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SUSTAINABILITY IN MIDDLE-INCOME COUNTRIES

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1. JUSTIFICATION FOR CHOOSING THE TOPIC OF THE DISSERTATION

Economic growth describes an increase or improvement in the inflation adjusted market value of economic goods and services that a society produces and consumes, whereas economic development refer to the improvement in the quality of living standard of inhabitant of any country over a certain period of time¹. Furthermore it is true to argue that, development strongly associated with economic growth, allowing the differences in the level of development to be conclusively explained by different in growth rates. Nonetheless, economic growth interacts with other dimension of different nature shaping the level of development of a country². Middle income countries (MIC) are a diverse group by size, natural resources, demography and income level. Furthermore, MIC represent s about one third of the global GDP and appeared to be the major engine of global growth. Furthermore, the global landscape and economic structure of the world is extremely volatile therefore middle income country's economy more vulnerable to external shocks. Nevertheless, slow down of the global trade during any crisis, there is evidence that growth spill-overs from the trade partners significantly determinant of a middle income country's growth. Likewise, it has been stated that recession at a major trading partner during crisis situation has bigger repercussion³. Numerous upper-middle income countries and lower-middle income countries hold stagnant economic growth from long time without any improvement in their economic and social structure. Furthermore, unskilled labour force in middle-income countries usually engaged with agriculture sector however; once the new MNC are formed due to cross border technology transfer unskilled labour smoothly adopted and learn the new technological skills which become an active ingredient of economic growth. Manufacturing sector also plays significant role in empowering growth in middle-income countries. However, it has been observed that service sector by pass manufacturing and leapfrog from agriculture directly to service sector⁴. These notable sectors are information and communication technology and tourism. Likewise, one of the key factor which contribute positively in economic growth process of middle-income countries is contribution of total gross capital formation that's has risen dramatically

¹R.Brinkman, "Economic growth versus economic development: Toward a conceptual clarification." *Journal of Economic Issues* 29.4, 1995,p. 1171-1188.

²L.Heras Recuero and G.P.Roberto, "Economic growth, institutional quality and financial development in middle-income countries.",2019.

³A.J Makin, and Allan Layton. "The global fiscal response to COVID-19: Risks and repercussions." *Economic Analysis and Policy* 69,2021,p.340-349.

⁴ M. Noland,P. Donghyun, and B.E Gemma, "Developing the service sector as engine of growth for Asia: an overview." *Asian Development Bank Economics Working Paper Series* 320,2012

recently. The key issue which directly impact on the economic growth of majority of middle-income countries are fiscal budget deficits which are due to less tax revenue and more government spending. Therefore; middle-income countries usually depend on external borrowing for their social spending such as medical care, health and government employees pension spending which also lower the economic growth rate.

Middle-income countries rely heavily on international trade⁵. Their economic well-being is closely tied to trade agreements, tariffs, and international economic conditions. Trade relations with other countries can significantly affect their economic growth and stability⁶. On the other hand, MICs seek FDI from other countries to fuel economic growth and development⁷. The strength of their international relationships can influence the amount and stability of FDI they receive. Furthermore, with the help of FDI flow under the shadow of international relations among the countries, International relationships can facilitate the transfer of technology, knowledge, and best practices, which can boost the capacity and development of Middle-income countries^{8 9}. Likewise, the ability of MICs to access international markets and resources, including energy and raw materials, can be influenced by their relationships with other nations¹⁰. International relationships of middle-income countries among each other also cause financial stability for their financial system¹¹. International creditors and lenders can play a role in the financial stability of MICs, and the terms of loans are influenced by international relationships¹². Middle-income countries are often affected by global issues like climate change, health pandemics, and migration. Collaboration with other countries is vital in addressing these

⁵ J-F, Arvis,[et al.], "Connecting to compete 2018: trade logistics in the global economy." 2018.

⁶ X.Yao [et al.]. Free trade agreements and environment for sustainable development: a gravity model analysis. *Sustainability*, 11-3, 2019, p. 597.

⁷ X.Wang, W.Yanhua, and X.Chunxin. "The impact of natural resource abundance on green economic growth in the belt and road countries: The role of institutional quality." *Environmental Impact Assessment Review* 98, 2023,p 106977.

⁸A. Silverstein,[et al.], "Global community of practice: A means for capacity and community strengthening for health professionals in low-and middle-income countries." *Journal of Global Health* 12,2022.

⁹F.H, Wandera,[et al.]"Learning from global suppliers: the diffusion of small wind in low-and middle-income countries." *International Journal of Technological Learning, Innovation and Development* 13.1,2021,p 24-49.

¹⁰ S.Jaffee,[et al.], *The safe food imperative: Accelerating progress in low-and middle-income countries*. World Bank Publications, 2018.

¹¹K.Ebire, Kolawole,[et al.], "Effect of capital flows on financial stability in middle-income countries." *Journal of Financial Regulation and Compliance* 29.5,2021,p.491-513.

¹² N.Samargandi, Nahla,J. Fidrmuc, and S. Ghosh. "Is the relationship between financial development and economic growth monotonic? Evidence from a sample of middle-income countries." *World development* 68,2015,p.66-81.

challenges¹³. Likewise, middle-income countries often receive development aid from wealthier nations and international organizations. The nature and amount of aid can be influenced by diplomatic and geopolitical relationships¹⁴.

