reduce the Gender Gap in Private School Enrollment: Recent Evidence from India

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Dr Angrej Singh Gill, Assistant Professor, Panjab University Rural Centre, India

Gender inequality in education is a well-researched area in the literature. Many of the world's developing countries, including India, have also emphasized improving access to girls 'education. We find growing literature on gender inequality in access to education, household investment in education, and recently the focus is to study the gender differences in learning outcomes (Aslam & Kingdon, 2008; Azam & Kingdon, 2013). With several policy interventions, including the target to minimize gender inequality in the educational opportunity of the Sustainable Development Goals (SDGs), there is a significant improvement in the educational attainment among girls worldwide. The world gender parity index in school enrolment (including primary and secondary education) is 0.986 in 2019, which was 0.789 in 1970 (World Bank, 2019). Along with developed nations, developing countries have progressed well in bringing girls to schools. For instance, in India, the GER in elementary education (class 1 to 8) is 97.8 per cent for girls, which is higher than boys, i.e., 96.7 per cent in 2017-18 (U-DISE, 2020). Though access to school education among girls has improved significantly in India, the recent National Education Policy (NEP) 2020 recognizes the significant gender disparities in access to quality school education (MHRD, 2020). It targets to provide equitable quality education for all girls in the country by creating a 'Gender-Inclusion Fund.'

Theme 5: Energy

17. Carbon Border Adjustment Mechanism: Inference from the Perspective of South Asian and Southeast Asian Nations

Mr Saswata Chaudhury, *Senior Fellow, The Energy and Resources Institute (TERI), New Delhi, India*
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Globalization has increased opportunities for international trade opening up prospects for growth and economic development. However, along with its growth benefit, deregulation brought by economic reforms of 1980s-90s has proved detrimental to global environment. With the launch of IPCC Sixth Assessment Report, awareness of the climate risks among both developed and developing nations has increased as countries have now committed ambitious carbon neutrality goals while drawing on a lot of Nationally Determined Contributions to curb global green-house gas emissions.

In this regard, European Union (EU) has emerged as the first region to commit carbon neutrality by 2050 and came up with its legally binding EU Green Deal (EUGD). An important provision of EUGD is Carbon Border Adjustment Mechanism (CBAM) which will apply on import of goods at the price of carbon determined by EU ETS system. Importers would be charged either on basis of default or actual emissions embedded in the imports (EU CBAM proposal, 2021). The overarching aim is to establish a level-playing field between domestic producers and producers based outside of the EU, creating an incentive for the latter to invest in clean technologies. However, developing countries fear that implementation of the tax might create trade distortions.

18. Energy Poverty and Financial Inclusion: Empirical Evidence from Rural Bangladesh

Ms Samiha Islam, *Student, Department of Economics, University of Dhaka*

In the developing countries, the alleviation of poverty is one of the most sought-after realities. As of 2021, around 1.3 billion people are living in multidimensional poverty in 107 developing countries (Peer, 2021). One of the dimensions of poverty and development is the energy services as energy is an important factor related to the basic needs such as cooked food, lighting, the usage of appliances, essential health care, mass communication and telecommunication, etc. (Goldemberg, 2000). "The absence of sufficient choice in accessing adequate, affordable, reliable, high-quality, safe, and environmentally benign energy services to support economic and human development" is known as energy poverty (Reddy, 2000).

According to a report, Bangladesh has the lowest access to clean cooking fuel in South Asia as around 77% of the people do not use clean fuels and technologies for cooking at home (IEA, IRENA, UNSD, World Bank, WHO, 2021). Though Bangladesh have come a long way in terms of using clean energy for cooking, lighting, and other works, energy poverty is still an important factor that should be focused on.

19. Role of Renewable Energy in Green Economic Growth: Evidence from Selected Emerging Market Economies

Ms Megha Chhabra, Research Scholar, Department of Economics and Finance, Birla Institute of Technology and Science (BITS), India
Dr Arun Kumar Giri, Professor, Department of Economics and Finance, Birla Institute of Technology and Science (BITS), Pilani, Rajasthan, India

Energy consumption has been one of the most critical drivers of economic growth, particularly when fossil fuels have continued to dominate the energy consumption basket for decades. Such widespread use of non- renewable resources has raised several sustainability concerns, including a looming energy crisis, rapid depletion of natural resources, and increased carbon emissions. Therefore, the transition of energy mix towards renewable energy sources has become unavoidable for some countries due to three significant factors: continuous implicit cost for using non-renewable sources, high price volatility for imported oil products, and environmental agreements to reduce carbon emissions. Because of these growing environmental and economic concerns, using renewable energy is essential to ensure a sustainable path for economic development. This extends the concept of green economic growth, in which economic development occurs with reduced negative environmental externalities that promote long-term environmental sustainability. To this end, relatively higher renewable energy consumption is required to ensure green economic growth. However, it entails some high-end costs, such as establishing renewable energy facilities, higher power prices, and skilled knowledge, which many developing countries lack. This casts doubt on renewable energy's efficacy in fostering a greener environment, particularly in developing countries where emissions are enormously high but resources are scarce.

20. Regional Co-operation for enhanced Clean Energy Trade in the Ganga-Brahmaputra Meghna Basin

Ms Baishali Lodh Chowdhury, Research Associate, CUTS International
Ms Sucharita Bhattacharjee, Policy Analyst, CUTS International

The Ganga-Brahmaputra-Meghna (GBM) basin, is one of the largest hydrologic regions in the world with a drainage area of approximately 1.75 million sq km. It encompasses the nations of India, Bangladesh, Nepal, and Bhutan, housing about two-fifths of the developing world and about 10% of the world's population. While the three rivers have notably distinct hydrological systems, they cover a significant portion of the Indian subcontinent and approximately 1.2% of the earth's surface area.

Given the volume of water carried by these three rivers and their rich hydropower potential, the basin exhibits a strong potential to create an enabling ecosystem for a regional clean energy market for the co-basin nations which can serve as the basis for a cross-border clean energy exchange between them. This is extremely relevant considering the high vulnerability of this basin to the adverse effects of climate change, along with the growing energy demands of the four countries that the river systems flow through. In this context, cross border clean energy trade can prove to be a beneficial strategy not just for climate change mitigation but also for ensuring energy security.

While the GBM has been the subject of several studies, much of it is focused on transboundary water resource management and water politics along with biophysical explorations of the complex upstream and downstream linkages in the basin. Literature on the socio-economic and institutional aspects of cross-border co-operation for renewable energy trade has been rather sparse, despite the existing bilateral hydropower trading arrangements between the four countries of the basin. In the face of increasing electricity needs and individual carbon emission targets, each of the co-basin countries could highly benefit from multilateral clean energy co- operation.

Given this context, this paper explores the benefits of shared hydropower potential and whether a collective clean energy trade regime can result in enhanced energy outcomes for the co-basin countries. Furthering this exploration with a comparative analysis of the existing water and energy nexus which are mostly restricted to bilateral arrangements, this paper also attempts to understand the major roadblocks to trilateral and quadrilateral arrangements and ultimately aims to come up with a strategic roadmap to overcome these and ensure the formation of a regional cross border clean energy regime in the GBM basin.

The study will be exploratory in nature and will build upon secondary sources of data from various databases including our past project experiences as well as direct interactions with a number of relevant stakeholders.

Theme 6: Environment and Climate Change

21. Depiction of Real Scenario of Climate Change Using Rainfall, Sunshine & Humidity Trends in Patenga Station, Chittagong, Bangladesh

Ms Arpita Datta, Lecturer, Premier University Chittagong, Bangladesh

Mr Sujan Rudra, Independent Researcher, Bangladesh

In this paper, scenario of climate variables for the long term has been depicted. The paper contains the analyses of the variations in climatic variables in the Patenga Station of Chittagong district in Bangladesh. It shows current scenarios for a particular region, analyses the environmental parameters, and tries to forecast the further changes particular climatic variables like rainfall, humidity, and hours of sunshine; that could help in reducing the risks of climate change. Forecasting of the climatic scenarios have greater policy implications for the researchers, policy makers etc.

22. Impact of European Union Policy Tools on Certified Emission Reduction (CER) Prices - Feeble Future of Clean Development Mechanism (CDM) Market

Ms Komal Biswal, PhD Student, Centre for International Trade and Development, Jawaharlal Nehru University, India

Dr Aparna Sawhney, Professor, Centre for International Trade and Development, JNU, New Delhi

Climate change is a global commons problem and is widely acknowledged as one of the biggest challenges of this century. With agreement on Kyoto Protocol, there were expectations of emergence of a single carbon market just like the stock markets across the world. Many emission trading programs have emerged at national and sub-national level in recent times which are working towards reducing emissions. Moreover, the adoption of the Paris Agreement in 2015 has increased the complexities of carbon markets with the global participation in climate change mitigation (Michaelova et. al., 2019). As a result, governments are considering strong policies for achieving emission reductions by using carbon pricing instruments. However, this new regime has also posed a challenge on the role of emission offsets, its functionality and fungibility in the global market.

23. Multidimensional Vulnerability of Household to Climate Change: Evidence from Punjab, Pakistan

Dr Bushra Yasmin, *Professor of Economics, Fatima Jinnah Women University, Pakistan*

Ms Iffat Irshad, *Assistant Professor, Fatima Jinnah Women University*

Ms Sadia Sherbaz, *Lecturer, Fatima Jinnah Women University*

The study is an attempt to assess people's perception about climate change risk and their likely vulnerability to it which has certain irreversible but manageable impacts on non-traditional human security i.e., economic, health and food security. The study is based on primary data collected through a well-structured questionnaire from 1000 households in year 2021 from four Districts of Punjab (Rawalpindi, Sialkot, Lahore and Bahawalpur). Climate change risk is computed by deducting adaptability score from the additive of exposure and sensitivity measures while human security is a composite index obtained from weighted average of each of its dimensions. According to the empirical findings, most of the households in our sample (73%) have moderate to high level of human security, while only 8.2% of households are highly secure, with an overall human security index 0.723. The average value of climate change risk index is 0.555 with about 15% of the household facing high level of climate change risk. The data further shows that about 73% of the households in our sample have moderate exposure to climate change risk. About 18% of the households experience low sensitivity of climate change risk compared to 12% experiencing high sensitivity. About 70.5% of the households have moderate sensitivity to climate change risk. Both sensitivity and exposure raise the climate change risk. Adaptation on the other hand can be instrumental in reducing the climate change risk. Most households (75.4%) have moderate levels of adaptation, with an average adaptation score of 0.521. The empirical findings based on econometric model suggest consistently significant and negative impact of climate change on human security. Three elements of climate change risk index i.e., adaptation, exposure, and sensitivity show diverse findings where adaptation has positive effect on human security while, exposure and sensitivity have negative effect on human security and on its all three dimensions (economic, food and health security). This negative effect on human security and its constituent dimensions is significantly large and adaptation seems to be inadequate to compensate for this decline, as measured by the interactive variables. This might be due to the fact that most households are unaware as to which adaptation strategies should be implemented when climate-related stress occurs. The role of other control variables indicate that urban households' human security is statistically significantly lower as compared to rural individuals that might be due to rising urban population and agglomeration which can also curtail the efforts

to climate adaptation. From gender lens, the households headed by male are more secure than female headed households which highlights the decision makings where men take risk while taking decisions while woman might be more inclined to risk-averse decisions. The education of head of household bears positive effect on human security as educated household head has a better wage outcome in market, higher rate of return in investing in education, use technologies efficiently and have higher productivity. The interaction term of education of head with climate change risk shows a mitigating role played by head's education as educated household has more understanding of climate risk and able to manage it appropriately and respond quickly. Similarly, the households with sound financial background have better standings on human security than poor and debt-trapped household. The interaction terms of climate change risk with the variable of financial position yield a mitigating role of sound financial background of the households in reducing negative effects of climate change on human security. Moreover, the district dummies provides that households located in district Rawalpindi and Sialkot have more human security as compared to households located in Lahore. While households in Bahawalpur are less secure than those in Lahore. Bahawalpur has the highest proportion of households facing high climate change risk (35%) while lowest percentage (15.5%) is located in Sialkot. Overall findings provide evidence-based facts and identifies significant environment for managing adaptation to climate change in selected area at individual, community and sub-national level.

