

# CENTRALITY AND DEVELOPMENT IN THE DIFFERENTIATED MESOREGION OF RIBEIRA VALLEY/GUARAQUEÇABA

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## Abstract

Under the National Development Regional Policy and Promotion Program Sustainability of Sub-regional Spaces, debates emerge wrapped around the articulation and implementation of actions to support the socioeconomic development of regions. From this perspective, this paper analyzes the profile of centrality and socioeconomic development of the municipalities that make up the Vale do Ribeira/Guaraqueçaba region in Brazil, in the period 2005 and 2016. For the analysis, centrality and regional disparity indicators were used, which have as parameters the Gross Domestic Product (GDP), the population and socioeconomic data. The Centrality and Disparity indicators reflect the hierarchy of places related to market areas, defined both by the population contingent and by the urban productive structure of the regions, especially by the ability to generate jobs and product. The results of this study showed that Cajati city in the state of São Paulo, and Paranaguá city in the state of Paraná are the central places in the Vale do Ribeira/ Guaraqueçaba region, with a centrality index higher than the other municipalities.

**Keywords:** Regional Development. Urban Economy. Public Policies. Regional Economy.

## Resumo / Resumen

### CENTRALIDADE E DESENVOLVIMENTO NA MESORREGIÃO DIFERENCIADA VALE DO RIBEIRA/GUARAQUEÇABA

No âmbito da Política Nacional de Desenvolvimento Regional e do Programa de Promoção da Sustentabilidade de Espaços Sub-Regionais, debates emergem envoltos à articulação e implementação de ações que apoiem o desenvolvimento socioeconômico das regiões brasileiras. Nessa perspectiva, esse artigo analisa o perfil de centralidade e desenvolvimento socioeconômico dos municípios que compõem a Mesorregião Diferenciada Vale do Ribeira/Guaraqueçaba, no período de 2005 a 2016. Para a análise, foram usados indicadores de Centralidade e Disparidade Regional, que têm como parâmetros o Produto Interno Bruto (PIB), a população e dados socioeconômicos. Os indicadores de Centralidade e Disparidade refletem a hierarquia dos lugares relacionada com as áreas de mercado, definidas tanto pelo contingente populacional quanto pela estrutura produtiva urbana das regiões, sobretudo pela capacidade de gerar empregos e produto. Os resultados deste estudo apontaram que Cajati, no estado de São Paulo, e Paranaguá no estado do Paraná são os lugares centrais na Mesorregião Diferenciada Vale do Ribeira/ Guaraqueçaba, com índice de centralidade superior aos demais municípios.

**Palavras-chave:** Desenvolvimento Regional. Economia Urbana. Políticas Públicas. Economia Regional.

### CENTRALIDAD Y DESARROLLO EN LA REGIÓN VALE DO RIBEIRA/GUARAQUEÇABA

En el ámbito de la Política Nacional de Desarrollo Regional y el Programa de Promoción de la Sostenibilidad en los Espacios Subregionales, surgen debates que involucran la articulación e implementación de acciones que apoyen el desarrollo socioeconómico de las regiones brasileñas. Desde esta perspectiva, este artículo analiza el perfil de centralidad y desarrollo socioeconómico de los municipios que conforman la región Vale do Ribeira/Guaraqueçaba, no período 2005 y 2016. Para el análisis, se utilizaron indicadores de centralidad y disparidad regional, que tienen como parámetros el Producto Interno Bruto (PIB), la población y los datos socioeconómicos. Los indicadores de Centralidad y Disparidad reflejan la jerarquía de lugares relacionados con las áreas de mercado, definida tanto por el contingente poblacional como por la estructura productiva urbana de las regiones, especialmente por la capacidad de generar empleos y productos. Los resultados de este estudio mostraron que Cajati, en el estado de São Paulo, y Paranaguá en el estado de Paraná son los lugares centrales de la región Vale do Ribeira/ Guaraqueçaba, con un índice de centralidad superior al de los demás municipios.

