

BHUSAL LILA BALLAV

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Website: <https://ballavbabu.github.io/> | Current Location: Tokyo, Japan

RESEARCH SUMMARY

Quantitative economist specializing in input-output (IO) analysis, global value chains (GVC), and structural transformation in developing economies. Research employs Multi-Regional Input-Output (MRIO) modeling, GVC decomposition techniques, and econometric analysis to examine trade and production networks. Current work focuses on Asia-Pacific economic integration, bilateral income flows, and environmental-economic linkages in global supply chains.

EDUCATION

Ph.D. in Economics 2022 – 2025

Yokohama National University (YNU), Kanagawa, Japan

- Dissertation: Economic Transformation in South Asia: Insights from Sectoral Analysis and Global Value Chains

M.S. in Digital Business & Innovation 2020 – 2022

Tokyo International University (TIU), Saitama, Japan

- Thesis: Relationship between Economic Growth and Unemployment: An Econometric Investigation on Asian Developing Countries

B.A. in Economics 2016 – 2020

Tokyo International University (TIU), Saitama, Japan

- Thesis: Economic Transformation and Its Reflections on Contemporary Nepalese Society

B.A. in Mathematics 2009 – 2013

Tribhuvan University (TU), Kathmandu, Nepal

RESEARCH EXPERIENCE

Research Fellow 2025 – Present

Yokohama National University (YNU), Kanagawa, Japan

Research Topic: A Sector-Level Analysis of Bilateral Income Flow in Asia-Pacific

- Applying multi-regional input-output models to analyze income distribution patterns across Asia-Pacific trade networks using OECD ICIO and ADB MRIO databases

RESEARCH INTERESTS

- Development Economics (Asia, structural transformation, industrialization)
- International Trade (GVC participation, value-added trade, regional integration)
- Environmental Economics (embodied emissions, carbon accounting in supply chains)

SOFTWARE & DATA CONTRIBUTIONS

R Packages

gvcAnalyzer

CRAN Accepted | Role: Author & Maintainer

- An official R package available on CRAN for performing Global Value Chain (GVC) analysis. Provides tools to calculate major GVC indicators (participation, position, upstream/downstream length) using standard Input-Output mathematical frameworks.
- DOI: [10.32614/CRAN.package.gvcAnalyzer](https://doi.org/10.32614/CRAN.package.gvcAnalyzer)

adbmrio

GitHub / Developer Package | Role: Developer

- A specialized developer package for processing the Asian Development Bank (ADB) MRIO tables. Includes functions for bilateral export decomposition and embodied CO₂ accounting not yet available in standard libraries.
- Install via devtools: `devtools::install_github("BallavBabu/adbmrio")`

Open Data & Repositories

Harmonized ADB MRIO Panel: Current Prices (2000-2024)

Zenodo Data Repository (2025)

- A harmonized panel of the Asian Development Bank (ADB) Multi-Regional Input-Output tables. Constructed to address temporal inconsistencies across vintage releases, creating a stable time-series for long-run structural analysis.
- Access Data (DOI: [10.5281/zenodo.17694852](https://doi.org/10.5281/zenodo.17694852))

ADB MRIO Panel Data (2000-2023) for adbmrio Package

Zenodo Data Repository (2025)

- Pre-processed input data required for the adbmrio R package. Dataset includes the necessary matrices for 63 economies and 35 sectors, optimized for computational efficiency within the R environment.
- Access Data (DOI: [10.5281/zenodo.17671302](https://doi.org/10.5281/zenodo.17671302))

PUBLICATIONS

Peer-Reviewed Journal Articles

Bhusal, L. B. (2025). Change in the South Asian construction sector: insights from a structural decomposition approach. *Environment, Development and Sustainability*. <https://doi.org/10.1007/s10668-025-07119-x>

Bhusal, L. B. (2025). South Asian global value chain integration patterns: A value-added perspective. *Asia and the Global Economy*, 5(2), 100110. <https://doi.org/10.1016/j.aglobe.2025.100110>

Bhusal, L. B. (2025). Key sector identification of Nepal: An integrated approach with linkage and hypothetical extraction method. *Journal of Economic Structures*, 14(1), 3. <https://doi.org/10.1186/s40008-025-00346-5>

WORKING PAPERS

Carbon Cost of Asian Growth: Mapping Embodied Emissions and Value Added in GVCs

Single-authored. Draft stage. Examines the relationship between economic growth and environmental impacts by tracing embodied carbon emissions through Asian production networks.

A Sector-Level Analysis of Bilateral Income Flow in Asia-Pacific

Single-authored. In progress. Analyzes sectoral patterns of bilateral income transfers across Asia-Pacific economies using multi-regional input-output decomposition techniques.

CONFERENCE PRESENTATIONS

- 20th EAEA International Convention, Manila, Philippines (2025)
- 9th International Conference on Economic Structures (ICES 2025), Chiba, Japan (2025)
- 19th EAEA International Convention, Bangkok, Thailand (2024)
- 8th International Conference on Economic Structures (ICES 2024), Osaka, Japan (2024)
- CEDECONE's Annual International Conference in Economics (CAICE), Kathmandu, Nepal (2023)

GRANTS & HONORS

- Japanese Government (MEXT) Scholarship, fully-funded PhD scholarship (2022-2025)
- Rotary Yoneyama Memorial Scholarship (2020-2022)
- First Prize, University-Level Speech Contest, Tokyo International University (2018)
- Hashimoto Yasuhiko Asia and Africa Scholarship (2017-2018)
- Monbukagakusho Honors Scholarship (JASSO) (2016-2017)

TECHNICAL SKILLS

Quantitative Methods:

- Multi-Regional Input-Output (MRIO) Table Analysis, Global Value Chain (GVC) Measurement and Decomposition Techniques, Structural Decomposition Analysis (SDA), Linkage Analysis, Hypothetical Extraction Method

Statistical Software:

- STATA (advanced), R Programming (data analysis and visualization), Econometric modeling

Data and Databases:

- Experience with OECD's IOTs, WIOD, ADB's MRIO databases, Eora Global MRIO, national input-output tables

Additional Skills:

- Data visualization, Web design (WordPress, Wix), LaTeX document preparation

TEACHING EXPERIENCE

Teaching Assistant, Statistics (Master's Level)

2020 - 2023

Tokyo International University (TIU), Saitama, Japan

- Assisted in course delivery, graded assignments, and provided academic support to graduate students

Teaching Assistant, Business Mathematics (Undergraduate Level)

2021

Tokyo International University (TIU), Saitama, Japan

- Conducted tutorial sessions and supported undergraduate students in quantitative methods

LANGUAGES

- Nepali & Hindi (Native) | English (Professional proficiency) | Japanese (Professional proficiency)

PROFESSIONAL AFFILIATIONS

- East Asian Economic Association (EAEA), Member
- Pan Pacific Association of Input-Output Studies (PAPAIOS), Member

PROFESSIONAL SERVICE

- Ad-hoc Referee: Foreign Trade Review (SAGE Journals)

ADDITIONAL TRAINING & WORKSHOPS

- Participant, Online Training: "Impact Evaluation Methods: Difference-in-Differences Approach," Asian Development Bank (ADB) (2025)
- Participant, 69th Tokyo International Exchange Center Research Presentation (2021)
- Participant, DATA CAMP 2019 TOKYO, Toppan Printing Co., Ltd. (2019)