24. Role of ICT Diffusion, Energy Consumption, and Institutional Quality on Environmental Sustainability in Emerging Economies

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Ms Megha Chhabra, Research Scholar, BITS, Pilani, Rajasthan, India

Dr Arun Kumar Giri, Professor, BITS, Pilani, Rajasthan, India

Although emerging market economies have sustained significant growth in the last few decades, increasing pollution has prompted policymakers to question the sustainability of this growth in the long run. In this regard, the present research intends to examine the environmental sustainability of 20 emerging economies for the period 2005–2019, focusing on the impact of ICT diffusion, energy consumption, trade openness, and institutional quality on CO2 emissions. Using economic techniques robust to cross- sectional dependence (CSD) like Westerlund co-integration and system GMM, findings confirm the pollution haven hypothesis in response to leakage phenomenon. The findings show that ICT reduces CO2 emissions; nonetheless, its lack of

improvement in energy efficiency raises environmental concerns. The findings indicates that the positive impact of renewable energy sources is insufficient to offset the ecological damage caused by use of non-renewable energy sources. The institutional regulatory quality and effectiveness of laws serve as key elements for the effective use of renewable energy sources. Therefore, enhanced institutional quality and increased investment in ICT advancement are two areas that emerging economies should target emerging economies wish to assure a sustainable economic future. Emerging economies must advocate for trade-associated environmental standards and energy-efficiency measures to improve and sustain environmental quality.

Theme 7: Gender Inequality

25. Persisting Gender Inequality: Time Use for Paid and Unpaid Work

Ms Jyoti Thakur, *Senior Research Fellow, Institute for Social and Economic Change (ISEC), Bangalore, India*

Based on Time Use Surveys of 1998 and 2019, the paper investigates whether there has been an increase in similarity between men and women's time utilization by using dissimilarity index; nature, pattern, and trend of time allocation of men and women across different activities; and the impact of marriage and education on the allocation of time across different activities in urban India. In India, a significant progress in some developmental aspects have been achieved toward gender equality in recent decades; however, inequities in the distribution of household work and care work responsibility persist due to the existing gender norms and stereotypes. Women and men's time usage patterns alter dramatically as a result of life events such as marriage and children. Empirically, it is evident that women bear the prominent brunt of the unpaid work. Consequently, despite attaining higher educational qualifications, women participation in paid work remains abysmally low.

26. Gender Pay Gap in the Microfinance Industry: Empirical Evidence

Dr Md Aslam Mia, *Senior Lecturer, Senior Lecturer, Universiti Sains Malaysia*
Dr Lucia Dalla Pellegrina, *University of Milano Bicocca, Italy*
Dr Wai-Yan Wong, *Universiti Kebangsaan Malaysia, Selangor, Malaysia and*
Mr Sunil Sangwan, *Institute of Rural Management Anand, India*

This study aims to investigate the possible existence of a gender pay gap within Microfinance Institutions (MFIs). These institutions are traditionally women-centered, i.e. they have a significant share of women employees at every level of the corporate hierarchy, and mostly serve women clients. We use a database composed of 2,545 of MFIs (majority are from Asia- Pacific countries) globally for the period 2008-2018 to explore the relationship between the share of women employees and average employees' compensation. Applying both traditional estimation methodology (pooled OLS and Random Effects linear models), and techniques aimed at accounting for possible endogeneity among the main variables (system GMM and Hausman-Taylor model), we find that on the one hand, a higher proportion of women on staff increases the average expenses per worker (that include also the incentive components of remuneration), while on the other hand, it seems to have weakly or no significant effects on the average base salary. This leads us to conclude that, similarly to what is testified in other sectors of the economy MFIs may tend to pay women less. Nevertheless, significant positive effects of women on MFIs' staff on average overall personnel expenses suggest that women may exploit gender-affinity

relationships with customers to expand the loan portfolio, which allows them to be compensated with larger bonuses and other benefits not included in the base salary.

27. Impact of Intimate Partner Violence on Children's Nutritional Outcome in India: Evidence from National Family Health Survey 2019-21

Dr Amrita Chatterjee, *Assistant Professor, Madras School of Economics, India*
Ms Ngawang L Thakur, *Business Analyst, Deloitte Consulting India Pvt Ltd*

Studies based on India accept that maternal health and exposure to IPV during pregnancy or at the early childhood have far-reaching impact on child health. However, the role of gender norm and acceptance of those norms from child-bearing women get mostly unnoticed in this context. Given the prevalence of IPV in the patriarchal social system and the psychological burden borne by children as secondary victims, the objective of this study is to use NFHS-5 data on children of 0-5 years coupled with their mother with comprehensive measures of IPV, and analyze the association between IPV and the health outcome of young children by taking into account the possible endogeneity of IPV.

28. Impact of Women's Education on Fertility Rate in South Asian Countries

Ms Fathima Rakeesa, *Student, Department of Business Economics, University of Sri Jayewardenepura, Sri Lanka*
Ms Thilani Lavanga Navaratne, *Senior Lecturer, University of Sri Jayawardenepura*
Mr Pasindu Dissanayake, *Assistant Lecturer, University of Sri Jayewardenepura*

Over the last three decades fertility rate declines substantially all over the world. The aim of this study is to investigate the impact of women education on fertility rate in the South Asian countries. Data are taken from five south Asian countries named Bangladesh, India, Sri-Lanka, Pakistan, and Afghanistan over the period of 2005-2020. The macro analysis with secondary data, mostly obtained from World Bank database, was stacked randomly in a balanced panel set-up, within which the most preferred fixed effect model is used for multivariate analysis. Categories such as women's empowerment, health, connectivity and cost of living were used to classify proxy variables as regressors for fertility determination. The results indicate variables such as enrolment of tertiary education, female labor force participation rate, real GDP and urban population are negatively correlated with fertility, while consumer price index (inflation) is positively correlated with fertility rate. Enrolment of tertiary education has negative relationship with fertility; however, it is not statistically significant. In particular, many studies showed that women's education and employment have been identified as major parameters for the decrease in fertility rate. Therefore, this paper is an extension of previous studies, estimating the relationship between women's education and level of fertility rate.

Theme 8: Health

29. A Systematic Scoping Review on People-Centered Economy for Building Macroeconomic Resilience in Healthcare Using Perceived Economic Model of Health Equity in the Context of South Asian LMICs

Ms Fahmida Akter, Student, Institute of Health Economics, University of Dhaka

Achieving overall health equity in a health system is dynamically challenging. It is even more difficult for lower-middle-income countries (LMICs) to create a health system that ensures economic resilience by maintaining health equity. Meanwhile, the People-Centered Economy (PCE) framework appears to be more promising to deal with real-life problems such as corruption, medical malpractice, negligence, barriers to care, inadequate labor force, etc. by shifting from the task-centered economy that is liable for generating inequalities, market failures, unemployment further (Nordfors & Cerf, 2018). In healthcare, the considered determinants of health equity are closely related to understanding practical demand-side needs; therefore, designing supply-process based on prioritizing people can reduce inequities in health attaining overall macroeconomic growth. The objective of this study is to figure out potential scopes of PCE and build an economic model of health equity that sustain and recover any shock or disruption in South Asian LMICs This research informed by descriptive-interpretive methodology, employed Arksey and O'malley's five-stage systematic scoping review process to analyze all available pieces of literature on the people-centered economy; economic resilience model and health equity models. The secondary data was analyzed using The World Bank Health Equity and Financial Protection Indicators 2018 Dataset for South Asian countries Bangladesh, India, Pakistan, Nepal, and Bhutan in order to get insights about comparative perceived demand side necessities, having said that it is the pre-pandemic situation. The result showed a positive indication to adapt the PCE approach for establishing a resilient economy through health equity. Despite the limitation of the study, this research provides a conceptual framework for working areas in regional health disparities, inequities, and health innovations that can pave the way for sustainable development in global health.

30. Child Health Outcome in Nepal: Inequalities and Determinants

Dr Purna Bahadur Khand, Associate Professor of Economics, Pokhara University, Nepal

This study aimed to quantify child health outcome inequality in neonatal death, explore major contributors to the inequality and decompose the change in the inequality using data from Nepal Demographic and Health Surveys conducted in 2011 and 2016 for the periods 2006-2010 and 2011-2015 respectively. Concentration index was used to measure the inequality,

decomposition of the index was performed to explore major sources of the inequality and Oaxaca decomposition technique was applied to decompose the change in the inequality for the two periods. Results showed that there were substantial neonatal death inequalities between the poor and better-off which concentrated more on disadvantaged groups for both survey periods in spite of highly prioritized newborn policies. The inequality index became more than double in the later survey. Decomposition analysis, for both level and change, evidenced that mother education was the largest contributor to the inequality though there was an increasing trend of women literacy rate. Results obtained from this study would be helpful for health policy intervention in Nepal.

31. Does Controlling for Scale Heterogeneity Better Explain Respondents' Preference Segmentation in Discrete Choice Experiments? A Case Study of US Health Insurance Demand

Dr Suzana Karim, *Assistant Professor, Institute of Health Economics, University of Dhaka*
Dr Benjamin M. Craig, *University of South Florida*
Dr Stephen Poteet, *University of South Florida*

Analyses of preference evidence frequently confuse heterogeneity in the effects of attribute parameters (i.e., taste coefficients) and the scale parameter (i.e., variance). Standard latent class models often produce unreasonable classes with high variance and disordered coefficients because of confounding estimates of effect and scale heterogeneity. In this study, we estimated a scale-adjusted latent class model in which scale classes (heteroskedasticity) were identified using respondents' randomness in choice behavior on the internet panel (e.g., time to completion and time of day). Hence, the model distinctly explained the taste/preference variation among classes associated with individual socioeconomic characters, in which scales are adjusted. Using data from a discrete-choice experiment on US health insurance demand among single employees, the results demonstrated how incorporating behavioral data enhances the interpretation of heterogeneous effects. Once scale heterogeneity was controlled, we found substantial heterogeneity with 4 taste classes. Two of the taste classes were highly premium sensitive (economy class), coming mostly from the low-income group, and the class associated with better educational backgrounds preferred to have a better quality of coverage of health insurance plans. The third class was a highly quality-sensitive class, with a higher SES background and lower self-stated health condition. The last class was identified as stayers, who were not premium or quality sensitive. This case study demonstrates that one size does not fit all in the analysis of preference heterogeneity. The novel use of behavioral data in the latent class analysis is generalizable to a wide range of health preference studies.

32. Effect of Tobacco Consumption on Health-related Quality of Life and Health Care Utilization of Adult Population of Korail Slum in Dhaka, Bangladesh

Mr Mohammad Ihtesham Hassan, Student, Institute of Health Economics, University of Dhaka

The tobacco epidemic is one of the largest public health threats across the globe and its impact is disproportionally higher in the low- and middle-income countries, including Bangladesh. Tobacco consumption can lead to substantial health care costs for treating the diseases stemming from tobacco use, as well as lost human capital that results from tobacco-attributable morbidity and mortality. In Bangladesh, the burden from tobacco is alarming, particularly among the low-income and underserved urban slum population The objective of the study is to investigate the effect of tobacco consumption on healthcare utilization and health-related quality of life (HRQoL) of adult population living in Korail slum in Dhaka, Bangladesh. A cross-sectional exploratory design was adopted for conducting this study by applying a quantitative approach. Systematic sampling was conducted among 120 samples, where there were 60 smokers and 60 non-smokers. The data regarding their socio- demographic characteristic, tobacco history and HRQoL was collected using a self- administered questionnaire. QoL assessment was made with the help of a valid, translated version of WHO QOL-BREF. Results showed current smokers on an average used around 15 sticks of cigarettes per day and the mean daily cost was BDT 94.30. Mean difference of both overall QoL score and domain scores were higher among non-smokers and the results were significant in the social and environmental domains along with the overall quality of life score. The study also finds that there is a negative association between smoking status and self- reported HRQOL. The evidence generated from this study may help facilitate to strengthen the existing tobacco related interventions and developing new ones targeting the slum population.