**Palabras-clave:** Desarrollo Regional. Economía Urbana. Políticas Públicas. Economía Regional.

## INTRODUCTION

The Ministry of National Integration (MIN), currently the Ministry of Regional Development (MDR), started studies and debates at the beginning of the 21st century for the construction of the National Policy for Regional Development (PNDR) to build collective actions to improve economic development indicators and promote the deconcentration of productive activities between regions. Macedo and Porto (2018) asserted that PNDR was an advance and a milestone in discussions on regional development in Brazil, as the development policies proposed in the 20th century were emptied, with few results in terms of deconcentration, or its instruments were discouraged.

PNDR guided the articulation and implementation of actions in favor of stagnant regions or those with a low level of economic dynamism. Among the actions, the creation of the Program for the Promotion of Sustainability of Sub-Regional Spaces (PROMESO) in 2003 stood out. Based on a diagnosis, PROMESO identified a set of sub-national spaces, contiguous among the federated States, indifferent to the conventional administrative regions and that had similar characteristics of underdevelopment or low dynamism. Thirteen of these identified spaces were selected to implement actions aiming to encourage socio-economic development, dialogue between leaders, and the strengthening of regional development. These spaces were named “Differentiated Mesoregions” (RESENDE et al., 2017; FERRERA DE LIMA, 2020).

The first action with the municipalities that make up the Differentiated Mesoregion in the PROMESO context was the creation of the Mesoregion Forum, bringing together leaders from organized civil society, government, and research and development organizations. The articulation between political representation, MIN, and other government bodies for the investments and policies necessary for regional development used to be promoted from observations and actions indicated by the Mesoregion Forum.

The Differentiated Mesoregion of Ribeira Valley/Guaraqueçaba, located in the southeast of the State of São Paulo and east of the State of Paraná, stands out among the identified Mesoregions. Although both states are among the five most representative in Gross Domestic Product (GDP), they internally present regional inequalities and concentration of different productive activities. The result is the existence of sub-regional spaces with stark distortions in terms of socio-economic development relative to the State as a whole. In the particular case of Ribeira Valley, a study by Lima and Paula (2018) already pointed out problems related to the agrarian structure, regularization of land tenure and land use, agricultural profile, among others, as elements that hindered the socio-economic advancement of the region through the strengthening of rural areas. Moreover, there were public management problems, pointed out by Dornellas, Oliveira, and Farah Jr. (2017), which affected both the municipalities located in the São Paulo and Paraná portions of the Differentiated Mesoregion. Colla, Barbieri, and Amaral (2020) pointed out the strong urbanization, industrialization, and the pendular movement of workers specifically in the Guaraqueçaba area as elements of polarization of the peripheral spaces of the coast and the border with São Paulo.

Thus, the problem question that guides this research is: What is the centrality of economic development in the Differentiated Mesoregion of Ribeira Valley/Guaraqueçaba? In this context, this study aims to analyze the profile of centrality and socio-economic development of the municipalities that make up the Differentiated Mesoregion of Ribeira Valley/Guaraqueçaba through centrality and regional disparity indicators. The study<sup>1</sup> presents as a period of analysis the years 2005 and 2016 due to the temporality of PROMESO’s action and the availability of information. In this sense, this text also provides elements for evaluating PROMESO and providing guidance for future public policies for regional and municipal development.

## CENTRALITY AND REGIONAL DISPARITY

The 20th century was very fruitful in terms of theorizing about the location of productive activities and regional and local development. Theories of regional development were derived from theories of location and concepts from geography, economics, and sociology. These theories are also built beyond the conventional idea of economic growth, focused only on the economy product, to

encompass aspects of population and human development (OLIVEIRA, 2021).

In the case of geography, the contribution of Walter Christaller (1966), with his study of the organization of space, market areas, and centrality of places, stands out. In his theorizing, the author points out that a central place acts as a locus of fundamental services for itself and related spaces or complementary regions, both in the relationship between city and country, as well as between country and city, reflecting a mutual interaction. Cities play a central role in the regional arrangement, mainly because of the influence and size of the agglomeration. The organization of places in the regional space stems from a hierarchy, strengthened by the advance of urban activities, especially the secondary and tertiary sectors. Each agglomeration and its market potential play a role relative to its surroundings when forming the urban network, which gives it a position in the hierarchy of places in its region.

