



Globalization and Its impact on Southeast Asian Land Use and Urbanization: A Systematic Review of Literature

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Abstract

This review analyzes the effects of economic globalization on urbanization, Land-Use Land-Cover (LULC) Changes, and the environment in Southeast Asia, based on a diverse set of peer-reviewed studies. Using the PRISMA (Page, McKenzie, et al., 2021) method for meta-analysis, the study investigates over 700 peer-published papers and selects 58 for in-depth analysis. The study finds a strong correlation between economic globalization and deforestation in the region, and reveals that environmental protection standards in developing countries are generally less strict than those in developed countries, making them a target for many low-value and high-pollution industries. The review identifies patterns and relationships that may not be immediately apparent in individual studies, providing a basis for further research which can help in making informed policy decisions. Overall, this study presents a holistic snapshot of the impacts of global linkages, such as trade and knowledge flows, on urbanization and land cover change in Southeast Asia.

Background

- Trade driven by globalization has led to environmental degradation and depletion of natural resources in SEA.
- Understanding the relationship between globalization and environmental degradation is crucial to mitigate its negative impacts.
- This study investigates the effects of globalization on land use changes, urbanization, and ecosystem services.

Research Questions

RQ 1: How does the current literature identify the relationship of globalization with urbanization, LULC and environmental change?

RQ 2: What are the mediating variables or constructs whereby globalization influences urbanization, LULC and environmental change.

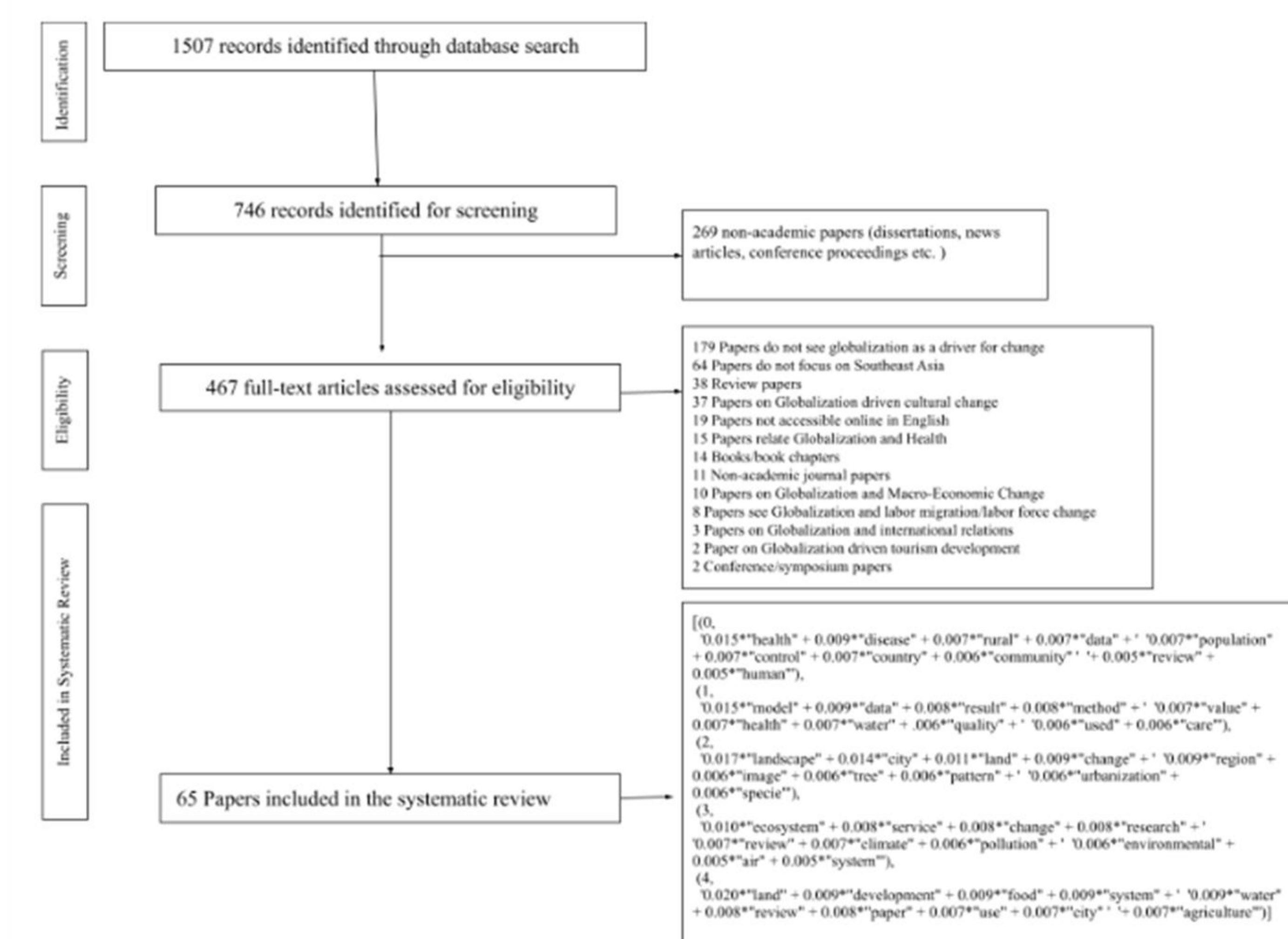


Figure 1- Study Selection Process

Methods

- Meta-analysis on globalization and environment in SEA
- PRISMA method used for study selection
- 58 peer-reviewed studies analyzed
- Latent Dirichlet Allocation (LDA) topic modeling identifies patterns
- Cluster analysis identifies trends in findings
- Python packages used: Pandas, Numpy, Matplotlib, Scikit-learn, BeautifulSoup
- Packages for data manipulation, analysis, visualization, machine learning, web scraping respectively.