33. Had We Chosen the Right Location for Our Livelihood? Impact Over Health: Empirical Evidence from India

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Improper garbage and wastewater disposal pose significant risks to the environment, human health, and socio-economic sustainability. Using India's representative secondary available data –NSS 76th round, in this research, we have attempted to understand the impacts of choice of garbage and wastewater disposal over health at the household level. We used multiple linear regression modelling, to get the ordinary least squares method, and drawn the potential signs of the impacts. In addition to garbage and waste water disposal choices, we have also considered plinth level, number of floors and others as our explanatory variables and records the health status of any individuals in the last 365 days as outcomes in our predictive modelling. Results suggest that the choice of the household moves towards the worst wastewater management system along with the common place of garbage disposal in proximity increases the vulnerability of getting affected by stomach and skin infections along with dengue, malaria and jaundice. Also, as the plinth level (vertical distance from the road to the main entry gate of the house) of the house increases, the vulnerability decreases. We haven't found any consistent evidence of the relationship of the levels of floors predicting health status. This study will be helpful in planning and answering the number of questions targeted to address the health issues in vulnerable societies. It also put ways to explore a number of such questions.

34. Socio-Economic Risk Factors for Antenatal Care Attendance in Bangladesh: An Empirical Analysis Utilizing the Hurdle Negative Binomial Model

Ms Faria Hossain Borsha, *Lecturer, Department of Economics, Premier University, Chittagong, Bangladesh*
Mr Sujan Rudra, *Independent Researcher, Bangladesh*

A health care system striving to reduce morbidity and mortality related to pregnancy must focus on maternal and newborn health. The health care that a woman receives during pregnancy, at the time of delivery, and soon after delivery is important for the survival and well-being of both the mother and the infant. The government of Bangladesh is committed to achieving the targets for Sustainable Development Goal (SDG) 2 and SDG 3. Bangladesh aims to achieve the goals of the 4th Health, Population and Nutrition Sector Program (4th HPNSP) of reducing the MMR to 121 deaths per 100,000 live births, reducing the under-5 mortality rate to 34 deaths per 1,000 live births, and reducing the neonatal mortality rate to 18 deaths per 1,000 live births by 2022. Antenatal care (ANC) from a medically trained provider is important to monitor the status of a pregnancy, identify complications associated with the pregnancy, and prevent adverse pregnancy outcomes. To be most effective, there should be regular ANC visits/contacts throughout the pregnancy. From BDHS survey 2018 it can be observed that the proportion of women receiving ANC (Had 4+ ANC visits) from a medically trained provider has increased noticeably over the last two decades, from 20% in 1993-94 to 82% in 2017-18.

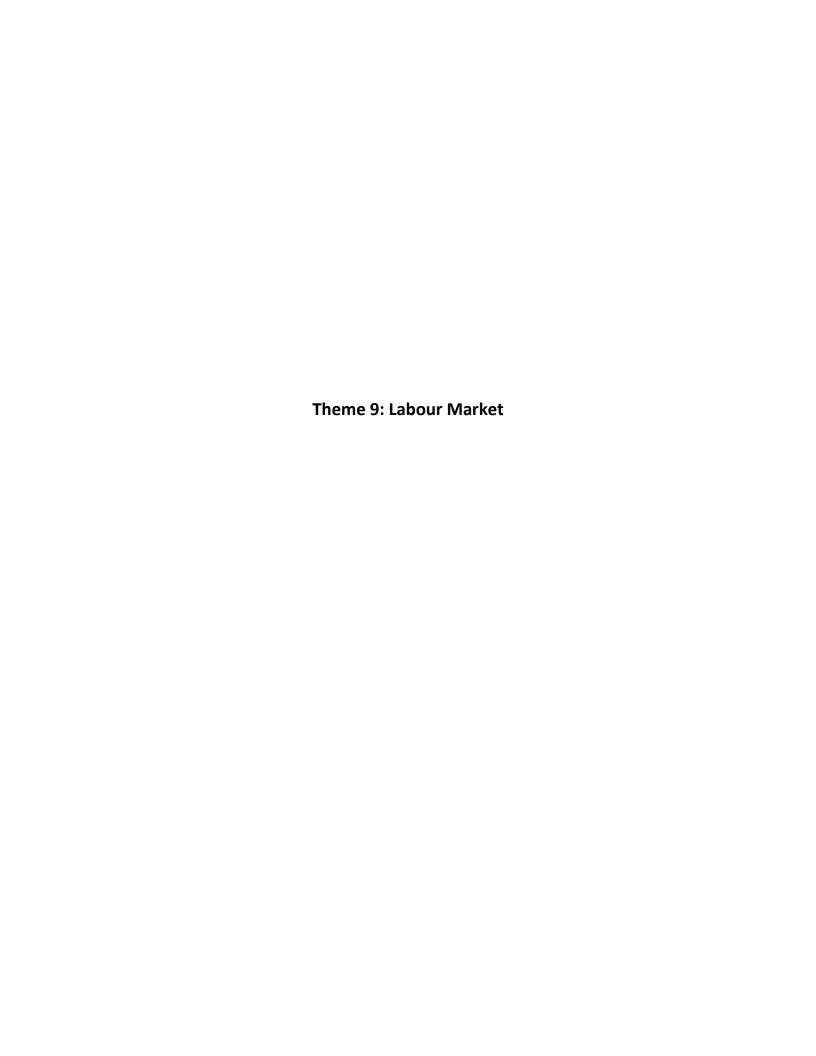## 35. Towards Distributive Equity of Health Insurance: Evidence from Nationally Representative Survey in India

Mr Milind Kumar Yadav, PhD Student, Indian Institute of Technology Roorkee, India
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Mr Akash Pal, Junior Research Fellow, IIT-Roorkee, India

Universal health coverage (UHC1) is being picked as the World Bank's priority health agenda. After all the efforts in UHC's direction, half of the world's population is still deprived of obtaining necessary healthcare services (Tracking Universal Health Coverage: 2017 Global Monitoring Report, 2017). WHO has mandated the universalization of health insurance for member countries as it is identified as the key player for UHC by 2030. More than 12 percent of world's population is experiencing catastrophic health expenditure (CHE2). Rising health disease burden and health care costs have mandated the need for health insurance. Health insurance is the need of hours for developing countries like India, where a large chunk of the population lives below the poverty line and cannot afford to bear the cost of the premium. The central and state governments came up with various health insurance policies to provide coverage for secondary and tertiary health care services. The most recent is the Ayushman Bharat-Pradhan Mantri Jan Arogya Yojana which was launched in 2018 to provide insurance coverage to vulnerable households of society. This study aims to highlight the coverage of various health insurance schemes and their distribution across various strata of society. Moreover, it also explores the spatial distribution of health insurance to trace the prospective hotspots of health insurance coverage.

36. Exploring the Determinants of Access to Health and Psychosocial Support Services among Rohingya Refugees in Bangladesh: Does Health Expenditure Matter?

Mr Md Rabiul Karim, Assistant Professor, Jagannath University
Dr Mohammad Afshar Ali, Assistant Professor, Jagannath University
Dr Md Rakibul Hoque, Professor, University of Dhaka
Dr Khorshed Alam, Professor, University of Southern Queensland, Australia
Ms Afia Mubasshira Tiasha, Research Associate, SANEM

Forced migration can lead to loss of social support and increased vulnerability to the psychological distress of humanitarian migrants. The aims of this paper are to ascertain the associations between sociodemographic factors, health services and psychosocial support received by Rohingya refugees in Bangladesh. Besides, this paper also explores the relationship between access to health services and health expenditure. Using secondary data from a 2020 Joint Multi-Sector Needs Assessment survey by UNHCR, a series of multivariate logistic regression models have been applied to examine the relationship between sociodemographic characteristics, health services and psychosocial support. The findings of this study demonstrate that gender and debt play a pivotal role in shaping access to health care and psychosocial services. This study suggests that public and private efforts should be extended to the current social support provision to enhance the support received by Rohingya refugees in Bangladesh.

Theme 9: Labour Market

37. Online Freelancing and Women's Economic Empowerment: Evidence from a Randomized Control Trial (RCT) in Bangladesh

Mr Md. Raied Arman, Senior Research Associate, BRAC Institute of Governance and Development (BIGD)
Ms Anindita Bhattacharjee, Save the Children International
Dr Narayan C. Das, BIGD
Ms Mohima Gomes, BIGD
Dr Sakib Mahmood, BIGD

Existing evidence shows that education and training impart human capital in the form of observable and unobservable skills which raise employability, productivity, and wage. However, sufficient credit is not available for disadvantaged youth to obtain the appropriate training on their own. It is thus expected that subsidized training will increase human capital and thereby, increase earnings. In recent times, the online freelancing industry has witnessed rapid growth in Bangladesh, and the government has played an active role in promoting the sector. In this context, this study aims to evaluate the effect of a fully subsidized training and post-training advising based intervention in online freelancing on underprivileged women of Bangladesh. A randomized evaluation of the intervention is expected to show us significant improvements in primary outcomes such as skills, employment, earnings, and overall economic empowerment of the participants. The evaluation is also expected to show an increase in the self-confidence of the participants along with other secondary variables.

38. Occupational Health in the Context of High Labour Market Informality in Bangladesh: Evidence from Nationwide Labour Force Survey

Ms Farhin Islam, Research Associate, SANEM
Ms Afia Mubasshira Tiasha, Research Associate, SANEM

The occupational health hazard in the present predicament has been a substantial stumbling block for a considerable time in this industrialized and digital generation. It is obvious because of its significant impacts in terms of human, social, and economic distress. Even though there have been attempts to prevent, minimize, mitigate, or eliminate these risks, these initiatives have not been sufficient to resolve the issue. In most emerging economies, informal employment accounts for more than half of all non-agricultural activities; it stimulates the economy nationwide and offers a path to alleviating inequality and poverty (Chen, 2016). According to the assessment of Chen (2016) regarding their working conditions and risk factors,

occupational safety and health (OSH) should be expanded to cover informal employees as a part of initiatives to support the informal economy. This study has explored the prevalence of occupational illness or injury, its effect on productivity and looked at the social, demographic, and economic aspects that may contribute to it in order to shed light on the state of OSH in the context of high labour market informality in Bangladesh.

39. Labour Productivity, Employment Elasticity and Structural Transformation in Uttar Pradesh

Dr Nagendra Kumar Maurya, *Assistant Professor of Applied Economics, University of Lucknow, India*
Mr Sanjay K. Upadhyay, *Research Assistant, Department of Applied Economics, University of Lucknow*

Productivity differentials are an important aspect of structural change. Rate of structural transformation depends upon the rate at which productivity (especially labour productivity) changes. The Lewis model (Lewis, 1954) prominently highlighted the role of productivity differential in achieving rapid economic growth. The Lewisian model says that the key to higher trajectory growth relies on the fact that employment and output shifts from low productivity agricultural sector to high productivity industrial sector and finally to the services sector. Uttar Pradesh has been characterised as the most populated and the most economically backward state after Bihar. However, in the recent past, the state governments are trying to make the state economy a vibrant one and aiming to make the state economy a US$ 1 Trillion economy by 2027. Given the historical growth performance of the state economy, this target seems to by unachievable by 2027. The target achievement can further be delayed if the economy fails to bring significant structural reforms to remove structural rigidities. High working age population coupled with high unemployment rate poses a serious challenge to the state. The present study aims to analyse the labour productivity and process of structural transformation in Uttar Pradesh. It also aims to analyse the trends in growth sensitiviteness of employment i.e., employment elasticity in the state of Uttar Pradesh. The study utilises data from the EPW India Time Series and employment data from quinquennial NSSO Reports on employment and unemployment and PLFS annual reports. The study applies productivity decomposition, rate of structural transformation and employment elasticity techniques for data analyses. McMillan and Rodrik (2011) decomposes labour productivity growth into 'Within' sector and 'Structural Change' across the sector. The rate of transformation has been defined as rate of change of ratio of non-agricultural employment to total employment over period multiplied by the difference between the incremental change in non-agricultural and total employment. The study finds that

employment transformation in Uttar Pradesh is significantly low, and employment is still concentrated in agricultural activities. Growth primarily is employment inelastic.