Christaller (1966), in his classic study, used estimates to determine the centrality of German agglomerations based on the density of tertiary activities, in the case of telecommunications activities. The telecommunications sector reflected the modernization of cities and their role in regional business volume. However, this typology of study would currently demand variables more linked to the productive structure of the urban space with the spread of telephone services via satellite and mobile telephones.

Alves and Souza (2011) warned that the attractiveness of cities increases because of the expansion of the strengthening of agglomerations and productive activities performed in the urban space, strengthening their power of polarization. Therefore, the strengthening of activities carried out in the urban space is an indicator of the dynamism of the urban economy and its role in regional development. Consequently, it is an observation of the centrality of productive activities and the hierarchy of cities.

Christaller (1966) used as parameters the market areas, the municipal ranking based on this area, and its influence on the regional environment. However, his theorizing does not involve elements for municipalities or cities under economic weakness to advance in the development process. His contribution was restricted to the theory of location and the organization of space.

The advance of regional and local development theories complemented gaps in location theories, particularly regarding the role of local organizations, entrepreneurship, public policy, and endogenous and exogenous factors that guide discussions on the development of places throughout the 20th century. It did not mean abandoning location theories, recently re-discussed in the “new economic geography” (CAPELO, 2008; COELHO, 2013; JOYAL, 2019).

New discussions on the elements or actions necessary to change the development profile of a municipality or region occurred with the endogenous development approaches, that is, the socio-economic development stimulated by the base, leaders, or local citizens. In this case, this change will alter the ranking of the municipality or city in the regional hierarchy.

In recent years, a set of contributions to endogenous and local development has been attributed to the context of Brazilian scientific production and regional development. However, there is still a lack of studies on the profile of underdevelopment and the trends of places facing the dynamics of capitalism and regional economies, in particular strengthening local productive arrangements (FERRERA DE LIMA, 2011; FLORES; MARINI, 2018).

In this context, PROMESO had as a parameter the strengthening of local and regional organizations, the representativeness of these organizations in decisions about public policies, and the necessary actions to reverse the problems of economic and social development. In other words, PROMESO was guided by endogenous development actions, coordinated mobilization of agents in favor of the region, social organization, and economic activation (ROCHA NETO; BORGES, 2014; STOFFEL; RAMBO; FREITAS, 2019). Over time, these actions, when presenting positive results, will change (or not) the development profile and the position of municipalities in the hierarchy of centrality. Thus, knowing the ex-ante and ex-post productive profile of these actions will reflect the movement of all municipalities towards economic growth and development. The importance of the economic growth process, pointed out by Ribeiro, Batista, and Staduto (2019) as an element of income deconcentration, is highlighted in the long term. In other words, stimulating and promoting the economic growth process in the regions is necessary to advance in a process of lower regional income inequality.

In a study on the State of Paraná, Strassburg et al. (2014) pointed out that the use of data referring to productive activities allowed inferring not only the hierarchy of places but the profile of economic

growth and regional disparities, whether based on economic or social variables. Thus, the idea of centrality proposed by Christaller (1966) is still valid, but it also allows for greater generalizations, according to the information profile and urban sectors used in this analysis.

## METHODOLOGY

This section presents the characterization of the study area and the methodological procedures used in this study to understand the economic, population, municipal socio-economic development, centrality, and disparity dynamics in the Differentiated Mesoregion of Ribeira Valley/Guaqueçaba.

### STUDY AREA CHARACTERIZATIONS

The Differentiated Mesoregion of Ribeira Valley/Guaqueçaba is located in the State of Paraná and covers the following municipalities (Figure 1): Adrianópolis, Antonina, Bocaiúva do Sul, Campina Grande do Sul, Cerro Azul, Guaqueçaba, Guaratuba, Itaperuçu, Matinhos, Morretes, Paranaguá, Pontal do Paraná, Rio Branco do Sul, Tunas do Paraná, and Doutor Ulysses. In the State of São Paulo, it comprises the municipalities of Apiaí, Barra do Chapéu, Barra do Turvo, Cajati, Cananéia, Eldorado, Iguape, Ilha Comprida, Iporanga, Itaoca, Itapirapuã Paulista, Itariri, Jacupiranga, Jiquiá, Juitiba, Miracatu, Pariquera-Açu, Pedro de Toledo, Registro, Ribeira, São Lourenço da Serra, Sete Barras, and Tapirai (BRASIL, 2020).