Numerous upper-middle-income countries have experienced stagnant economic growth for a long time and cannot graduate as high-income countries generally that state is known as the middle-income trap. The concept of the middle-income trap (MIT) is relatively new and spurred some controversy in the literature. There are two groups of definitions of MIT exit in literature, theoretical and quantitative. Quantitative definition later divided into sub categories absolute and relative definitions of MIT¹⁵. The absolute definitions are based on absolute middle-income thresholds thus numeric threshold in terms of dollar income^{16 17 18}. On the other hand, under the shadow relative approach the MIT definition revolve around the catch up process (failed) relatively or comparing to other develop countries^{19 20}. However, in this research work, will follow the definition provided by Glawe & Wagner²¹. According to them a middle-income trap is defined as a group of middle-income countries that have been in a stable, steady-state in terms of their economic growth for a long time, difficulty breaking out of it, and trapped due to self-perpetuating or self-reinforcing mechanisms²². Self-perpetuating or self-reinforcing mechanism refer to the conditions in which an economy suffer from persistent underdevelopment due to vicious factor such as poverty , inequalities , human development and other demographical factors. These factors are created by circular causation due to the presence of some external economies or strategic complementarities²³. The reason for

¹³ S.Sellers, Samuel, K.L. Ebi, and J.Hess. "Climate change, human health, and social stability: addressing interlinkages." *Environmental health perspectives* 127.04,2019,p.045002.

¹⁴ K.Dupuy, J. Ron, and A.Prakash. "Hands off my regime! Governments' restrictions on foreign aid to non-governmental organizations in poor and middle-income countries." *World Development* 84,2016,p. 299-311.

¹⁵ I.S.Gill, and H.Kharas. "The middle-income trap turns ten." *World Bank Policy Research Working Paper* 7403,2015.

¹⁶ J.Felipe,A. Abdon, and U. Kumar. "Tracking the middle-income trap: What is it, who is in it, and why?." *Levy Economics Institute, Working Paper* 715 ,2012.

¹⁷ S.Aiyar,[et al.], *Growth slowdowns and the middle-income trap*. International Monetary Fund, 2013.

¹⁸ B. Eichengreen,D. Park, and K.Shin. *Growth slowdowns redux: New evidence on the middle-income trap*. No. w18673. National Bureau of Economic Research, 2013.

¹⁹ P-R.Agénor, O.Canuto, and M.Jelenic. "Avoiding middle-income growth traps." 2012.

²⁰ W. Woo, "The major types of middle-income trap that threaten China." *WT Woo, M. Lu, JD Sachs, and Z. Chen, A New Economic Growth Engine for China. Escaping the Middle-income Trap by Not Doing More of the Same*,2012,p 3-39.

²¹ L.Glawe, and H.Wagner. *The People's Republic of China in the middle-income trap?*. No. 749. ADBI working paper, 2017.

²² Ibid, 21.

²³ K.Matsuyama, "Poverty traps." *Economic Growth*. London: Palgrave Macmillan UK, 2008.p.215-221.

following Glawe & Wagner²⁴ definition is due to the fact that they highlighted that the cause of middle-income trap, which are due to vicious social and economic factor. This factor such as economic growth itself, poverty, environment, health and other social factors represent sustainable development goals and further easy to impute in statistical models for statistical analysis and then further easy to interpret the conclusion for policy recommendation.

International relationships between countries can be crucial in enhancing progress towards achieving the United Nations Sustainable Development Goals (SDGs). International relationships among countries promote regional trade, and in the long run, it positively influences economic prosperity²⁵. Similarly, bilateral and multilateral agreements can encourage countries to align their policies and strategies with the SDGs. This helps ensure national policies are consistent with the global sustainability agenda^{26 27}. Collaborative relationships between countries facilitate cooperation in areas such as trade, development aid²⁸, and knowledge sharing²⁹. Similarly, International relationships can lead to resource sharing, including financial aid and technology transfer, to help countries with limited resources work toward SDGs, especially in poverty reduction, health, and education. Open and fair international trade can stimulate economic growth and create opportunities for countries to access new markets³⁰. International relationships promote the exchange of best practices, research, and innovation, which can support SDGs. Furthermore, collaborative international relationships strengthen the influence of countries in global governance structures, enabling them to advocate for and shape global policies and initiatives that promote sustainable development³¹. International cooperation and relationship also cause the flow of labour force and human capital from one country to another country which causes the flow of remittance and improves the socio-economic

²⁴ Ibid 21

²⁵ Ji, Xiuping, et al. "The influences of international trade on sustainable economic growth: An economic policy perspective." *Sustainability* 14.5 (2022): 2781.

²⁶ W.Yin, "Integrating Sustainable Development Goals into the Belt and Road Initiative: would it be a new model for green and sustainable investment?." *Sustainability* 11.24,2019,p.,6991.

²⁷ J.Lewis, "Green industrial policy after Paris: renewable energy policy measures and climate goals." *Global Environmental Politics* 21.4,2021,p.42-63.

²⁸ E.M.Ekanayake, and D.Chatrma. "The effect of foreign aid on economic growth in developing countries." *Journal of International Business and cultural studies* 3,2010.p.1.

²⁹ I.Reychav, Iris, and J.Weisberg. "Good for workers, good for companies: How knowledge sharing benefits individual employees." *Knowledge and process Management* 16.4,2009.p.186-197.

³⁰ S.Cavusgil, P.N. Ghauri, and A.A. Akcal. *Doing business in emerging markets*. Sage, 2012.

³¹ R.O'brien, *Contesting global governance: Multilateral economic institutions and global social movements*. Vol. 71. Cambridge University Press, 2000.

condition of the recipient country³². International agreements on climate change, biodiversity, and pollution control are vital for addressing environmental sustainability, which is a critical component of the SDGs³³. Therefore, it is proper to endorse that international relationships between countries can enhance the implementation of the SDGs by promoting cooperation, resource sharing, policy alignment, and global governance.