40. Labour Scarcity and Explanations for an Endogenous Natural Rate of Growth: Evidence from Developed Economies

Ms Sabarni Chowdhury, Research Associate, Indian Council for Research on International Economic Relations (ICRIER), New Delhi, India

Whether the natural rate of growth is endogenous or exogenous lies at the core of the debate between the neo-classical economists who treated it to be exogenous to the actual rate of growth and economists in the Keynesian/post-Keynesian tradition who maintained that growth is primarily demand-driven because labor force growth and productivity growth respond to both domestic and foreign demand growth. Aggregate demand affects both labor productivity and labor supply growth through various channels. Verdoorn's law (Kaldor 1966) showed that an increase in demand will raise labor productivity through the existence of static and dynamic economies of scale in the economy. It showed a strong positive relationship between the growth of output in manufacturing and the growth of labor productivity. As for the growth of the labor force, demand affects the decisions of workers to enter the workforce, more workers will join the workforce in the period of boom. On the other hand, migration patterns may also change. In situations where an internally available workforce within a capitalist sector is insufficient for the needs of the capital, the reservoir of the labor force available in the pre-capitalist sector is drawn upon. Whenever necessary capitalist sector gives signal to thepre capitalist sector and this influences the inward or outward migration and thus adjusts the growth of the laboring population available to capital to the growth of its demand. When labor force and labor productivity growth are endogenous to output growth, by definition, so is natural rate of growth. But neo-classical growth theory understands growth process in terms of exogenous input growth and growth of technical improvement. With this it is always possible to assume that economy will move to full employment of resources. But if it is proved that it is endogenous then the notion of full employment production frontier is no longer tenable.

41. Are Overly Attractive Government Jobs Distorting the Labor Market? Evidence from Bangladesh

Ms Shahida Pervin, PhD student, National Graduate Institute for Policy Studies (GRIPS), Tokyo, Japan

Overly attractive government jobs may have implications on the labor market. This paper exploits an age ceiling policy that grants job aspirants eligibility for highly desirable public employment until their 30th birthday using population censuses and labor force surveys of Bangladesh for the period 1991–2017. Findings suggest that at age 30 the likelihood of private sector employment increases by about five percentage points, mainly driven by females in the later years of the sample period, after doubling the public service salaries. The increase in employment is explained by increasing labor force participation after expiration of the government job eligibility age rather than declining unemployment. A primary survey conducted online for this study shows that candidates queue for government jobs delaying other opportunities, and result in small monetary cost, substantial time cost, and forgone opportunities. On the other hand, there is indication of brain gain from public service exams preparation.

42. Relative Occupational Aspirations and Youth Unemployment in India

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Unemployment, which is mainly concentrated among educated youth, has recently shown a significant increase in India (Periodic Labour Force Survey, 2018). There are different narratives in the literature regarding the higher incidence of unemployment among educated youth in India. Jobless growth and low employability among educated youth are considered the main reasons for high unemployment. It is also argued that educated people are unwilling to join low-quality jobs, and adequate well-paying regular salaried jobs are not available. It points to the possibility of aspirations mismatch causing a higher incidence of unemployment among educated youth. As such, an often discussed but less researched dimension of youth unemployment is the aspirations associated with jobs and voluntary unemployment caused by a mismatch between employment aspirations and opportunities in the labour market. Therefore, there is a need to empirically look at the unemployment issue among youth from the perspective of aspirations mismatch. The relevant research question to explore is whether high unemployment among youth in India is due to aspirations associated with higher education levels and the mismatch between employment aspirations and the jobs available.

43. Social Groups and Unequal Employment Opportunities in Skilled Occupations in Indian Manufacturing Sector- Endowment Gap and Discrimination

Dr Tanima Banerjee, Assistant Professor, Department of Economics and Commerce, Adamas University, West Bengal, India

This article looks into caste and ethnicity-based employment gap in skilled jobs in Indian manufacturing sector. This study has looked into caste and ethnicity-based differentia labour market outcomes with respect to entry to skilled jobs in Indian manufacturing sector. Instead of looking into the employment inequality in general in terms of labour market entry, the present study focuses on employment gap with respect to entry to skilled jobs with special focus on participation in high skilled occupations. Here, only wage employment has been taken into consideration. Thus, even if skill development among backward class workers appears to be very crucial in enhancing their earning potentials by increasing their chance to get absorbed in high skilled jobs in manufacturing industry, it cannot eliminate employment gap alone. Skill development programs should be accompanied by social awareness programs and some stringent government policies to reduce discriminatory hiring practices in manufacturing sector. But, here again, the main problem is the increasing informalization of formal employment. So, policies should not be restricted to formal sector employment only and proper care needs to be taken in this regard.

44. COVID-19, Lockdown & Reverse Migration in Indian Labour Market: Evidence from Periodic Labour Force Survey 2020-21

Dr Puneet Kumar Shrivastav, Assistant Director (Faculty), National Institute of Labour Economics Research & Development (Under NITI Aayog)

The 4th annual report of Periodic Labour Force Survey (PLFS) for 2020-21 of National Statical Office (NSO), MoSPI was released in June 2022. The PLFS gives the estimates of the employment and unemployment situation in the country. The first report, based on 2017-18 survey data, was launched in 2019, since then, it gives the estimates on key employment and unemployment indicators (viz. Worker Population Ratio, Labour Force Participation Rate, Unemployment Rate) on usual (US+SS) and Current Weekly Status (CWS) annually for both rural and urban areas and, also on quarterly basis for the urban areas only at CWS. Results of the 4th PLFS depicts the improvement in work force participation rate (WPR) and labour force participation rate (LFPR) and declining unemployment rate. Four rounds of data have been released from 2017-18 to 2020-21 based on PLFS. The general trend in the last four rounds clearly

shows consistent increase in WPR and LFPR and falling unemployment rates by usual status (PS+SS). Though increase in WPR and LFPR is reported highest in 2019-20 over 2018-19, yet rising trend in these two key indicators continues throughout, and similarly fall in unemployment rate is registered highest in 2019-20 over 2018-19. The PLFS 2020-21 aggregate data shows the improvement in the labour market indicators, despite the deeper digging of data at various indicators shows the contrary results.

45. Disaster Adjustment of Remittance Receiving Households on The Basis of Income and Food Consumption

Mr Sheikh Tausif Ahmed, Student, University of Dhaka

Each year, thousands of Bangladeshis migrate, both internally and externally, to join an already large pool of migrant workers. I wanted to find out if their hard-earned remittance provides some shelter to their households while facing different shocks and disasters. The research objective is to find the answer to this question: Are remittance-receiving households (RRH) more capable of coping with shocks and disasters than other households. Data will be collected from the HIES-2016 survey. Here, the primary variables of interest will be household income and food consumption declines while facing disasters and the remittance-receiving status of the households. Quantitative and qualitative methods will be used for this research. In this case, regression and other relevant econometric tools will be used to manipulate the data and interpret the results. The method will primarily examine whether non-RRH see their incomes and food consumption decline more or less than RRH while facing a disaster. This will help us answer the question of whether RRH are more resilient to disaster effects than non-RRH. In this regard, the probit-logit model will be used to find out the probabilities of being from a RRH and facing income decline or food consumption decline vs. coming from a non-RRH and facing income decline or food consumption decline. Remittance-receiving status of the household will be the independent variable, whereas income decline and food consumption decline will be the dependent variables.

46. Determinants in Shifts of People from Farming to Non-farming Occupations in between the Generations

Dr Badri Aryal, Lecturer, Faculty of Humanities and Social Sciences, Pokhara University, Nepal

Only, one and a half decade back, there was population pressure in agriculture and governments concern was how to relieve population pressure from it. Currently, Nepal's

agriculture is suffering from the acute shortage of labor force especially in peak planting and harvesting seasons. This paper provides evidences from a study to examine the casual variables in the occupational relationships between fathers and their sons. Using this study conducted in Gajuri Rural Municipality, a midhill of Nepal as a proxy indicator of farm leaving tendency of the sons. A semi-structured questionnaire schedule was used to collect data from ever married senior sons of the fathers. A total of 385 father son pairs were categorized in four broad groupings; agriculture, salary based jobs, business trades and wage labour works. The data were analyzed using SPSS from univariate, bivariate and multivariate levels. The binary logistic regression was the main multivariate analytical tool which used sons farming and non-farming status as the outcome measure and three sets of explanatory measures were clustered around father's characteristics, son's characteristics and household characteristics. The findings suggest that there is occupational shift from farming to more diversified non farming sectors. Among the three groups of explanatory measures used in this research, the occupation and social network of father are important determinants from the father's side. Likewise, level of education and migration experiences of the son are instrumental in shaping the occupation of son. Whereas, the number of son of a particular father and father-son age differences did not have such a stake on the occupational variations between father and the son. The finding concluded that when a father is in agriculture occupation, there is greater chance for the son to leave agriculture and join in different occupation than the father. While if a father is already having occupation different than the agriculture, son is more likely to continue father's occupation. This study hence, contribute in manpower planning in agriculture sector on one side and suggest in expanding the opportunities for employments outside agriculture on the other side.

47. Impact of Domestic Remittances on Financial Inclusion: An empirical study of South Asia

Ms Suraiya Binte Ali, Research Associate, Department of Development Studies, University of Dhaka
Mr Md. Imran Hossain Bhuiyan, Assistant Professor, Department of Development Studies, University of Dhaka

The paper discusses the domestic remittance and financial inclusion nexus that focuses on how domestic remittances in South Asia affect people's use of debit and credit cards, savings accounts, and borrowing options in terms of their role in remittance activities. Remittances are considered to increase financial inclusion for those who receive them because they are reliable sources of income (capital) and savings. We investigate the impact of domestic remittances in South Asian countries following the objectives- exploring the relationship between domestic remittance and financial inclusion, further investigating the other factors having impacts on that

domestic remittance flow and comparing the individual scenarios of South Asian countries over the two years 2014, 2017; from the survey data of World Banks' Global Financial Inclusion (Global Findex) Database. With a set of dummy dependent variables for financial inclusion, such as holding a debit card, a credit card, borrowing, and savings by using a formal account, we construct probit regression models and regress them on receiving and sending remittances while adjusting for age, gender, education level, and income level. Results indicate that domestic remittances have a favorable influence on people's access to debit, savings, and borrowing behavior through using accounts in a few chosen nations particularly for domestic remittance senders. However, among people who get remittances, the data indicate a detrimental impact of remittances on borrowings and for some countries on debit card behavior too. Moreover, the results show a very salient impact on credit card behavior for both domestic remittance recipients and senders.

48. Building resilience to shock for workers in the RMG sector: role of social policies

Ms Maheen Sultan Senior Fellow of Practice and Head of Gender and Social Transformation Cluster, BRAC Institute of Governance and Development (BIGD)
Ms Iffat Jahan Antara, Senior Research Associate, BIGD

The RMG sector in Bangladesh is the largest exporting sector and the largest formal employer of women. Countries such as Bangladesh which are part of the global value chain find it in their interest to provide incentives to export-oriented business firms to attract foreign investment, increase export earnings and limit workers' ability to organize (Phillips 2017). Although the business owners and their associations were able to influence the state to safeguard the business during COVID-19, the labour side was not able to do so. The industry recovered in terms of export earnings but the workers bore the brunt of the COVID-19 fallout on the industry in terms of job loss and wage cuts as there is no social protection scheme for them. The need for social protection policies and programmes is evident in light of the current price hike of daily necessities and inflation which made it even more difficult for the workers to survive. It is important to build resilience to global economic shocks in the RMG sector by putting in place essential social protection policies and programme. The paper will review what was done by Government, employers and trade unions during the COVID-19 crisis to protect the lives and livelihoods of workers and explore the weaknesses revealed to build the case for specific social protection policies essential for building resilience.

49. Demographic Transition and Economic Growth Dimensions: A Comparative Study of India and Bangladesh

Ms Ishika Jaiswal, Doctoral Scholar, Department of Applied Economics, University of Lucknow
Dr Bimal Jaiswal, Professor, Department of Applied Economics, University of Lucknow, Lucknow

India and Bangladesh are the two exceptional economies in South Asian region. Both the nations have number of similarities and both want to achieve remarkable economic growth in the shortest span of time possible. To attain this objective, both the economies are endeavouring altogether in certain sectors and sub-sectors. However, there are some avenues where India and Bangladesh are competing with each other to win the race of achieving higher growth. As far as current scenario is concerned, it can be vividly noticed that India is rapidly growing and leading the region. India has a massive industrial sector, a technologically advanced agricultural sector, and the outstandingly performing services sector which is the biggest contributor in country's GDP over and above all. But the growth trajectory of Bangladesh is utterly noticeable as country's unrivalled growth rate can't be misconstrued. In a shorter span of time, Bangladesh has marked its presence on the globe and clobbered India in certain respects. The broader objective of the study is to estimate and analyse the relationship between demographic dividend and economic growth in India and Bangladesh as both the countries are emerging economies and marking their presence in one or the other respect. For instance, India is featured with world's largest labor force while Bangladesh is becoming a manufacturing hub at global level.