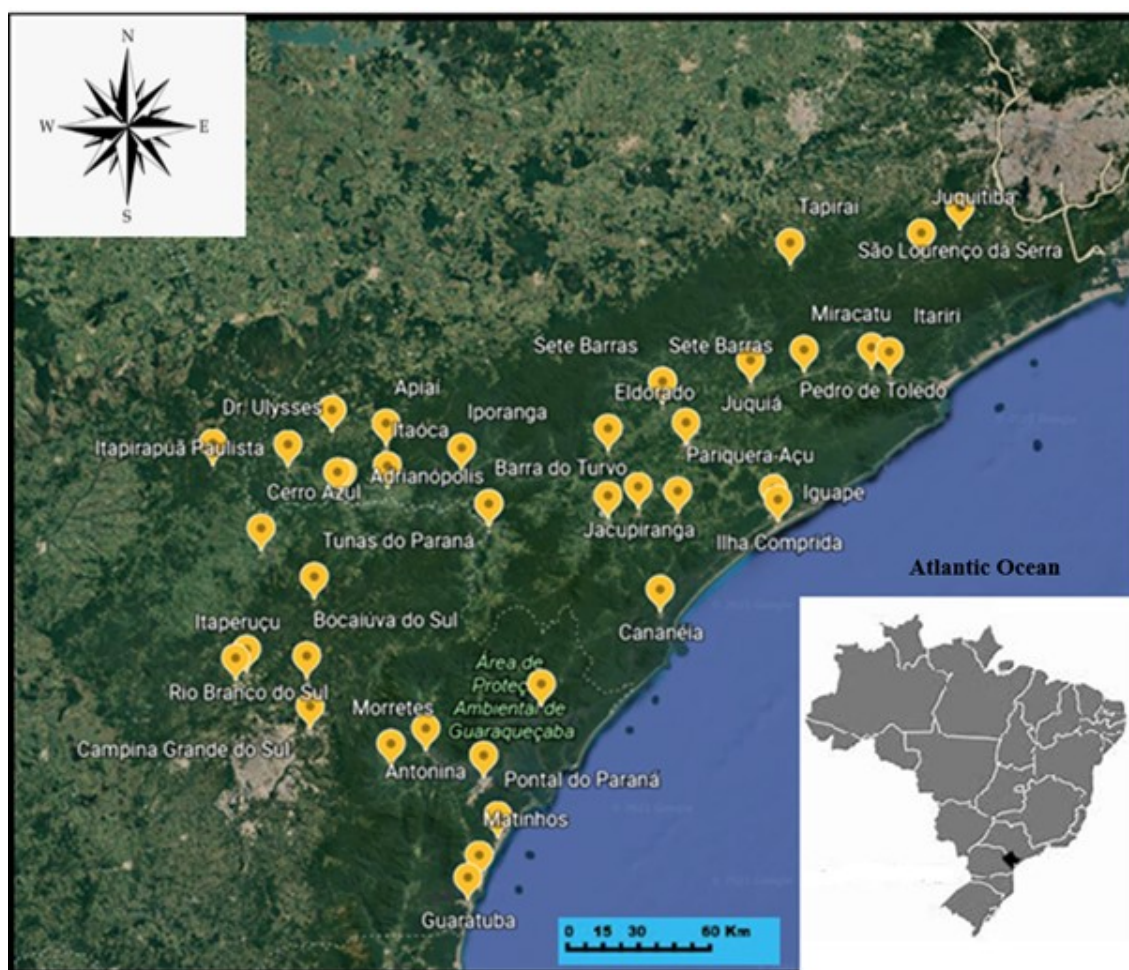


Figure 1 — Municipalities of the Differentiated Mesoregion of Ribeira Valley/Guaqueçaba – 2015.  
Source: Prepared by the authors from Google Earth, 2021.