However, sustainability does not represent only the environment; it is an interrelated phenomenon representing economic activities and social outcomes. In terms of economic sustainability, stagnant economic growth in most upper-middle-income countries appears to be a significant issue due to upper-middle-income countries being unable to graduate to high-income countries and caught into middle-income trap. Stagnant economic growth induces a steady unemployment rate. In middle-income countries, the average unemployment rate was recorded as 5.3% from 2000 to 2010 and then 5.2% from 2011 to 2019; furthermore, 156 million youth in middle-income countries are working poor.³⁴

Stagnant economic growth and unemployment directly impact the social pillar of sustainable development. In middle-income countries, unemployment increases poverty incidence. Middle-income countries are home to 75% of the world's population and 62% of the world's poor. On the other hand, middle-income countries represent one-third of the global GDP. A high concentration of poor people directly impacts their well-being of life. In terms of infant mortality rate at birth (per 1000 births), it has been well improved in middle-income countries recently and recorded as 25.9; however, in 2000, it was 52.8. In 2018-19 in middle-income countries, 90% of children enrolled in primary schools; however, their learning ability is extremely poor. Furthermore, many children left school after secondary schooling and joined the employment sector. High-level poverty, high-pollution growing rate, and uneven health and education sector cause the increase the income inequalities in middle-income countries.

Lastly, the high-pollution growth, urban expansion, and unsustainable use of natural resources impact the environment and cause climate change. Climate change is further affecting the productivity of the agriculture sector. In the case of middle-income countries agriculture sector provides 30% of employment. Therefore, contraction in the

³²I.Chowdhury. "Impacts of remittance on the socioeconomic condition of Bangladesh: an analysis." *Innovative Issues and Approaches in Social Sciences* 7.3,2014,p.23-43.

³³A. Arneeth,[et al.], "Post-2020 biodiversity targets need to embrace climate change." *Proceedings of the National Academy of Sciences* 117.49, 2020.p30882-30891.

³⁴Youth- the 2030 Agenda for Sustainable Development

agriculture sector due to climate change negatively impacts the employment sector. Due to the unsustainable consumption and production pattern, middle-income countries are responsible for 63% of greenhouse gases, which further induces health and economic issues.

2. THE RESEARCH PROBLEM, GOALS AND RESEARCH HYPOTHESIS

The majority of middle-income countries (referring to upper and lower-middle-income countries) face issues related stagnant growth, numerous upper-middle-income countries is caught in the middle-income trap. The issues in middle-income countries are derived from a lack of sustained economic policies. The absence of effective and long term economic policies along with ineffective utilization of resources further create economic instability in middle-income countries. The major issues related to the economic dimension are lack of financial resources³⁵, financial instability^{36 37}, the high employment rate³⁸, lack of technology³⁹, and stagnant economic growth.

The lack of sustained economic growth usually increases social issues and regional disparities⁴⁰. Social issues are related to lack of health and education facilities⁴¹, high inequalities⁴², and poverty. However, in a recent period high level of economic growth has been recorded in middle-income countries, but on the other hand, poverty incidence and

³⁵ V.Tangcharoensathien,[et al.], "The political economy of UHC reform in Thailand: lessons for low-and middle-income countries." *Health Systems & Reform* 5.3,2019, p.195-208.

³⁶ N.Samargandi, J.Fidrmuc, and S.Ghosh. "Is the relationship between financial development and economic growth monotonic? Evidence from a sample of middle-income countries." *World development* 68,2015,p.66-81.

³⁷ A.Hunjra,[et al.], "Role of financial development for sustainable economic development in low middle income countries." *Finance Research Letters* 47,2022,p.102793.

³⁸ Y.Cho, and D.Newhouse. "How did the great recession affect different types of workers? Evidence from 17 middle-income countries." *World Development* 41,2013,p.31-50.

³⁹ G.Quaglio,[et al.], "Information and communications technologies in low and middle-income countries: Survey results on economic development and health." *Health Policy and Technology* 5.4.2016,p.318-329.

⁴⁰ T.Soubotina, *Beyond economic growth: An introduction to sustainable development*. World Bank Publications, 2004.

⁴¹ F.Rabbani,[et al.], "Schools of public health in low and middle-income countries: an imperative investment for improving the health of populations?." *BMC public health* 16.1,2016,p.1-12.

⁴² Vo, Duc Hong, et al. "What factors affect income inequality and economic growth in middle-income countries?." *Journal of Risk and Financial Management* 12.1 (2019): 40.

especially inequalities have been widely observed⁴³. Well-being can be achieved by equal access of every individual in the society to education and health services⁴⁴.

Nevertheless, environmental issues related to the high emission of greenhouse gases are interrelated to the social and economic problems stated before. Progressive economic growth harms most middle-income countries' environment and natural resources, which further induces poverty and income inequalities⁴⁵.

The primary goal of the thesis is to identify and quantify factors that affect leading indicators of sustainability in countries classified as being caught by the middle-income trap. Identifying these factors helps illustrate the graduation mechanism from the middle-income group to the high-income group. Numerous studies investigated the impact of international or international finance on economic growth and development^{46 47}. On the other hand, external finances positively stimulate social pillars and attributes such as education, health, income inequalities, and poverty. Foreign direct investment and remittances positively increase health outcomes⁴⁸ and, likewise, foreign aid as well^{49 50}. Similarly, on the other hand, trade also increases health outcomes⁵¹. However, in terms of education, international finance also positively impacts educational outcomes; for foreign direct investment⁵²; for remittance⁵³, and for foreign aid⁵⁴. Furthermore, other studies also

⁴³ F.Clementi, M. Fabiani, and V. Molini. "The devil is in the detail: growth, inequality and poverty reduction in Africa in the last two decades." *Journal of African Economies* 28.4,2019,p.408-434.