50. Who is More Likely to be Underutilized in the Labour Market of Bangladesh: An Empirical Investigation

Mr Md. Tuhin Ahmed, Lecturer, Department of Economics, Sheikh Hasina University, Netrakona, Bangladesh
Mr Omar Raad Chowdhury, Research Associate, South Asian Network on Economic Modeling (SANEM)

Labour underutilization refers to mismatches between labour supply and demand, which translate into an unmet need for employment among the population. In Bangladesh, a total of 6.6 million population aged 15 years or older, which is around 6% of the country's working-age population, are underutilized (LFS, 2017). This study has conducted an empirical investigation into the demographic and socio-economic factors which form the structural basis of labour underutilization in Bangladesh. This is a cross-sectional study based on the Quarterly Labour Force Survey (QLFS) 2016-17 of the Bangladesh Bureau of Statistics-- the latest nationally representative survey. The demographic and socio-economic characteristics of labour underutilization are measured using descriptive statistics. Bivariate (e.g. t-test, chi2 statistics) and multivariate analyses are used to measure the association of demographic and socio-economic factors with labour underutilization. Logistic regression (probit analysis) is conducted to
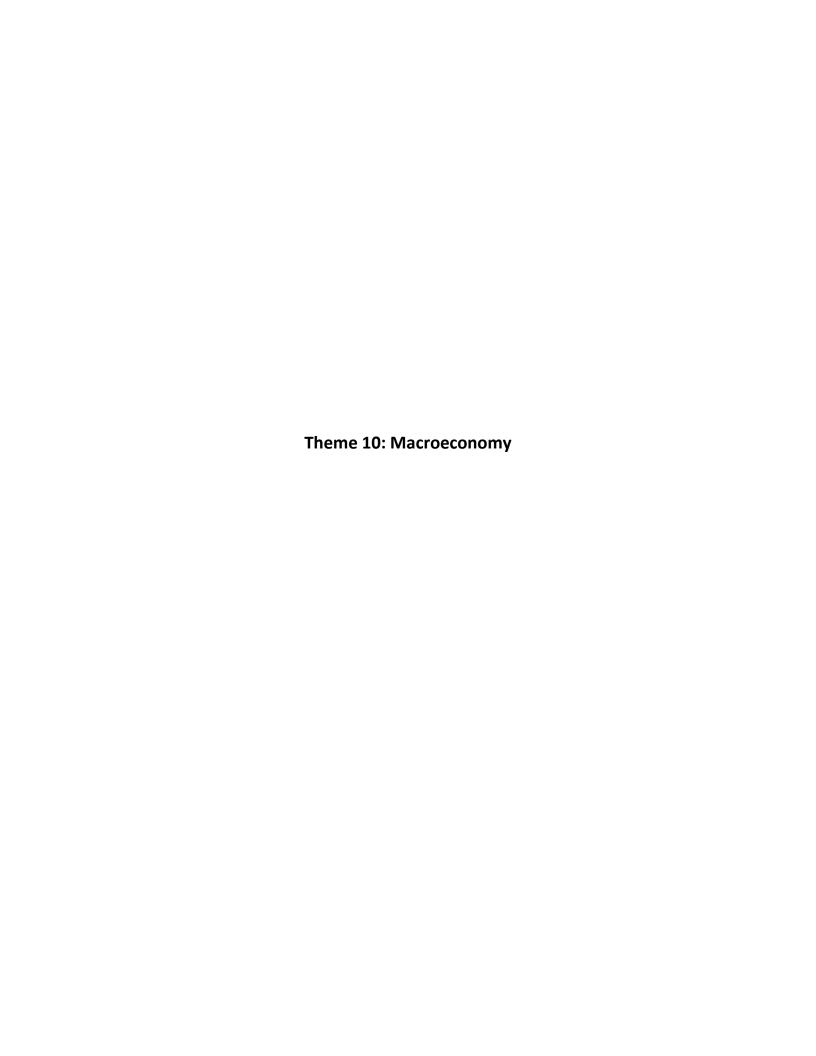
determine the marginal The study finds that females, individuals aged between 15-29 and individuals with secondary or tertiary education, individuals living in urban areas, and living in the western part of the country are respectively more likely to be underutilized than males, individuals aged 30 or older and individuals with no education, individuals living in the rural areas, living in the eastern part of the country. In contrast, we find that individuals, whose main source of family income comes from manufacturing, services or remittances, are less likely to be underutilized than those whose main source of income is agriculture. The study primarily concludes that gender, age, education, area of residence, and main source of family income are significant in determining an individual's likelihood to remain underutilized as part of the labour market. As higher levels of educational attainment are associated with more underutilization, the study emphasises the need for educational reform. We also find that geographical distinctions are crucial factors behind labour underutilization. Several studies found that the poverty incidence of a geographic location increases with levels of labour underutilization. Thus this study suggests—implying that policy strategies which aim to address poverty-related issues while prioritizing the utilization of the labour force will have to take into account the spatial dynamics of the demography.

51. The Digital Drive: Structural Transformation of employment in India through Digitalization

Mr Abhishek Singh, Research Scholar, Department of Applied Economics, University of Lucknow
Dr Karuna Shanker Kanaujiya, Asstistant Professor, Department of Applied Economics, University of Lucknow
Mr Sarvesh, Research Scholar, Department of Applied Economics, University of Lucknow

One of the most complicated, interwoven, and understudied processes of the global economic change is digitalization. The active use of digital technology for information processing, storage, and transmission aids in the digitization of commercial operations, the growth of worldwide e-commerce, the establishment of e-government structures, and the development of a digitalized global labour market. (Izmailova, 2018) emphasized the necessity for high-quality training of skilled employees, as requested by the labour market and the real sector of the economy, as well as the relevance of competences that would be maintained over time. Starting to promote online job platforms, which is transforming local and worldwide labour markets. Based on these facts, (Chinorack et al., 2019) contributed by analyzing, defining, and characterizing the influence of digital technologies on the labour market and their prospective impact in the field of transportation labour market. (Aly, 2020) aimed to investigate the relationship between digital transformation as one facet of the fourth revolution and AI trends on one hand, and economic development, labour productivity, and employment on the other (FGLS).

Theme 10: Macroeconomy

52. Deficit Financing with National Saving Certificate and Its Macroeconomic Consequences on Bangladesh's Economy

Mr Mohammad Mahabub Alam, PhD Candidate, Crawford School of Public Policy, Australian National University

National savings certificate (NSC), a nonbank, nonmarketable saving instrument with a high- interest rate, has been used extensively in financing budget deficit in Bangladesh by the government in the recent past. However, the original intent of this savings scheme was to promote savings among a target group of small savers (women, senior citizens, physically handicapped citizens) in the absence of a well-developed financial market and to provide some safety net benefits with a higher interest rate than the market rate. This paper analyzes the macroeconomic impacts of extensive usages of NSC on the lending rate, gross domestic savings, government investment, private investment, and gross domestic product (GDP) with a seven-variable SVAR framework using annual data from 1983 to 2021 and quarterly data from 2008Q3 to 2021Q4. The impulse response functions and the variance decomposition analysis show that the NSC interest rate has a strong influence on the lending rate as it increases significantly with an NSC interest rate shock. A shock in the NSC interest rate increases NSC flow that boosts government investment in the short run but depresses private investment and GDP growth in the long term as the lending rate rises. A shock in the NSC interest rate or NSC demand does not increase gross domestic savings significantly meaning that NSC flow does not bring much informal savings to the formal economy. Insignificant response of gross domestic savings also indicates that NSC shocks are not driven by the intended target group of people rather it is driven by the rich who purchases NSCs motivated by the higher interest rate differential with the market interest rate in the absence of a strict exclusion mechanism. As NSC flow does not create new savings, private investment does not respond positively although government investment responds positively in the short run and consequently does not increase GDP.

53. Fiscal Policy Response to COVID-19 Pandemic in Pakistan

Professor Saira Ahmed, Partnership for Economic Policy (PEP) Network
Dr Vaqar Ahmed, Joint Executive Director, Sustainable Development Policy Institute (SDPI), Pakistan

This study aims to explain the macroeconomic and welfare impacts of changes in indirect taxes brought about in response to COVID-19. We study whether the tax relief provided for in the federal budget for fiscal year 2020-21 was effective in providing relief to private enterprises

and the trade sector. We also study whether production subsidies granted during the first wave of COVID-19 were effectively able to support firms in the agricultural sector. This assessment allows us to draw lessons that may be useful for designing tax benefit policies amid future waves of the pandemic or during other emergency times.

As the pandemic continues and post-pandemic recovery is delayed, the sustainability of tax relief or subsidies is becoming uncertain – this is an additional area of interest that we focus on in this research.

We worked closely with relevant policy makers at the Ministry of Planning & Development, the Ministry of Commerce, and the Federal Board of Revenue in Pakistan when pursuing this last area of interest and designing our simulations.

We used a PEP Single Country Recursive Dynamic Computable General Equilibrium Model (CGE) model to simulate the impact of changes in tax codes and production subsidies and explain five major results. First, of all the fiscal policy changes simulated, those targeting the manufacturing sector resulted in the greatest gains in real GDP and reductions in consumer prices (and therefore increases in consumer welfare). Second, the tax relief offered to firms in the services sector lead to the greatest investment gains. Third, while all simulations depicting changes in fiscal policy led to increased exports, this was accompanied by an even greater increase in import demand. Fourth, we see that consumption inequalities may have increased as a result of the pandemic and fiscal policy responses. Finally, our qualitative assessment reveals how COVID-19 led to the widening of gender gaps. We offer policy recommendations that are based on a structured public-private dialogue series (in which the results of this study were also presented) and could help mitigate pandemic-related challenges for both households and firms.

54. Exchange Rate Pass-Through and Data Frequency: Firm-Level Evidence from Bangladesh

Mr Deluair Hossen, Post-Doctoral Research Associate, University of Tennessee, USA

The vast literature on exchange rate fluctuations estimates the exchange rate pass-through (ERPT). Most ERPT studies consider annually aggregated data for developed or large developing countries for estimating ERPT. These estimates vary widely depending on the type of country, data coverage, and frequency. However, the ERPT estimation using firm-level high-frequency export data of a small developing country is rare. In this paper, I estimate the pricing to market and the exchange rate pass-through at a monthly, quarterly, and annual level of data

frequency to deal with aggregation bias. Furthermore, I investigate how delivery time-based factors such as frequent shipments and faster transport affect a firm's pricing-to-market behavior. Using transaction-level export data of Bangladesh from 2005 to 2013 and the Poisson Pseudo Maximum Likelihood (PPML) estimation method, I find very small pricing to the markets to the exchange rates in the exporter's price. As pass-through shows how the exporters respond to macro shocks, for Bangladesh, this low export price response to the exchange rate changes indicates that currency devaluation might not have a significant effect on the exporter. The minimal price response and high pass-through contrast with the literature on incomplete pass-through at the annual level. By considering the characteristics of the firms, products, and destinations, I investigate the heterogeneity of the pass-through. The findings remain consistent with several robustness checks.

55. Organization Capital and Optimal Monetary Policy Inertia

Dr Bidyut Talukdar, Associate Professor, Department of Economics, Saint Mary's University, Canada

We study optimal monetary policy in a model with sticky prices, money, and learning-by-doing (LBD) in production. Optimal monetary policy is characterized in terms of simple welfare-maximizing interest rate rules. The Ramsey-optimal policy is used as a point of comparison. In our setup, monopolistically competitive firms learn from their production experience and accumulate an intangible, knowledge-based capital which raises their future productivity. We find that the presence of LBD renders monetary policy inertia optimal. In particular, as LBD becomes increasingly relevant, the optimal interest rate rule becomes increasingly more inertial. Moreover, with stronger LBD effects the optimal interest-rate rule features weaker responses to inflation. The reason for this rising monetary policy inertia, and weaker responses to inflation is a desire by policymaker to slow down the speed of adjustment of organization capital.