The study area is characterized by quilombo lands and conservation units (protection units,



ecological stations, and state parks or sustainable use units, environmental protection areas, areas of relevant ecological interest, extractive reserves, sustainable development reserves, and private reserves). Thus, the study area covers several ethnocultural territories characterized by traditional communities, namely, caiçara, indigenous, quilombola, and riverside communities that constantly seek to adapt their ways of life and economic activities to the heterogeneous edaphoclimatic conditions marked by the Atlantic Forest Biome. In this sense, the appropriation of these communities in the production of space for tourism in the coastal and mountainous region of Ribeira Valley should be highlighted as a socio-economic alternative capable of harmonizing both environmental conservation and socio-economic development (SILVA JÚNIOR, 2015; ANDRADE; TATTO, 2013; BIANCHINI, 2010; TODESCO, 2010).

In general, the Differentiated Mesoregion of Ribeira Valley/Guaraqueçaba is marked by a low population contingent when correlated to its total area and demographic density of the territorial unit (Table 1). Furthermore, its territory is located between the Ribeira de Iguape River Basin and the Iguape-Cananéia-Paranaguá Estuarine Lagoon Complex, comprising the southeastern regions of the State of São Paulo and the eastern regions of the State of Paraná, that is, 1,119,133 and 1,711,533 hectares, respectively, covering a total area of approximately 2,830,666 hectares (BIANCHINI, 2010).

State	Municipality	Population estimate	Total area (km <sup>2</sup> )	Demographic density (km <sup>2</sup> )
SP	Apiáí	24,226	974	25.85
	Barra do Chapéu	5,760	406	12.93
	Barra do Turvo	7,632	1,008	7.67
	Cajati	28,494	454	62.43
	Cananéia	12,541	1,243	9.84
	Eldorado	15,544	1,654	8.85
	Iguape	30,989	1,977	14.59
	Ilha Comprida	11,362	188	47.9
	Iporanga	4,199	1,152	3.73
	Itaoca	3,330	183	17.64
	Itapirapuã Paulista	4,268	407	9.55
	Itariri	17,598	274	56.5
	Jacupiranga	17,889	704	24.44
	Juquiá	18,718	822	23.41
	Juquitiba	31,646	522	55.04
	Miracatu	19,643	1,002	20.56
	Pariquera-Açu	19,723	359	51.34
	Pedro de Toledo	11,421	670	15.22
	Registro	56,393	722	75.11
	Ribeira	3,330	336	10
	São Lourenço da Serra	15,978	186	74.96
	Sete Barras	12,780	1,054	12.34
	Tapiraí	7,766	755	10.61
PR	Adrianópolis	5,857	1,349	4.73
	Antonina	18,949	882	21.41
	Bocaiúva do Sul	13,129	826	13.3
	Campina Grande do Sul	43,685	539	71.93
	Cerro Azul	17,833	1,341	12.63
	Guaraqueçaba	7,594	2,020	3.9
	Guaratuba	37,527	1,326	24.21
	Itaperuçu	29,070	314	75.97
	Matinhos	35,219	118	249.93
	Morretes	16,446	685	22.96
	Paranaguá	156,174	827	169.92
	Pontal do Paraná	27,915	200	104.67
	Rio Branco do Sul	32,517	812	37.73
	Tunas do Paraná	9,022	669	9.36
	Doutor Ulysses	5,552	782	7.33

Table 1 — Differentiated Mesoregion of Ribeira Valley/Guaraqueçaba: information synthesis – 2016.  
Source: Research results based on data from IBGE (2020).

Therefore, characterizations of the study area point out relevant singularities that lack a deeper analytical investigation with detailed methodological information and procedures that will be shown in the next section.

## METHODOLOGICAL PROCEDURES

The characteristic of this research is documentary/bibliographic related to the collection of information from reference databases of the area (GIL, 2002) in the electronic databases of the Institute for Applied Economic Research (IPEA/IPEADATA), the Industry Federation of the State of Rio de Janeiro (FIRJAN), and the Brazilian Institute of Geography and Statistics (SIDRA/IBGE). The data from the period between 2005 and 2016 were extracted from these databases due to the availability of information for all indicators and the period of validity of PROMESO. The data were organized, tabulated, and equated in an electronic spreadsheet (Excel, version 2010), following the methodological procedures set out separately in sequence by economic and population dynamics, development, centrality, and disparity, considering the interregional (relative to Differentiated Mesoregions) and intraregional municipal reach (relative to Brazil).