Items	Description
Selected Databases	Web of Science
Search Query	((Globalization OR Globali*) AND (Land-use OR Landuse) AND ("southeast asia" OR specific country names)) OR (Globalization and Urbanization: (Globalization OR Globali*) AND urbanization AND ("southeast asia" OR specific country names)) OR (Globalization and Environment Change: globalization AND ("environmental change" OR environmental OR ecolog*) AND ("southeast asia" OR specific country names))
Inclusion Criteria	<ul style="list-style-type: none"> • Study must see globalization as a driver of change. • The study should have focused on at least one of the following SEA countries: Indonesia, Laos PDR, Cambodia, Myanmar, Vietnam, Thailand, or Philippines as their focus of study.
Exclusion Criteria	<ul style="list-style-type: none"> • Book chapters, review papers, unavailability of full text, duplication, and publication in a non-English language. • Papers that do not focus on how globalization has driven urban growth or affected environmental change are omitted.

Table 1- Study Selection criteria

Results

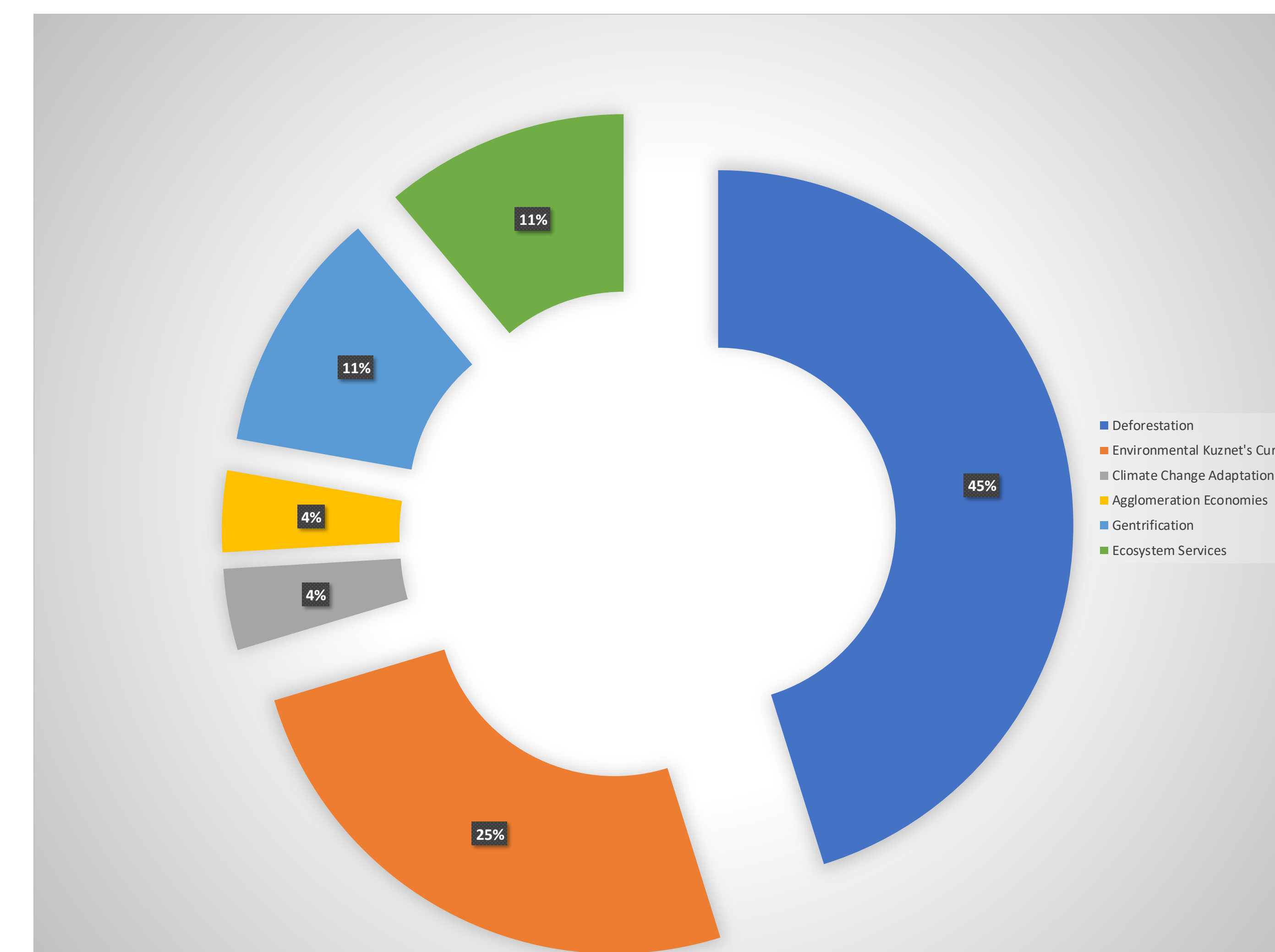


Figure 2- Concepts used to connect globalization, urbanization and land use and land cover (LULC)

Results from Topic Analysis
Topic 1: Globalization-driven landscape changes and urbanization
Topic 2: Globalization and land use, agriculture, and food systems
Topic 3: Health and disease control in rural communities
Topic 4: Data-driven modeling in health and environmental research
Topic 5: Ecosystem services and environmental pollution

Table 2- Results from Topic Analysis

Conclusions

- Trade liberalization has led to an increase in the production and export of agricultural and forest products, leading to deforestation and loss of biodiversity.
- Southeast Asian regions with relaxed environmental protections are attractive to high-pollution and low-value industries.
- Sustainable policies can mitigate negative impacts of globalization on the environment.

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