56. Do Interest Rate Controls Work? Evidence from Bangladesh

Mr Sajid Bin Hasnat, Research Assistant, Department of Economics and Social Science, BRAC University
Mr Golam Mortaza, Islamic Development Bank

This paper reviews the impact of interest rate controls on major banking sector indicators in Bangladesh. From the attempt of policymakers, it was evident that the basic intent of the interest rate controls was to appease the business communities so that it helps their cost of

borrowing and increases their access to credit, without much consideration of benefits of large number of depositors. The paper investigates whether the interest rate ceiling has had the effect of what was intended, particularly those related to borrowers' perspectives, while considering the similar effect on other major banking sector indicators such as non- performing loans (NPLs) and credit expansion in priority sectors including micro, small, and medium enterprises. This paper will provide special focus on perspectives of depositors, especially impact on the real returns of their savings and how the interest rate controls made implications for that keeping in mind the narratives that policymakers and business communities have been trying to establish so far.

57. A Test of the Balassa-Samuelson Hypothesis on the Real Exchange Rate for Newly Industrialized Countries Using the Generalized Method of Moments

Ms Asma Ul Hosna Mim, Department of Economics, Comilla University
Mr Nobinkhor Kundu, Associate Professor, Department of Economics, Comilla University

In this paper, we test the Balassa-Samuelson hypothesis to determine the role of relative productivity in determining the real exchange rates of newly industrialized countries (NICs). We first construct and estimate panel data models to determine the empirical significance of this procedure. We then conduct two empirical applications on a Penn-World table data set from 2000–2019 to examine the validity of penalized regression. First, we estimate annual Penn-World Table pooled, fixed, random, and least squares dummy variable (LSDV) regression effects on data from all NICs. Second, we assess the performance of penalized regression using the Generalized Method of Moments (GMM) across the NICs on the same data set. The relative productivity, government debt burden, investment, foreign direct investment, and trade openness of NICs determine the real exchange rate. The model is empirically verified using standard panel data methodologies, and the results indicate that all explanatory factors significantly influence the real exchange rate with NICs. We find that the coefficient of relative productivity has highly significant negative effects on the real exchange rate in NICs. The model's robustness test shows that the specification is valid. The static panel data analysis investigates the impacts of productivity in heterogeneous economies and identifies the substantial effects of all explanatory variables on the real exchange rate in NICs. In addition, the GMM estimator is also utilized for dynamic balanced panel data analysis. J-statistics' findings of diagnostic tests (Sargan test) do not contradict the model specifications, indicating that the model's over identification restrictions are valid.
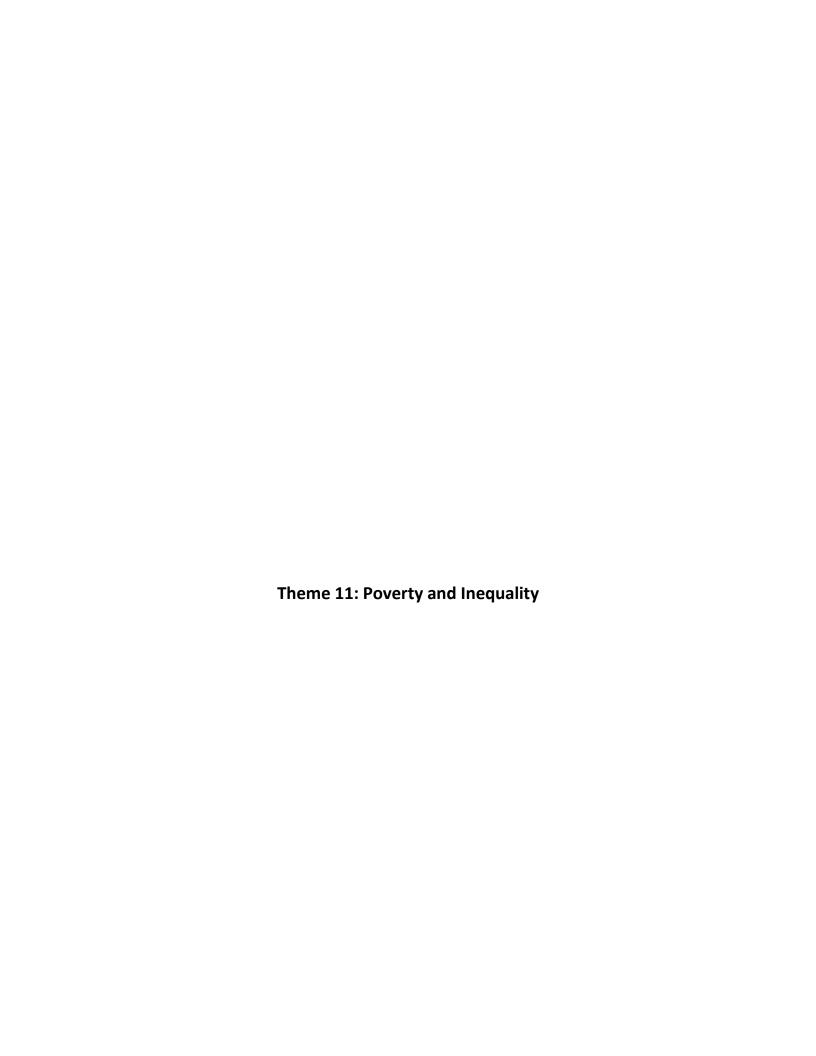
58. Impact of FDI on the Agriculture sector in Bangladesh: An Econometric Analysis

Ms Zakia Sultana, *Department of Economics, Mawlana Bhashani Science and Technology University*
Mr Yousuf Hossain, *Department of Economics, Mawlana Bhashani Science and Technology University*
Mr Md Mahbub Alam, *Department of Business Administration, Daffodil International University*
Mr Md Nazmus Sadekin, *Department of Economics, Mawlana Bhashani Science and Technology University*

This paper aims to inspect the relationship between Foreign Direct Invest (FDI) and the agriculture sector in Bangladesh over the period 1972 to 2021. This study is based on secondary data and previous literature and data are collected from World Development Indicator. The variable that has been used as the independent variable is Foreign Direct Investment, Employment in Agriculture Sector, Inflation, Gross Fixed Capital Formation, Gross Domestic Product, and Trade, and the dependent variable is the agriculture sector (Forestry, Fisheries). By using secondary data, the paper uses the Auto Regressive Distributed Lag Model (ARDL) because the Dickey fuller test gives us a mixed stationary result. The f-Bound test is used to examine the relationship among the variables under study. These findings show that foreign direct investment has a considerable negative influence on agriculture sector output over the long term and has no relationship in the short run. The study recommends a short- and medium-term plan. Required to handle the government of Bangladesh's expanded and urgent funding of the agricultural sector after occurring natural calamities as soon as possible. Government should take steps to increase soil fertility.

Theme 11: Poverty and Inequality

59. Estimating COVID-19 Economic Vulnerability from Outer Space - A District Level Analysis for Bangladesh

Mr Syed Rafsan Ali, Student, Department of Economics, East West University
Mr Zaeem-Al Ehsan, Research Associate, The World Bank
Dr Syed Abul Basher, Professor, East West University

The onslaught of COVID-19 wreaked havoc in Bangladesh, where the country's real GDP growth dropped dramatically from 8.2% to 5.5% during FY 2020. However, with GDP data being unavailable at the district-level, it is not possible to understand the district-wise ramifications of COVID-19 in Bangladesh. New technologies offer a chance to improve economic measurement, and it has been discovered that South Asia's GDP levels and nightlight intensity have a strong correlation (Beyer et al., 2018). Satellites can provide a useful indicator of economic activity by monitoring changes in luminosity. In this paper we used monthly nightlight data of 64 districts from VIIRS (Visible Infrared Imaging Radiometer Suite) images to measure the fluctuation of economic activities during the time of Covid 19. The main objective of this paper was to track the economic fluctuations of 64 districts and to identify those districts that were more susceptible to the COVID-19 shock. First, we followed (Ghosh et al.,2020) to see if there was a correlation between nightlight and other factors such as COVID infections and mortality rates. At the outset we divided the sample into two pairs, one from the lockdown period (April 1,2020 –June 1,2020) and the other from before the lockdown (January 1,2020 –March 24,2020). Then we used a nonparametric test of hypothesis to check the mean differences between that two pairs. Also, we analyzed the variation in nighttime light intensity by calculating the coefficient of variation for both within and between regions. The nightly Day/Night Band (DNB) profile at the Hazrat Shahjalal International Airport in Dhaka shows how the lighting changes from the day the lockdown begins (March 2020). Additionally, we examined Google's mobility statistics to determine how the frequency of visits and average length of stay changed during the lockdown. Google's mobility report mapped movement patterns over time in various categories of locations, including retail and recreation, workplaces, and residences. When looking at Bangladesh, the months of June and August of 2020 showed a drastic decline in the aforementioned retail and recreation as well as workplace mobility trend. In accordance with Beyer et al. 2020, we ranked the 64 districts by calculating the changes in their nightlight intensity. A classical linear model is applied in order to investigate the influences and the level of significance posed by the other variables.

60. Employing the Multidimensional Poverty Lens to Deliver Livelihood Support to the Urban Poor: Lessons from a UNDP Bangladesh Intervention

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Impacts of crises on inequality and marginalization are more complex and layered in today's interconnected world than they were in the past, often manifesting through exacerbation of various pre-existing vulnerabilities of disadvantaged groups. Recovery strategies and efforts to build resilience thus require more multidimensional lenses for addressing secondary impacts of shocks, particularly on the most vulnerable. This brief explores whether multidimensional approaches to addressing issues related to poverty and vulnerability are more helpful in crisis contexts. Towards that end, the brief analyzes primary data on beneficiaries of UNDP Bangladesh's Livelihoods Improvement of Urban Poor Communities (LIUPC) project. The findings are expected to contribute to the conception, design and scaling-up of future initiatives and contextualized solutions to strengthen the resilience of urban poor communities in similar settings.

61. Understanding Shocks, Stressors and Resilience Dynamics in Rural Bangladesh

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According to the United States Agency for International Development (USAID), resilience is defined as "the ability of people, households, communities, and systems to mitigate, adapt to, and recover from shocks and stresses in a manner that reduces chronic vulnerability and facilitates inclusive growth." The negative shocks and stresses are occurrences and patterns that impact well-being consequences and resilience abilities of the future. By this definition, household resilience is the household's capability to alleviate, adjust to, and recuperate from negative shocks and vulnerabilities.

We used cross-sectional data from the 2018-19 Bangladesh Integrated Household Survey (BIHS). The BIHS is a nationally representative rural survey of Bangladesh which is representative

at the divisional level. Respondents to the resilience and food security module (n=5,604 households) of the BIHS Survey were asked whether their households experienced 16 shocks or stressors during the 12 months preceding the survey. For any shock experienced, the respondents were asked to rate the severity of the shock or stressor on the household's income and food consumption using the same four-point Likert scale for each of the shocks. This information was used to calculate the shock exposure index (SEI). SEI is a weighted average of the incidence of each shock, weighted by perceived severity of the shock of each household. Our findings show that at the national level, severe illness has been the biggest stressor for rural Bangladesh during the last 12 months prior to survey data collection in 2018-19, which was even before the COVID-19 pandemic. Too much rain has been identified as the second major shock at the national rural level, which can be associated with the adverse effects of climate change faced by rural communities in Bangladesh.

62. Does Poverty Hinder Cognitive Skills Development? An Empirical Study from Sylhet

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Understanding the relationship between cognitive function and economic behavior is particularly relevant to studying economic development and poverty since poverty may be both a cause and a consequence of changes in cognitive function. The current study aims to identify how cognitive function behaves against poverty using cross-sectional data collected through the multi-stage clustered sampling from the farmers of Sunamganj district under the Sylhet division. This study used three tests to measure the respondents' cognitive ability: Raven's matrix, Stroop test, and Thomas International GIA test. These tests evaluate the respondent's logical thinking, problem-solving capacity, control over cognitive function, and productivity. We categorized people with less than the mean income as poor and the rest as comparatively rich. Out of 67, the average cognitive ability score of the poor group is 26.57, and 38.27 for the rich group. The findings of the multivariable regression indicate that income status significantly impacts cognitive ability. The poorer people are prone to score less on the cognitive ability tests; the people older than 50 have less cognitive ability than the youngers. The number of family members also plays a significant role in cognitive ability. The larger the family size the poor the cognitive performance of the respondents are. Conversely, people with more educational attainment are likelier to have

significantly better cognitive performance than illiterate people. However, this study did not find any link between loan status and cognitive performance. The findings of this study will help policymakers formulate proper policy to enhance the cognitive ability that might have been influential in poverty reduction as well. In turn, it will foster Bangladesh's remarkable economic development in recent days.