Data referring to the total Gross Domestic Product (GDP) at current prices, disaggregated by economic activity sectors, both deflated based on the National Consumer Price Index (INPC) and having as the base year 2005, which is the first year of the analysis, were collected to understand the economic dynamics of the cities. The percentage participation, ranking, and the interregional and intraregional municipal annual average variation were presented for the analyses and discussion of the results.

The used data, concepts, and methodology were those from IBGE (2020) through a retropolated series<sup>2</sup>. In this series, the primary sector congregates agricultural activities, hunting, fishing, and extractivism; the secondary sector corresponds to the transformation, extractive, energy, and civil construction industries; and the tertiary sector corresponds to trade in goods, services, civil servants, and the military. Furthermore, the sectorial GDP at current prices excludes any tax and transport costs billed separately and includes any subsidy on the product.

In population dynamics, the resident population and population estimates for each municipality were based on the extraction from the database of SIDRA/IBGE (2020) and the Institute for Applied Economic Research (IPEADATA, 2020). The percentage participation, ranking, and the average variation of interregional and intraregional municipal annual growth rates were estimated for the analyses and discussion of the results.

The Firjan Municipal Development Index (IFDM), prepared by the Industry Federation of the State of Rio de Janeiro (FIRJAN), whose measure aggregates three dimensions of human development, that is, education, health, and employment and income, based on official public statistics provided by the Ministries of Labor, Education, and Health, was used as a parameter to achieve the socio-economic development dynamics of the municipalities. Aggregate data on childhood education service, dropping out, the distortion between age and grade in primary education, teachers with higher education in primary education, average hours, daily classes, and the result of the basic education development index were considered in the educational dimension. The health dimension was based on basic care, given the proportion of adequate prenatal care, sensitive hospitalization, ill-defined causes of death, and infant death due to preventable causes. The employment and income dimension was collated from data on formal employment generation, the labor market formalization rate, income generation, real wages, and the Gini Index of income inequality in formal labor (FIRJAN, 2020).

The analyses and discussion of the results considered the classification of municipalities into the low development stage, with an index from 0.00 to 0.399; regular development stage, with an index from 0.400 to 0.599; moderate development stage, with an index from 0.600 to 0.799; and high development stage, with an index from 0.800 to 1.00 (FIRJAN, 2020).

The interregional and intraregional municipal Centrality Indicator (CI) was estimated in the centrality dynamics, adapted from Christaller (1966) by Strassburg et al. (2014), Ferrera de Lima and Bidarra (2019), and Freitas and Ferrera de Lima (2021), weighing economic data on total GDP and urban GDP in the secondary and tertiary sectors and population data, respectively comprised in the following equations:

$$CI = (Yurb \div M) * (Ytot \div Muniv)(1)$$

where CI is the Centrality Indicator of the differentiated mesoregion, Yurb is the urban GDP (secondary and tertiary sector) of the municipality, M is the municipality population, Ytot is the total GDP of the municipality, Muniv is the total population of the differentiated mesoregion or total population of Brazil.

The CI classification proposed by Ferrera de Lima and Bidarra (2019) was used to interpret the centrality of the municipalities: a low degree of centrality when  $CI < 1.99$ , a median degree of centrality when CI is from 2.0 to 4.99, and a high degree of centrality when  $CI > 5.00$ . The degree of municipal concentration of urban economic activities of this indicator was estimated for the analyses and discussions of the results, assuming that there is economic and/or population growth related to the dynamics of polarization when the variation is positive and, when considered low, the variation negative indicates that the municipality has a cooled economy in the secondary and tertiary sectors (STRASSBURG et al., 2014; FERRERA DE LIMA; BIDARRA, 2019).

