

## 論文の内容の要旨

### 論文題目

Multi-Scalar Regional Relationships & Regional Connectivity through Cross-Border  
Productive Integration: A Study from South America

(国境を越えた生産統合の観点からみたマルチ・スケールの地域連携と連結性：南アメリカを事例として)

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Despite the proliferation of macroregions worldwide (e.g., ASEAN, EU, MERCOSUR), there has been limited interdisciplinary research on the impact of these integration schemes on cross-border regions, with macroregions mainly studied from the fields of international relations or regionalism and cross-border regions from geography, social sciences, or regional development. This schism has resulted in weak academic discussions on the effectiveness of macroregional integration in promoting local economic development at the cross-border scale, and the lack of research tools to push this debate further. This dissertation takes a multi-scalar approach, conducting a comprehensive analysis of macro- and micro-level factors, to address this research gap. By developing theoretical, methodological, and conceptual tools, this dissertation provides a more detailed picture of the impact of macroregional integration on cross-border regions in South America and sheds light on the relationship between macroregions and cross-border regions in promoting local economic development.

To measure the impact of macroregional mechanisms on local economic development, Chapter 2 constructs a theoretical framework to evaluate the articulation of local productive capacities across borders and to domestic and international markets. A comprehensive Systematic Literature Review of over 10.5 million articles provides an in-depth analysis of the existing literature, highlighting the lack of consensus and theoretical proposals on this topic. The review results in the selection of 16 sources that are rigorously analyzed and served to identify 36 ‘connectedness voids’ -barriers to develop cross-border productive integration- and evaluate the 1260 possible causal relationships between them. This chapter provides new insights into the cross-border product articulation and the interrelationships between its development barriers. This approach is recommended for cross-border regions with low density of productive actors, weak participation of public entities, and emerging agroindustry and basic manufacturing -specially in Latin America and South and Southeast Asia.

Chapter 3 represents a methodological contribution to the study by providing analytical tools for both the macro and micro levels. The chapter begins with a review of previous methods and proposes a statistical analysis and comparative institutional analysis at the macro level. The focus then shifts to the micro level, where the opportunity to implement Causal Graph Models in border studies is highlighted, offering an innovative approach that allows mixed-method research and addresses limitations in data collection due to scarce or disparate datasets in borderlands. In addition, the chapter provides a well-designed field research method based on 150 interviews conducted in previous field research experiences, making it a valuable resource for future cross-border studies.

Chapter 4 presents a comprehensive worldwide overview of the promotion of border and cross-border mechanisms in 100 macroregions, selected and analyzed based on 689 references. This analysis reveals correlation between both mechanisms and classifies the macroregions into four types based on their approaches towards Cross-Border Cooperation: non-engaged, cooperative, supportive, and interventionist. Out of the 100 regions, 42 have participated in cross-border integration, with only 28 (interventionist type) having developed up to eight macroregional cross-border mechanisms by themselves (e.g., zoning tools, funding mechanisms, cross-border legal structures). The highest number of initiatives in this regard can be seen in Western Europe, South America, and West Africa.

In order to contribute to the lack of non-Eurocentric comparative studies between macroregions, Chapter 5 analyzes how the Andean Community (CAN) and the Southern Common Market (MERCOSUR) target cross-border development as they are the most representative South American cases. Descriptive and comparative analyses are conducted based on 448 primary and secondary sources. Although they have different territorial and institutional systems, both CAN and MERCOSUR have promoted cross-border mechanisms, albeit from almost opposite approaches and with varying levels of success. Results indicate that their mechanisms have not been very effective due to limitations in governance, funding, and technical capacity, but highlight potential for improvement through cross-learning. However, the CAN projects deserves special attention due to its relative success and orientation towards cross-border productive articulation.

Focusing on the coffee cross-border value chain project of the CAN -considered the best experience in the region, Chapter 6 evaluates its effectiveness in closing the connectedness voids and promoting sustainable local development. The field research took place in 18 cities and communities in Peru and Bolivia and included 105 interviews, 10 technical visits, and focus groups (106 hours of recordings). Using Causal Graph Models and machine learning tools (confusion matrix), the theoretical framework is validated by comparing with the 1260 causal relationships observed in the case study. The analysis indicates that several connectedness voids were covered while the project was in implementation. However, the progress did not last over time due to the interrelationship between the voids, especially due to the low connectivity and institutional incompatibility in the cross-border region.

The results of this study suggest that while targeting cross-border development through macroregional integration schemes has potential, it has not been effectively realized in South America. This dissertation calls for the development of comprehensive and sustainable cross-border mechanisms, including concertation mechanisms, special macroregional funds for cross-border initiatives, and enhancing technical capacities of public officers in cross-border regions. These strategies, if sustained over time, have the potential to strengthen local productive capacities and drive cross-border development.

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