63. Regional Disparities in Child Poverty: A Multiple Overlapping Deprivation Analysis of Bangladesh

Ms Farzin Mumtahena, *Student, Department of Economics, University of Dhaka*

Investment in the wellbeing of children in their early days provides essential grounds for further socioeconomic development and human capital growth. Even children living in non-poor households may be out of school or suffer from malnutrition, diseases, and abuse. The paper is based on the idea that investigation into child deprivations should be exclusive from adults' and more holistic in nature. Using individual child data from the MICS 2019- Bangladesh and a multiple overlapping approach, the paper measures the incidence and depth of child poverty for two age groups and maps regional differences. Up to six dimensions are considered from the following: housing, sanitation, water, education, information, nutrition, health, and protection.

Findings suggest that younger children are multidimensionally poorer than the older group but have lower regional inequalities. The most acute areas of deprivation are sanitation, nutrition, health, education, and protection. The adjusted multidimensional child deprivation headcount ratio among children affected by at least two deprivations is 16.3% for under five children and 5.8% for children aged 5-17. Bandarban, Rangamati, Khagrachari, Bhola, Sunamganj and Satkhira are among the districts with the highest deprivations. A logistic regression model is used to estimate the impact of regional variation on child poverty status. Under five children in Mymensingh, Sylhet, Chittagong, and Barisal have a significantly higher probability of being poor than those from the Dhaka division. 5–17-year-old children are less likely to be deprived if they are from Barisal, Khulna, Rajshahi, and Rangpur divisions but more likely to be poor if they are from Sylhet. A child's gender, parental education, household size, and the age and gender of household head are also strong determinants of child poverty. This paper proposes region-specific and dimension-focused policies in Bangladesh to target vulnerable children from each age group.

64. Assessing the Consumption Inequality and Patterns of the Middle Class in Bangladesh

Mr Hasibul Hasan, *Student, Department of Economics, University of Dhaka*

In the past decade, as poverty declined rapidly in Bangladesh, more people entered the lower middle-income groups, thus expanding the middle class of the country. However, the existing literature on the identification of the Bangladeshi middle class is very scarce and the little available presents outdated data. Therefore, there is much scope to work on identifying the middle class in Bangladesh and how its functioning capacities and available choices vary compared to other social classes. The size of the middle class identified following Aslany (2019) is expected to be around 30%, and L´opez-Calva and Ortiz-Juarez (2014) to be more than 50%. The consumption patterns of the households are expected to be in line with Engel's law, however, different social classes may face different price elasticities of income for different types of goods and services.

65. A Comprehensive Econometric Analysis of Food Security in Bangladesh and Policy Recommendation

Mr Abdul Zabbar Sakil, *Research Associate, SANEM*

In this study, we analyzed household dietary diversity and calorie intake and found that though there is a negligible difference in calorie consumption between urban and rural areas, rural households have lower dietary diversity compared to urban households. For the whole population, a larger portion of calorie consumption comes from food grains and oil and fats which are the cheapest food groups. We tried to see food poverty and inequality from calorie consumption. We found that 52% of households are still below the required calorie consumption and Barisal and Chittagong divisions have the highest percentage of food poor and inequality is also the highest. But it is Dhaka division that contributes the most to the total population of food poor in the country. We also tried to explore food security from food consumption scores because of methodological reasons and found a significant difference in score between urban and rural areas by every characteristic. Therefore, we applied the Oaxaca decomposition method to decompose the difference and found that half of the difference is due to the endowment effect and a quarter of the difference is due to the coefficient effect. Lastly, to find out the determinant factors of food security, we used econometric models. We found that education, per capita food expenditure, monthly income, remittance, livestock ownership, dependent members in a household, daily wage earner head, employment area and sector are the key

determinant factors of food security. Therefore, this paper can help policymakers to emphasize on that part of the food security that is of main concern. This paper will also help to understand the dynamics of food poverty in different divisions and target households by the determinant factors to improve food security.

66. Examining the Impact of Water Poverty Index on Human Capital Index: A Case Study of India

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The innovative and distinguishing feature of the Sustainable Development Goals is that they were created through an inclusive and comprehensive process, and thus the goals and targets are intertwined (U N 2018). Among these synergies and tradeoffs, the association of water with other sustainable development goals is of particular interest. Given the inevitability of water for human survival and development, as well as the proper functioning of the ecosystem, it is without a doubt that it serves as the planet's central nervous system (UNDP 2021). Improving access to water, combined with proper wastewater management, reduces the risk of malnutrition and waterborne diseases. It also has a positive impact on education and the economy, which reduces poverty and inequalities.

It is owing to the centrality and criticality of water that it has been recognized as a human right (IUCN, 2004). Despite this, as per the recent reports of WHO (2019) 2.2 billion people globally do not have access to safe drinking water.

Over the years, water scarcity has emerged as a common phenomenon in many countries (Adapa et al., 2016), therefore it's important to comprehend how rising water stress may affect future advancements i n human development and economic progress. Considering this, in the present paper an attempt has been made to examining the effect of water scarcity on developmental parameters. For measuring water scarcity water poverty index (WPI), which is a multidisciplinary and holistic toll have been employed. And for measuring human development we have used Human Capital Index (HCI). By taking survival rate, health and school as component of human capital accumulation this study tried to find out the impact of WPI on HCI.

Theme 12: Political Economy

67. Russia-Ukraine Conflict and the Global Governance of Climate Change: A Critical Review of Commentaries and Arguments

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This study has critically reviewed commentaries and arguments to understand how the Russia-Ukraine conflict has shaped the current forms and prospects of climate change actions at the global level. For this purpose, the authors adopted a discourse analysis to examine emerging commentaries, arguments, and evidence critically. Scholarly and grey articles (n=50) have been collected using two major search engines (Scopus and Google). The analysis of the discourses conveys that global and regional institutions of climatic actions reflect global geopolitical tensions caused by the conflict. Due to the rising energy price and shortage of supply, numerous countries have opted for fossil-fuel-based short-term solutions. The energy and economic crises have forced countries to act slowly on their climatic commitments. Many argue that these crises allow the West to reintegrate its commitment towards achieving a decarbonized world. However, this line of arguments largely relies on pro-western views and perspectives. The analysis of the emerging evidence and findings further informs that global targets encoded in Goal 13 of the 2015 Global Development Agenda are unlikely to be achieved. The review suggests that the global governance of climate change requires a new political and economic settlement among the blocs. However, in the context of the ongoing Russia-Ukraine war, creating an environment for such a settlement is impossible unless peacetime is achieved. The authors are still analyzing the data to generate additional insights and observations. This paper offers valuable discernment for thinkers and leaders of strategic-level climate action.

68. Health Costs of a "Healthy Democracy": The Impact of Peaceful Political Protests on Healthcare Utilization

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Peaceful protests are one of the most common and effective forms of political action worldwide. But they may have negative spillovers on health-seeking behavior. Using an instrumental variable approach that leverage variations in national sporting events and combining data on politically disruptive events from the Armed Conflict Location & Event Data

(ACLED) project with information on healthcare utilization from the Bangladesh Demographic and Health Surveys (DHS), we show that peaceful protests reduce healthcare utilization among mothers with young children. Prenatal and postnatal care, vaccination rates, the likelihood of visiting a hospital facility if a child is unwell, and hospital deliveries all decrease in response to protests, while home deliveries increase. The effect is stronger for more elastic demands, like facility visits for minor illnesses and timely vaccinations. Security concerns and traffic congestion, which increases the time and costs of accessing health facilities, appear to be two potential mechanisms. The findings are not a criticism of peaceful protests, which we consider both an essential tenet and a by-product of a strong democracy, but instead seek to draw attention to an often-ignored cost associated with it.

69. Converging Districts and Diverging States: Resolving the Puzzle of Regional Growth Dynamics in India

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In this paper, we tried to provide solution to this puzzle. Using nightlight luminosity data as a proxy for economic growth and Philips-Sul (2007) methodology to test different possibilities like convergence, divergence or club-convergence, we show that the use of a club-convergence framework to analyse sub-national convergence in India gives consistent results at both the state and district levels. The advantage of using Philips-Sul method is that this method is more robust in testing different possibilities of regional growth dynamics like convergence, divergence, or club-convergence compared to regression-based approaches. The paper contributed to the existing literature in two ways. Firstly, in line with recent contributions to the literature, we extend the regional convergence analysis in India at the district-level, which are smaller administrative regions within states. Secondly, we use Night Lights data for the first time for club convergence analysis in India. The results of the study clearly suggest that the null hypothesis of convergence is strongly rejected for both Indian states and Indian districts. The "puzzle" of divergence at the state level and convergence at the district level, therefore, disappears when we accommodate short-run heterogeneity in the transition paths of regional economies using Philips-Sul method. More specifically, we find evidence of two state-level convergence clubs and a divergent group of four states among the Indian states. In the case of the district-level analysis, we find evidence of six convergence clubs The obvious question that comes up on the back of our findings is: what is the relationship between district-level clubs and state-level clubs? More

specifically, does club formation at the state level drive club formation in the districts? We estimate an Ordered Probit Regression model in order to examine this question with membership of district-clubs as the dependent variable and membership of the corresponding state-clubs as the independent variable. We observe a very strong and statistically significant effect. The odds of a district belonging to a richer district-club are far stronger when they belong to a state that is a part of the richer state-club.

70. Election and COVID-19 Vaccination: The Case of India

Dr Prasenjit Sarkhel, *Associate Professor, Department of Economics, University of Kalyani*
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Vaccinations for COVID-19 infections commenced in India during January,2021 with a target to inoculate roughly 300 million people by July, 2021. This was coterminous with the beginning of the second wave. The fatality from the first wave had already claimed more than 12 million lives in India alone. Safeguarding the exposed population, especially those with comorbidities, against the infection assumed top priority for health experts and accordingly 30 million health and frontline workers together with 270 million elderly people were targeted in the first phase (February 28, 2021). Initial evidence suggests that vaccination rates significantly varied across states and in most cases, it was delayed resulting in shortfalls of the vaccine target. For instance, Pandey et.al (2021) noted that North eastern states were able to vaccinate 20% of the eligible group while for Uttar Pradesh and Bihar the vaccination rate was 40% of the target group. Studies have relegated the shortfall to inadequacy of vaccine infrastructure (Pandey et.al., 2021) and vaccine hesitancy (Jain et.al., 2021), particularly in the rural areas and hinterlands. Together with supply constraint, this imply that vaccine backlogs continued to accumulate. In addition to the supply side bottlenecks, promulgation of election might lower vaccination rate if it lowers risk perception for infection. Election rallies involving huge mass congregation could contribute towards increasing the discount rate for potential infection-hence the demand for vaccine might be reduced. On the other hand, going by the theory of political cycles government would attempt to scale up the vaccination rates. Political competition can put pressure on the incumbent government to increase the provision of social good, especially in areas with high inequality. To what extent these opposite forces counterbalance each other in determining the vaccination rate? We seek to answer this question by estimating the impact of assembly election on COVID-19 vaccination and explore the plausible mechanisms for the vaccine outcomes.