⁴⁴ T.Vavik, and M.M. Keitsch. "Exploring relationships between universal design and social sustainable development: some methodological aspects to the debate on the sciences of sustainability." *Sustainable development* 18.5,2010,p.295-305.

⁴⁵ M.Destek, and A.Sinha. "Renewable, non-renewable energy consumption, economic growth, trade openness and ecological footprint: Evidence from organisation for economic Co-operation and development countries." *Journal of cleaner production* 242,2020,p.118537.

⁴⁶ G.Bird, and Y.Choi. "The effects of remittances, foreign direct investment, and foreign aid on economic growth: An empirical analysis." *Review of Development Economics* 24.1,2020,p.1-30.

⁴⁷ A.Zardoub, and F. Sboui. "Impact of foreign direct investment, remittances and official development assistance on economic growth: panel data approach." *PSU Research Review* 7.2,2023,p 73-89.

⁴⁸ P.Kumar,[et al.], "The nexus between air pollution, green infrastructure and human health." *Environment international* 133,2019,p.105181.

⁴⁹ A.Kotsadam, [et al.], "Development aid and infant mortality. Micro-level evidence from Nigeria." *World Development* 105,2018,p. 59-69.

⁵⁰ M.Haq, M. Luqman, and A. Cheema. "DOES FOREIGN ASSISTANCE COMPLEMENT SAVINGS IN THE GROWTH PROCESS: EMPIRICAL EVIDENCE FROM SELECTED ASIAN COUNTRIES." *Global & Local Economic Review* 25.2: 37.

⁵¹ A.Owen, and S. Wu. "Is trade good for your health?." *Review of International Economics* 15.4,2007,p. 660-682.

⁵² M.Mughal, and .Vechiu. "Does FDI promote higher education? Evidence from developing countries." *10th Nordic Conference in Development Economics (NCDE)*. 2009.

⁵³ M.Zhunio [et al.], "The influence of remittances on education and health outcomes: a cross country study." *Applied Economics* 44.35,2012,p.4605-4616.

⁵⁴ A.Riddell, and M. Niño-Zarazúa. "The effectiveness of foreign aid to education: What can be learned?." *International Journal of Educational Development* 48,2016,p.23-36.

suggest that external financial inflows and trade openness reduce poverty and income inequalities^{55 56}. However, numerous studies also highlighted that lack of proper governance negatively impacts social sustainability and causes poverty via corruption⁵⁷.

Nevertheless the above mentioned issues seem to be unresolved in majority of middle income countries and more specifically in middle-income trap countries. Therefore; in this research work I will attempt to provide partial solution of issues related with sustainability in middle-income countries. This thesis work also road map related with the policy recommendation for middle income countries and middle income trap countries for achieving the sustainable development in long-run.

This Ph.D. thesis aims to comprehensively examine and analyze the multifaceted relationships between international finance and international trade and their impact on economic growth, poverty alleviation, health outcomes, income inequality, and environmental sustainability. This research seeks a nuanced understanding of how sustainability can be achieved via international finance and trade in middle-income countries. The detailed aim of this research work listed below,

- I. To empirically analyze the impact of foreign direct investment, remittance, and official development aid on economic growth, social sustainability, and the environment
- II. To empirically analyze economic growth driven by international trade and finance can provide additional resources for investment in healthcare, education, and social safety nets, improving social well-being.
- III. To empirical analyze the role of international finance, trade and financial development in the graduation mechanism of middle-income countries thus leaving the middle-income trap.
- IV. Furthermore, empirically analyze the impact of governance indicators on sustainable development goals and their effectiveness under the shadow of international financial and trade.

⁵⁵ Y.Subramaniam,[et al.], "The impact of microfinance on poverty and income inequality in developing countries." *Asian-Pacific Economic Literature* 35.1, 2021,p 36-48.

⁵⁶ S.Kousar, Shazia,[et al.], "Impact of economic and green growth on poverty, income inequalities, and environmental degradation: a case of South Asian economies." *Environmental Science and Pollution Research* 30.12,2023,p.35200-35213.

⁵⁷ J.Negin, and R. Cumming. "HIV infection in older adults in sub-Saharan Africa: extrapolating prevalence from existing data." *Bulletin of the World Health Organization* 88.11,2010,p.847-853.

Based on our research problem discussed in previous section following below hypothesis will be tested in my thesis work,

- A. Ho_a: Leaving the middle income trap; the necessary condition requires economic, social and environmental sustainability.
- B. Ho_b: The necessary condition for achieving sustainable social and environmental sustainability requires economic growth.
- C. Ho_c: The necessary condition under the shadow of **political, economic and institutional governance**; for achieving sustainable economic growth requires external international finance, international trade and financial development.

3. THE COURSE OF RESEARCH AND THE STRUCTURE OF THE DISSERTATION

This PhD thesis comprises six chapters that collectively address the intricate relationship between economic growth and sustainability within middle-income countries and their sub-groups, all in the context of international finance and trade.

- I. **Chapter No. 1** lays the foundation by presenting the research background, articulating research questions, and explaining their significance.
- II. **Chapter No.2** delves into economic growth theories and drivers, establishing a research framework.
- III. **Chapter No.3** conducts empirical investigations into the factors influencing growth in middle-income countries and their sub-groups, detailing the empirical analysis method and discussing findings.
- IV. **Chapter No.4** focuses on the empirical analysis of the connection between economic and environmental sustainability.
- V. **Chapter No.5** explores how economic growth impacts social sustainability goals, encompassing poverty, health, education, and income inequality.
- VI. **Chapter No.6** concludes the thesis by summarizing the empirical findings and their implications for macroeconomic variables, economic, social, and sustainable development goals in middle-income countries and sub-groups. It also provides policy recommendations, particularly addressing the challenges faced by upper-middle-income countries grappling with the middle-income trap. This study contributes to a nuanced understanding of how governance indicators interact and impact social and environmental dimensions within middle-income countries, offering valuable insights for policy formulation and decision-making. Additionally, the thesis provides a comprehensive

analysis and practical insights into promoting economic growth and sustainability within the diverse middle-income country context.

