BHUSAL LILA BALLAV

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RESEARCH SUMMARY

Quantitative economist specializing in input-output (IO) analysis, global value chain (GVC) analysis, and structural transformation in developing economies. Research applies multi-regional input-output (MRIO) modeling, value-added decomposition, and econometric analysis to trade and production networks. Outputs include peer-reviewed journal articles, an R package on CRAN, and MRIO datasets released on Zenodo.

RESEARCH EXPERIENCE

Post-PhD Researcher (Research Fellow)   Oct 2025 – Present

Yokohama National University (YNU), Kanagawa, Japan
- o   Research Topic: A Sector-Level Analysis of Bilateral Income Flow in Asia-Pacific
- o   Applying multi-regional input-output models to analyze income distribution patterns across Asia-Pacific trade networks using OECD ICIO and ADB MRIO databases

EDUCATION

Ph.D. in Economics   Oct 2022 – Sep 2025

Yokohama National University (YNU), Kanagawa, Japan
- o   Dissertation: Economic Transformation in South Asia: Insights from Sectoral Analysis and Global Value Chains

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

Tokyo International University (TIU), Saitama, Japan
- o   Thesis: Relationship between Economic Growth and Unemployment: An Econometric Investigation on Asian Developing Countries

B.A. in Economics   Apr 2016 – Mar 2020

Tokyo International University (TIU), Saitama, Japan
- o   Thesis: Economic Transformation and Its Reflections on Contemporary Nepalese Society

B.A. in Mathematics   Apr 2009 – Mar 2013

Tribhuvan University (TU), Kathmandu, Nepal

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

RESEARCH SOFTWARE DEVELOPMENT

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

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 CO_2 accounting not yet available in standard libraries.
  - Install via devtools: https://github.com/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)

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)

WORKING PAPERS

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

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

Civil Unrest Shocks in Production Networks: Modeling Propagation under Dual Constraints
Single-authored. In progress.
- o Develops MRIO-based framework to model how civil unrest disrupts regional supply chains under capacity and bottleneck constraints.

A Sector-Level Analysis of Bilateral Income Flow in Asia-Pacific
Single-authored. In progress.
- o Analyzes sectoral patterns of bilateral income transfers across Asia-Pacific economies using multi-regional input-output decomposition techniques.

INTERNATIONAL CONFERENCE PRESENTATIONS

2025
- o 20th East Asian Economic Association (EAEA) International Convention
  Manila, Philippines | November 2025 | Oral Presentation
- o 9th International Conference on Economic Structures (ICES 2025)
  Chiba, Japan | August 2025 | Oral Presentation

2024
- o 19th East Asian Economic Association (EAEA) International Convention
  Bangkok, Thailand | November 2024 | Oral Presentation
- o 8th International Conference on Economic Structures (ICES 2024)
  Osaka, Japan | August 2024 | Oral Presentation

2023
- o CEDECON Annual International Conference in Economics (CAICE)
  Kathmandu, Nepal | December 2023 | Oral Presentation

GRANTS & HONORS

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

TECHNICAL SKILLS

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

- o Econometric methods: Panel data analysis, time series, cross-sectional regression

Programming & Software:
- o R: Advanced (package development and CRAN publication, data manipulation with tidyverse, visualization with ggplot2)
- o Stata: Advanced (econometric modeling, panel data analysis, regression diagnostics)
- o LaTeX: Document preparation and academic writing
- o Git/GitHub: Version control and reproducible research workflows

Specialized Databases & Data Sources:
- o Experience with OECD's IOTs, WIOD, ADB's MRIO databases, Eora Global MRIO, national input-output tables

TEACHING EXPERIENCE

Teaching Assistant, Statistics (Master's Level)   May 2020 – Jul 2023

Tokyo International University (TIU), Saitama, Japan
- o Assisted in course delivery, graded assignments, and provided academic support to graduate students

LANGUAGES

- o Nepali and Hindi: Native speaker
- o English: Professional working proficiency (research, writing, presentation)
- o Japanese: Professional working proficiency (JLPT N2)

PROFESSIONAL AFFILIATIONS

- o East Asian Economic Association (EAEA), Member
- o Pan Pacific Association of Input-Output Studies (PAPAIOS), Member
- o The International Input–Output Association (IIOA)

PROFESSIONAL SERVICE

- o Ad-hoc Peer Reviewer: Foreign Trade Review (SAGE Journals), 2025 – Present