Theme 13: Trade and Industry

71. Measuring Vulnerabilities of Trade Blocs During the Covid-19 And Endemic Period in The World

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This paper estimates trade vulnerability of trade blocs in the global trade system based on the time series panel data sets from 2010 to 2020, using trade vulnerability index (TVI) method. As a result, trade blocs in terms of size and share in the global trade system with different stages of economic integration were asymmetric. The COVID-19 was prevalent in these blocs. Similarly, regionalism has promoted the export performance of trade blocs to some extent. In the export performance, EU as big trade blocs has export growth instability more than MERCOSUR, SADC, SAFTA, ASEAN, and NAFTA. Additionally, the estimate of goods trade vulnerability shows that SAFTA (1.47), in the pre-COVID19 is the highest vulnerable of all whereas MERCOSUR (0.82) is the lowest one. In the endemic period, SAFTA (1.70) is the highest vulnerable of all whereas MERCOSUR (0.82) is the lowest one. In the following trade blocs, SAFTA, SADC, EU and ASEAN, the COVID19 pandemics have increased trade vulnerability but NAFTA has not similar effect. Similarly, in the pre-COVID19, MERCOSUR (1.80) is the highest vulnerable of all whereas NAFTA (0.72) is the lowest one. In the endemic period, SADC (1.81) is the highest vulnerable of all whereas NAFTA (0.70) is the lowest one. In the following trade blocs, SADC (1.81), MERCOSUR (1.59) ASEAN (1.01), and EU (0.93), the COVID19 pandemics have increased trade vulnerability but the remaining trade blocs, NAFTA and SAFTA have not similar effect but positive benefits to reduce vulnerability. Thus, regionalism in trade has not resolved fully trade vulnerability of trade blocs. Therefore, regionalism in trade should be reciprocal RTAs to reduce structural, functional and procedural asymmetric among member countries so that the regionalism could reduce trade vulnerability for improving the share of LDCs and DCs on global income and trade for higher economic growth rate and welfare. This paper is expected to contribute regionalism approach and principles in South Asia as well as other trade blocs of the world. This paper is further expected to contribute the role of member countries of South Asia to adopt macro-economic shocks for trade stability and growth for reducing trade vulnerability and regionalism for trade promotion and development in the future.

72. India's Possible Alignment with the RCEP: A Partial and General Equilibrium Impact on Economy Wide Variables and Carbon Emissions

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The present study seeks to understand the ex-ante (general equilibrium) and ex-post (gravity analysis) economy wide impacts of the RCEP agreement including assessment of trade diversion and trade creation for India and also the impact of reduction of tariff and non-tariff barriers, including deeper integration policies like increased physical and human capital flows on carbon emissions using GTAP-E on all members of the RCEP nations and India. We use structural gravity model to explain volume of trade among 15 RCEP nations and India and importantly predict India's trade with the east Asian region after the formation and signing of the RCEP trade deal in 2019. The present paper further uses the general equilibrium model the GTAP – E (Environment and Energy) to analyze the gains and losses of India and the RCEP nations, among others, under two experimental simulation scenarios: the first in which India bilaterally liberalizes on one to one basis with the 15-RCEP nations and the second in which India becomes part of the comprehensive RCEP treaty. We further attempt analyzing carbon emissions in the two experimental scenarios along with welfare and GDP gains/losses, among others. The results reveal that if we adopt comprehensive policies such as trade and capital liberalization, make concerted efforts to improve productivity of skilled labour, impose carbon taxation to address climate change and also adopt industrial policies to improve the productivity of the transport and communication sector, there would be relatively higher gains in terms of welfare (equivalent variation) and value of GDP growth for India in the first scenario as compared to the second simulations when India possibly becomes a part of RCEP in future. The second simulation results project gains for India in terms of reduction in carbon emissions and positive trade balance with the rest of the world.

73. Impact of Pandemic on Firm Performance in India across Size and Sectors

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The world faced an unprecedented health crisis – The COVID19 Pandemic in 2020. In order to curb its spread, government across world adopted containment measures such as lockdown, quarantine and social distancing. It caused contraction of the global economy by -3.3 per cent in 2020 by disrupting economic activities through supply and demand shocks. Indian economy couldn't remain unaffected by it and contracted by -7.5 per cent in 2020-21. Though the pandemic affected all firms irrespective of their size, small firms were badly hit by it and some are still struggling to revive. Given the lack of financial resources, small firms are most vulnerable

to such hazards in comparison to large firms. Further, the impact of pandemic may vary across sectors even in each size categories of firms. In order to draw further insight and appropriate policy lessons, the present endeavour aims to understand impact of pandemic on firm performance across size categories and sectors.

The study is primarily based on Centre for Monitoring Indian Economy (CMIE) database of around 50000 Indian companies for the financial year 2019-20 to 2021-22. Due to the less reporting in the database for the period 2021-22, only 6061 firms have been covered in the study. The impact of pandemic on firm performance has been measured in terms of change in sales across firm categories – micro, small, medium and large firms; and sectors - NIC 2 digits' level. Further, firms have been categorised into three categories based on their contact intensiveness. In order to assess factors determining revival of firm, a regression analysis has been conducted by using age, size and asset of firms as explanatory variables. The study shows that not all firms were negatively affected by the pandemic. Impact of pandemic significantly varies across size categories of firms and sectors. Smaller firms were more affected by the pandemic than the larger firms. Similarly, percentage change in sales of high contact intensive firms were higher than the low and moderate contact intensive firms. Further, age, size and asset of firms have significant impact on their revival.

74. Vaccine Manufacturing Industry of India: Structure, Size and Competitiveness

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Vaccine manufacturing in India has historically been centered around producing a wide variety of conventional vaccines that made the country self-sufficient as well as a net exporter of basic vaccines. However, overtime, other safe and efficacious vaccines that follow technologically more advanced manufacturing processes became available in the market against some high burdened diseases, their increased uptake made the country import dependent in both UIP and non-UIP categories. In the second half of 2000s when manufacturing capacity of public sector was being dismantled, India became a big market for imported vaccines since then and export affected adversely. Despite such repercussions, India continued to enjoy comparative advantage (RCA>1) due to high acceptability of Indian vaccines in developing countries market. High R&D intensity and active State support are critical for making the country self-reliant and self-sufficient in vaccine development and manufacturing and addressing future health challenges like the Coronavirus.

75. Do Sri Lankan Firms Oppose Trade Liberalisation? Evidence from a Field Experiment Study

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There exists consensus among economists that trade liberalisation leads to long-run gains, even if it also involves significant short-run costs associated with adjustments in the transition from a closed, protected economy, to an open and liberalised one (Choudhri et al., 2006). Yet, resistance to trade liberalisation has proven quite fierce, especially in low and middle-income, developing countries (Stiglitz, 2013, Egger and Fischer, 2018). Failure to understand the sources of, and attitudes shaping, this resistance makes it harder to tackle it. It may also have played a part in the stagnation of trade liberalisation efforts, many of which have even reverted in recent decades. This is certainly true of the Sri Lankan economy and trade policy experience, where dirigiste policies have advanced over the last decade with a notable rise in para-tariff protection afforded to domestic industries. Therefore, the study set out to examine this in the Sri Lankan context, using results from an online survey experiment that explores firms' perceptions on trade liberalisation and their preferences for government action. The findings not only shed light on recent attitudes among the private sector towards trade liberalisation, but also provide an informative reference point for policy makers to craft smarter trade reform approaches as the new government has announced an interest to pursue trade reforms once more.

76. Are Export Standards Always 'Optimum'? A Game Theoretic Analysis

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This paper examines the welfare consequences of export standards imposed by importing countries (which may fall under Non-Tariff Measures Barriers/Non-tariff measures i.e. NTMs/NTBs) on an exporting country by using a theoretical framework. Standard imposed by foreign country can be related to "true" negative consumption or production externality. The examples of standards that reduce consumption externalities can be that aerosols and refrigeration equipment should not contain CFCs in order to protect ozone layer, maximum residual limits for agricultural products, standards on biodegradable detergents and rules relating to recycling of containers. Standards which reduce production externalities can be related to "emission standard" or "labor standard". Even though these standards are imposed to combat negative externality, they can also be "protectionist" (i.e. above the "optimum" limit) by nature.

The estimates collected by World Integrated Trade Solutions (WITs) show there is large incidence of presence of Non-Tariff Barriers in present day international trade e.g. imports of Canada have a coverage ratio of 88.91% and a frequency ratio of 95.54% for non-tariff measures. Exports of Canada have a coverage ratio of 26.22% and a frequency ratio of 8.05% for non-tariff measures. Importations of the European Union have a coverage ratio of 94.31% and a frequency ratio of 93.88% for non-tariff measures. Exports of European Union have a coverage ratio of 5.79% and a frequency ratio of 10.13% for non-tariff measures. (WITS database). The "Asia-Pacific Trade and Investment Report 2019" (APTIR) finds that NTMs are now affecting around 58 per cent of trade in Asia and the Pacific. There is also empirical evidence where the optimum standard set by the importing country are above the scientifically approved norms. In case of "production externality" if production of the commodity is creating negative externality the importing country may not impose "optimum standards" even though it is welfare improving for exporting countries.

77. Factors That Impact Agricultural and Manufacturing Trade of India with ASEAN Trading Partners

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The Indo-ASEAN relationship that began to flourish after the announcement of the Look East Policy (LEP) of 1991 has completed a remarkable period of 30 years. Over the course of this period, India played a significant role in ASEAN as its sectoral partner and a dialogue partner; they signed FTA in goods in 2009, the LEP got upgraded as Act East Policy in 2014, and FTAs in services and investment were signed in 2015. India's bilateral trade with ASEAN increased from around two billion US$ in 1991 to 106 billion US$ in 2021. With such a massive increase in bilateral trade between India and ASEAN countries, the study's primary purpose is to analyze the determinants of the Indian export flow of agriculture and manufacturing sectors to 10 ASEAN member countries. For this purpose, separate augmented gravity models will be employed for 25 years, from 1997 to 2021. In addition, the study will also analyze untapped trade potential between India and the ASEAN trading partners. The arable land, value added in the agriculture sector, and agricultural specialization of the trading partners will be incorporated in the agricultural sector's augmented gravity model. The variables like employment, trade openness, and contribution to GDP concerning the manufacturing sector will be considered in its gravity model. The transaction cost variable will be used as a proxy for distance. The sectoral

classification of trade flows has been done based on the HS-96 product code. The OLS, Fixed effects, Random effects, and FGLS methods will be employed for the estimation. The results are expected to confirm the consistency of the gravity model for sectoral trade flows from India to ASEAN countries.

78. Digitalization and Exports: A Case of Indian Manufacturing MSMEs

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Ms Kriti Sharma, *IIFT, New Delhi*
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Digitalization has been gaining prominence in the recent times. This has also been true with respect to various business aspects of a firm. However, the digitalization levels of Indian MSMEs remain low when compared to its international counterparts, with the manufacturing sector being much behind its services counterpart. This could particularly affect the export competitiveness of Indian MSMEs. Thus, it becomes imperative to understand the effect of digitalization on MSME exports. To the best of our knowledge, there is presently no literature exploring the effect of digitalization on the export performance of Indian MSMEs. In this paper, we assess the digitalization of Indian manufacturing Micro, Small and Medium Enterprises (MSMEs) by using the Centre for Monitoring Indian Economy's Prowess database consisting of around 800 manufacturing MSMEs for the period 1990-2019. Our primary objective is to answer two questions: First, what is the role of digitalization in promoting the export intensity of Indian manufacturing MSME firms? Second, how does digitalization help in facilitating export market entry for these firms? We have used the System Generalized Method of Moments estimator in assessing the impact of digitalization in boosting the export intensity of a manufacturing MSME. On the other hand, a Dynamic Probit Regression Model has been used to determine the factors influencing the decision to enter the export market by an MSME. Our analysis has controlled for a wide range of covariates such as those related to trade, labour productivity, size and age of the firm, etc. The robustness of the results has been verified by employing alternative definitions of the digital-intensity index. The summary of the findings based on the robust econometric techniques such as System Generalized Method of Moments and Dynamic Probit Regression Model and employing three alternative definitions of digitalization reveal that a higher level of digitalization of an Indian manufacturing MSME increases its exports intensity. Additionally, higher sunk costs, increased labour productivity, technical know-how, and servicification are also associated with the greater export intensity of the firm. Also, a digitalized manufacturing MSME firm is more likely to enter the export market, vis-à-vis a non-digitalized one. On the policy front, the Indian government has introduced numerous schemes to improve digital penetration

however, Indian MSMEs have still not caught up with the pace of digitalization in competing countries possibly due to hurdles such as lack of awareness and the presence of procedural complexities for availing existent schemes. The findings from this study advocate an urgent need for manufacturing MSMEs to go for digitalization to sustain and strengthen their contribution to the Indian economy.