4. METHODOLOGY

This thesis relies on the panel data technique to study the impact of economic growth and other macro-economic variables on social and environmental pillars of sustainable development. Panel data, sometimes referred to as longitudinal data, is data that contains observations about different cross sections across time. The advantage of using Panel data analysis is that it has more space (cross-section units) as well as time dimensions to study particular theoretical issues using empirical estimations. Moreover, panel data analysis is often used to prevent the contract of times series analysis due to a limited number of observations. Furthermore, panel data consist of *i*, cross-section, and *t*, time-series dimensions⁵⁸. Similarly problems related with sustainability were also tackled by panel data analysis; for environment^{59 60 61}, social sustainability^{62 63} and economic sustainability^{64 65}. Below are listed a few benefits of panel data analysis,

1. It gives us more information and variability in dataset, and also reduced co-linearity among the explanatory variables.
2. In comparison with both time series and cross section analysis, using panel data is statistically more efficient, as number of observations is relatively large so that the number of the degrees of freedom in testing statistical hypotheses is high.

⁵⁸D. Gujarati. "Basic econometrics 4th Edition." 2012.

⁵⁹ X.Lin,[et al.], "Linking innovative human capital, economic growth, and CO2 emissions: an empirical study based on Chinese provincial panel data." *International journal of environmental research and public health* 18.16,2021,p. 8503.

⁶⁰ K, Khaizran, M. Usman, and M.A Mehdi. "The determinants of environmental quality in the SAARC region: a spatial heterogeneous panel data approach." *Environmental Science and Pollution Research* 28,2021,p.6422-6436.

⁶¹S. Alataş, "The role of information and communication technologies for environmental sustainability: evidence from a large panel data analysis." *Journal of environmental management* 293,2021,p.112889.

⁶² A.B.Hernández-Lara, J.P, Gonzales-Bustos, and A.Alarcón-Alarcón. "Social sustainability on corporate boards: The effects of female family members on R&D." *Sustainability* 13.4,2021,p. 1982.

⁶³ V.L..Crisóstomo, F.S. Freire, and M.R De Oliveira Freitas. "Determinants of corporate sustainability performance—evidence from Brazilian panel data." *Social Responsibility Journal* 16.8,2020,p.1053-1072.

⁶⁴ N.Henry,A.Yusheng, and M.K. Gyan. "Banking system stability and economic sustainability: A panel data analysis of the effect of banking system stability on sustainability of some selected developing countries." *Quant Financ Econ* 3,2019,p. 709-38.

⁶⁵ E.Dewan and S. Hussein. *Determinants of economic growth (Panel data approach)*. Suva Fiji: Economics Department, Reserve Bank of Fiji, 2001.

3. It allows us to study the adjustment dynamic, for example, economic policy changes or economic crisis adjustments⁶⁶
4. It allows us to identify and measure effects that are not detectable in pure cross-sections or time-series data. Furthermore, panel data also control individual heterogeneity^{67 68}.

However, panel data analysis also poses some limitations as it consists of both cross-sections and time-series dimensions. Typically, it involves “Monthly, Quarterly and Annual data” covering the short time period of each individual asymptotic arguments rely crucially on the number of individuals tending to infinity; however, the number of time periods remains constant⁶⁹. Furthermore, while performing analysis using panel data, the issue of cross-sectional dependence may lead to misleading inferences^{70 71}. Cross-sectional dependence refers to a situation when individual panel units are interdependent.

5. RESEARCH RESULTS IN THE CONTEXT OF RESEARCH HYPOTHESES

Hypothesis -A

The research outcome for which I reject the alternative hypothesis and accept the null hypothesis is that to leave the middle income trap for upper middle-income countries (MIT), economic, social, and environmental sustainability are required. However, environmental sustainability is negatively impacted by economic growth. Furthermore based on the outcomes, economic growth appears to be improving social sustainability by improving the health, education, and reduces poverty & income inequalities. However, economic growth appears to harm the environment by causing more emissions of greenhouse gases same as like middle-income countries full sample. Economic growth is favourable in poverty reduction foreign aid is provided to upper-middle-income countries and international trade exist. However the effectiveness of economic growth on poverty reduction depends on voice & accountability and strong anti corruption polices. Furthermore, economic growth also reduces the infant mortality rate when there is remittance inflow in the economy with

⁶⁶ D.Cho, B.M. Kim, and D-E, Rhee. "Inequality and growth: nonlinear evidence from heterogeneous panel data." *KIEP Research Paper No. Working Papers-14-01*,2014.

⁶⁷ B.Baltagi, ed. *Panel data econometrics: Theoretical contributions and empirical applications*. Emerald Group Publishing, 2006.

⁶⁸ J.Wooldridge, *Econometric analysis of cross section and panel data*. MIT press, 2010.

⁶⁹ Ibid,70

⁷⁰ Ibid,70

⁷¹ B.Baltagi,and M.H. Pesaran. "Heterogeneity and cross section dependence in panel data models: theory and applications introduction." *Journal of Applied Econometrics* 22.2,2007,p. 229-232.

existence of trade and financial development. However effectiveness of economic growth for reducing infant mortality rate requires voice and accountability and rule of law. Likewise, economic growth increases the secondary school enrolment ratio once there is foreign direct investment, which requires political stability and government effectiveness. Lastly, economic growth appears to affect income inequalities in upper-middle-income countries along with remittance inflow and trade. However economic growth improves income distribution when condition of strong political stability, voice & accountability, government effectiveness and the rule of law are present in the upper-middle income countries. Based on the magnitude of economic growth on environmental sustainability and each goal of social sustainability, it is found that economic growth decreases poverty with a more significant positive magnitude (0.387), followed by improving infant mortality rate (0.192) , then improve secondary school enrolment by (0.119) and harm environment by (0.049) and in last follow by improving income distribution by (0.016)- (see table 1)

TABLE1. FACTORS AND CONDITIONS AFFECTING SOCIAL AND ENVIRONMENTAL SUSTAINABLE IN UMIC

UPPER-MIDDLE INCOME COUNTRIES (MIT)					
CONDITION	ENVIRONMENT	POVERTY	INFANT MORTALITY RATE	SECONDARY SCHOOL ENROLMENT	INCOME INEQUALITY
Economic growth	Positive impact/ worsen (0.049)	Positive impact/ decreasing (0.387)	Negative impact/ decreasing (0.192)	Positive impact / increasing (0.119)	Negative impact/decreasing (0.016)
Foreign direct investment	Negative /No influence	Positive/No influence	Negative /No influence	Positive impact/ increasing (0.023)	Negative /No influence
Remittance	Negative /No influence	Positive/No influence	Negative impact/ decreasing (0.279)	Positive/No influence	Negative impact/ decreasing (0.055)
Official development assistance	Positive/No influence	Positive impact/ decreasing (0.215)	Positive/No influence	Negative impact / decreasing (0.056)	Positive impact/increasing (0.029)
Trade	Positive impact/worsen (0.055)	Positive impact/ decreasing (0.630)	Negative Impact / decreasing (0.220)	Positive/No influence	Negative impact/ decreasing (0.156)
Financial development	Positive/No influence	Negative Impact/increasing (0.179)	Negative Impact / decreasing (0.091)	Positive/No influence	Positive/No influence
PSI-PG	Negative /No influence	Positive/No influence	Positive/No influence	Positive impact/ increasing (0.148)	Negative impact/ decreasing (0.091)
VAI-PG	Positive impact/worsen (0.200)	Positive impact/decreasing (0.627)	Negative impact/ decreasing (0.084)	Positive/No influence	Negative impact/ decreasing (0.051)
GEI-EG	Negative /No influence	Positive/No influence	Negative /No influence	Positive impact/ increasing (0.110)	Negative impact/ decreasing (0.124)
RQI-EG	Positive/No influence	Positive/No influence	Negative /No influence	Positive/No influence	Positive/No influence
COC-IG	Positive/No influence	Positive impact/ decreasing (0.289)	Negative /No influence	Positive/No influence	Negative /No influence
ROL-IG	Negative /No influence	Positive/No influence	Negative impact/ decreasing (0.230)	Negative /No influence	Negative impact/ decreasing (0.286)
<p>A)Negative impact indicate negative coefficient sign , thus reducing infant mortality rate B) No influence refers to insignificance of probability. C)Positive refer to worsen increasing / inequality ; Negative refer to improved /decreasing inequalities</p>					

Hypothesis -B

According to the outcome while testing the second hypothesis, I **reject alternative hypothesis and accept the null hypothesis** , the necessary condition for achieving social and environmental sustainability require sustainable economic growth ; however in case of environmental sustainable, the economic growth is not sustainable. Economic growth appears to be improving social sustainability by improving the health & education sector and alleviating poverty. However, economic growth appears to harm the environment by causing more emissions of greenhouse gases. Economic growth is favourable in poverty reduction when the condition of foreign direct investment inflow is met along with trade and under anti-corruption solid policies. Furthermore, economic growth also reduces the infant mortality rate when there is remittance inflow in the economy along with trade. Also, there is strong government effectiveness, and voice & accountability exist under anti-corruption solid policies. Likewise, economic growth increases the secondary school enrolment ratio once foreign remittances are received along with trade. However, the economy's effectiveness in boosting the secondary school enrolment ratio requires strong political stability and government effectiveness. Lastly, economic growth does not appear to affect income inequalities in middle-income countries; however, remittance inflow, trade, political stability, government effectiveness, and the rule of law improve income distribution. Based on the magnitude of economic growth on environmental sustainability and each goal of social sustainability, it is found that economic growth harm the environment with a more significant positive magnitude (0.674), followed by improving education (0.192) and then reduces poverty by (0.404) and in last follow by health outcomes (0.057) (see table 2)

TABLE 2. FACTORS AND CONDITIONS AFFECTING SOCIAL AND ENVIRONMENTAL SUSTAINABLE IN MIC-FS

MIDDLE INCOME COUNTRIES					
CONDITION	ENVIRONMENT	POVERTY	INFANT MORTALITY RATE	SECONDARY SCHOOL ENROLMENT	INCOME INEQUALITY
Economic growth	Positive impact/worsen (0.674)	Positive impact/decreasing (0.404)	Negative impact/decreasing (0.057)	Positive impact/increasing (0.192)	Negative /No influence
Foreign direct investment	Positive impact/worsen (0.022)	Positive impact/decreasing (0.121)	Negative /No influence	Negative /No influence	Positive/No influence
Remittance	Positive impact/worsen (0.065)	Negative /No influence	Negative impact/decreasing (0.018)	Positive impact/increasing (0.111)	Negative impact/decreasing (0.042)
Official development assistance	Positive impact/worsen (0.023)	Negative /No influence	Positive impact/Increasing (0.145)	Negative impact/decreasing (0.096)	Positive impact/increasing (0.019)
Trade	Positive impact/worsen (0.105)	Positive impact/decreasing (0.445)	Negative impact/decreasing (0.331)	Positive impact/increasing (0.168)	Negative impact/decreasing (0.035)
Financial development	Negative /No influence	Negative Impact/increasing (0.212)	Negative /No influence	Positive/No influence	Positive/No influence
PSI-PG	Positive impact/worsen (0.063)	Positive/No influence	Negative /No influence	Positive impact/increasing (0.074)	Negative impact/decreasing (0.023)
VAI-PG	Positive/No influence	Positive/No influence	Negative impact/decreasing (0.045)	Positive/No influence	Negative /No influence
GEI-EG	Negative /No influence	Negative /No influence	Negative impact/decreasing (0.127)	Positive impact/increasing (0.035)	Negative impact/decreasing (0.113)
RQI-EG	Positive/No influence	Negative /No influence	Negative /No influence	Negative /No influence	Positive impact/worsen (0.071)
COC-IG	Positive/No influence	Positive impact/decreasing (0.428)	Negative impact/decreasing (0.141)	Positive/No influence	Negative /No influence
ROL-IG	Negative Impact/improving (0.176)	Negative /No influence	Negative /No influence	Positive impact/increasing (0.059)	Negative impact/improving (0.108)

A) Negative impact indicate negative coefficient sign , thus reducing infant mortality rate
 B) No influence refers to insignificance of probability.
 C) Positive refer to worsen increasing / inequality ; Negative refer to improved /decreasing inequalities

Hypothesis- C

Similarly, according to the empirical results for the testing the hypothesis -third hypothesis, the results outcome indicate, the necessary condition for achieving sustainable economic growth requires external international finance as foreign direct investment & official development assessment in the presence of strong corruption control. Table 3 also indicates various macroeconomic variables and conditional governance indicators that directly impact the economic growth of middle-income countries, their sub-income group, middle-income countries with seaports, and high-income countries. The research reveals that, among international finance variable, foreign direct investment inflow impact economic growth in all the investigated panels (i-e, middle-income countries, their sub-income group, middle-income countries with seaports, and high-income countries). Based on the magnitude, it is found that FDI inflow holds a more significant positive magnitude (0.108) in upper-middle-income countries, then followed by middle-income countries with seaports (0.105) than middle-income countries full sample (0.075), then lower-middle-income countries (0.068) and lastly fallow by high-income countries (0.011). Similarly, official development fosters economic growth in middle-income countries full sample, lower-middle-income countries, and middle-income countries with seaports. Similarly, based on the magnitude, it is found that official development aid influences economic growth with a more significant positive magnitude (0.071) in lower-middle-income countries under the shadow of government effectiveness with a magnitude (0.107), then followed by middle-income countries full sample (0.064) and last in middle-income countries with seaports (0.036). Furthermore, regarding trade, the results reveal its positive influence on economic growth in upper-middle-income countries with the most significant positive magnitude (0.602) then, followed by high-income countries with a magnitude (0.318) under the shadow of regulatory quality with a significant positive magnitude (0.332) and the rule of law with significant positive magnitude (0.021). Lastly, in middle-income countries with seaports, the magnitude of trade is significant and positive (0.162). The results also indicate that a higher magnitude of foreign direct investment in upper-middle-income countries leads to a higher trade impact on economic growth under the strong control of corruption policies, as it is found that control of corruption holds a more significant positive magnitude (0.404) in upper-middle-income countries. Then control of corruption followed by (0.321) in middle-countries with seaport and significantly impact

economic growth positive, foreign direct investment, official development assistance, and trade (see table 3)

TABLE 3. FACTORS AND CONDITIONS REQUIRE FOR SUSTAINABLE ECONOMIC GROWTH FACTORS

ECONOMIC GROWTH					
CONDITION	MIC	UPPER-MIC (MIT)	LOWER-MIC	MIC WITH SEAPORTS	HIC
FDI	Positive impact increasing (0.075) /	Positive impact / increasing (0.108)	Positive impact increasing (0.068) /	Positive impact increasing (0.105) /	Positive impact / increasing (0.011)
Remittance	Positive impact/ influence No	Negative /No influence	Positive/No influence	Positive/No influence	Positive/No influence
ODA	Positive impact increasing (0.064) /	Positive/No influence	Positive impact increasing (0.071) /	Positive impact increasing (0.036) /	Positive/No influence
Trade	Positive impact/ influence No	Positive impact / increasing (0.602)	Positive impact/ influence No	Positive impact increasing (0.162) /	Positive impact / increasing (0.318)
FD	Negative impact/ influence No	Negative Impact/decreasing (0.360)	Negative Impact /decreasing (0.160)	Negative impact/ influence No	Negative Impact /decreasing (0.258)
PSI-PG	Positive impact/ influence No	Positive impact/ No influence	Positive impact/ influence No	Positive impact/ influence No	Positive impact/ No influence
VAI-PG	Negative /No influence	Positive impact/ No influence	Negative /No influence	Negative /No influence	Positive impact/ No influence
GEI-EG	Positive impact/ influence No	Negative /No influence	Positive impact / increasing (0.107) /	Negative /No influence	Negative /No influence
RQI-EG	Positive impact/ influence No	Positive impact/ No influence	Positive impact/ influence No	Positive impact/ influence No	Positive impact / increasing (0.332)
COC-IG	Positive impact increasing (0.279) /	Positive impact / increasing (0.404)	Positive impact increasing (0.201) /	Positive impact increasing (0.321) /	Positive impact/ No influence
ROL-IG	Negative /No influence	Negative /No influence	Negative /No influence	Positive impact/ influence No	Positive impact / increasing (0.027)

6. RESEARCH CONCLUSIONS

The aim of this thesis is to investigate the role of international finance and trade in promoting sustainability in middle-income countries. This research seeks to explore the dynamics, challenges, and opportunities in harnessing international financial mechanisms

and trade policies to foster economic, social, and environmental sustainability in these nations. The thesis aims to provide insights and recommendations for policymakers, businesses, and stakeholders, contributing to the achievement of sustainable development goals in middle-income countries through effective international finance and trade strategies. To explore the impact of international finance and trade on economic growth and other sustainable development pillars in middle-income countries the findings of my thesis reveals that,

a) Foreign direct investment as part of international finance has a significant positive impact on accelerated economic growth in middle-income nations. Similarly, official development aid appears to exhibit positive effects primarily in lower middle-income countries and middle-income countries with sea ports. However remittance inflow as part of internal finance does reveals any association with economic growth,

b) Similarly, international trade has a positive influence on economic growth, particularly in upper middle-income countries, middle-income countries with sea ports, and high-income countries.

c) Furthermore according to the empirical findings this research work also confirms, a higher level of corruption control correlates with increased economic growth in middle-income nations. It also highlights that, for accelerated economic growth, lower middle-income countries benefit from an effective government role, while high-income countries require strong regulatory quality and adherence to the rule of law.

The research also reveals that economic growth, when coupled with international finance and trade, often has detrimental effects on the environment in middle-income countries. According of the empirical findings,

d) Economic growth appear to harm environment in middle-income and high income countries ; whereas Pollution-Heaven hypothesis found to be true to overall middle income countries and lower middle income countries thus foreign direct investment as part of internal finance harm environment. Moreover, the empirical findings indicate that the impact of international finance as official development aid and remittance on environmental pollution varies across different panels of middle-income countries.

e) International trade tends to exacerbate environmental sustainability issues in middle-income countries.

The research demonstrates that economic growth plays a pivotal role in enhancing social sustainability by alleviating poverty and improving health outcomes and education.

f) The empirical findings of the research work indicate that economic growth increases the income baskets of the individuals of the habitants of middle-income countries thus decreases poverty.

g) International finance's influence on various social dimensions is subject to governance factors, resulting in varying outcomes. Foreign aid appears to remove poverty in upper and lower-middle income countries; whereas remittance inflow decreases poverty in lower middle-income countries and middle-income countries with seaports. The empirical findings also confirm that foreign direct investment appear to decrease poverty in overall middle-income countries and middle-income countries with seaport.

h) International trade generally contributes positively to social pillar outcomes in middle-income countries as a whole.

i) However, the extent of its impact on income inequality varies across different panels of middle-income nations, contingent upon governance and the rule of law.

Furthermore, empirical findings also highlight the heterogeneous effects of governance indicators in both middle-income countries as a whole and their sub-panels. These findings emphasize the critical role of government effectiveness in enhancing the social aspects of middle-income countries. Likewise, they underscore that the promotion of environmental sustainability hinges on the presence of a robust rule of law. This research highlights that achieving social and environmental sustainability isn't possible solely through sustainable economic growth. It also finds that middle-income countries can escape the middle-income trap through trade, provided they control corruption. Economic growth positively impacts social sustainability in these countries but negatively affects environmental sustainability due to governance issues.

7. FURTHER DIRECTIONS OF RESEARCH

- I. This research provides direction for future research to investigate green finance and trade openness's impact on sustainability in middle-income countries.
- II. This research also provides direction for future research investigating the heterogenous effect of environment and income inequalities as KUZNETS CURVE.
- III. For future research, it is also recommended that the impact of fin-tech and SMEs be added as drivers of sustainable practice in middle-income countries for sustainable development.

- IV. Lastly, this research also provides direction for future research for investigating the impact of public-private collaboration mechanisms for investigating sustainable development initiatives in middle-income countries.

7. ADDED VALUE OF THE DISSERTATION

This study initially adds value to research by explaining the impact of three combined external financial inflows (i-e as, remittance, foreign direct investment, and official development assistance) on sustainable economic growth for middle-income countries, their sub-income group, and most specifically, middle-income countries with seaports. Furthermore, this research provides a comparative analysis of how international finance impacts economic growth in middle-income countries' sub-income groups.

Furthermore, this study also adds value to research by investigating the impact of these external financial inflows on the vital aspect of the social pillar of sustainable development (i-e, health, poverty, education, and income inequality). Similarly, this research provides a comparative analysis of how these macroeconomic variables impact different income groups of middle-income countries in contrast to high-income (graduated countries) and middle-income countries with seaports.

Similarly, this study adds value to research by explaining the impact of these external financial inflows on environmental degradation in different income groups of middle-income countries. Furthermore, besides external finance, it also provides the impact of trade and financial development on environmental sustainability for middle-income countries, their sub-income group, middle-income countries with seaports, and high-income countries.

Likewise, this research work incorporate the novel conditional factors along with other macro-economic indicators such political stability index, regulatory quality Index, Corruption Control Index and Rule of Law Index in analysis which previously not investigated in terms of middle income countries under the shadow of detailed social , economic environmental sustainability pillars.

Lastly, this research explains and investigates the impact of conditional governance indicators on sustainable development for middle-income countries and their sub-income group. This study also adds value by recommending relevant policies related to middle-

income countries' social, economic, and environmental sustainability by explaining the essence of conditional governance indicators. Variables impact economic, social, and sustainable development goals in middle-income countries and their sub-income group. The last chapter provides policy recommendations based on the research findings for middle-income countries and their sub-income group, especially for upper-middle countries caught in the middle-income trap.

8. DISSERTATION - FLOW

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