The Disparity Indicator (DI) was used in the disparity dynamics. Its calculation was presented by Houard and Marfouk (2000) and adapted by Raiher et al. (2017), Matovani et al. (2020), and Oliveira and Ferrera de Lima (2021), who considered the disparities between the municipal socio-economic development profile, according to Equation (2).

$$DI = (Xi - Xmin j) \div (Xmax j - Xmin j)(2)$$

where  $X_i$  is the general IFDM of the municipality of the differentiated mesoregion,  $Xmin$  is the lowest IFDM of the municipality of the differentiated mesoregion, and  $Xmax$  is the highest IFDM of the municipality of the differentiated mesoregion.

Thus, the interregional and intraregional coefficients reached in DI to interpret the municipal dynamics were classified as proposed by Raiher et al. (2017), Matovani et al. (2020), and Oliveira and Ferrera de Lima (2021), namely: convergent to the most dynamic, when  $DI > 0.30$ ; tending to convergence, when DI is between 0.19 and 0.29; and divergent from the most dynamic or stagnant, when  $DI < 0.18$ . This indicator points to the convergence of socio-economic development of the municipalities, i.e., the higher the IFDM of the differentiated mesoregion compared to the maximum obtained IFDM, the closer to the more developed unit.

## RESULTS AND DISCUSSIONS

Considering the role of the State as a formulator of public policies, this section sought to present and discuss the results of the Centrality and Regional Disparity indicators from the economic, population, and municipal socio-economic development dynamics in the Differentiated Mesoregion of Ribeira Valley/Guaraqueçaba.

### MUNICIPALITIES OF THE DIFFERENTIATED MESOREGION OF RIBEIRA VALLEY/GUARAQUEÇABA AND THEIR PARTICIPATION IN THE TOTAL GDP

THERE are some important considerations in the economic dynamics of municipalities belonging to the Differentiated Mesoregion of Ribeira Valley/Guaraqueçaba regarding the municipal percentage participation and ranking based on GDP data for the period from 2005 to 2016. Table 2 summarizes the participation and ranking of the total GDP of the municipalities for 2005 and 2016.

State	Municipality	2005		2016	
		Part. % Meso	Rank.	Part. % Meso	Rank.
SP	Apiáí	2.2%	12th	2.5%	9th
	Cajati	6.5%	3rd	5.3%	3rd
	Iguape	2.0%	15th	2.5%	10th
	Itapirapuã Paulista	0.2%	37th	0.1%	39th
	Registro	4.6%	5th	7.2%	2nd
PR	Campina Grande do Sul	3.7%	8th	4.5%	5th
	Guaratuba	2.6%	11th	3.0%	8th
	Matinhos	3.8%	7th	3.7%	7th
	Paranaguá	29.4%	1st	32.8%	1st
	Quatro Barras	4.8%	4th	4.9%	4th
	Rio Branco do Sul	6.8%	2nd	4.2%	6th

Table 2 — Differentiated Mesoregion of Ribeira Valley/Guaraqueçaba: ranking and participation of the total GDP of each municipality relative to the GDP of the Mesoregion – 2005 to 2016. Source: Research results based on data from IBGE (2020).

Interregionally, the research results, based on data from IBGE (2020), indicated that the municipalities of Barra do Turvo (SP), Cananéia (SP), Eldorado (SP), Iporanga (SP), Itapirapuã Paulista (SP), Juquiá (SP), Juititaba (SP), Miracatu (SP), Pedro de Toledo (SP), São Lourenço da Serra (SP), Tapiraí (SP), Pontal do Paraná (PR), Rio Branco do Sul (PR), Tunas do Paraná (PR), and Doutor Ulysses (PR) lost percentage participation. In addition, Apiáí (SP), Barra do Chapéu (SP), Iguape (SP), Ilha Comprida (SP), Itariri (SP), Jacupiranga (SP), Pariqueira-Açu (SP), Registro (SP), Sete Barras (SP), Adrianópolis (PR), Antonina (PR), Bocaiúva do Sul (PR), Campina Grande do Sul (PR), Cerro Azul (PR), Guaraqueçaba (PR), Guaratuba (PR), Itaperuçu (PR), Morretes (PR), and Paranaguá (PR) were the municipalities that improved their positions in the GDP participation of the Differentiated Mesoregion of Ribeira Valley/Guaraqueçaba.

The participation of the first municipality, Paranaguá, with an evolution from 29.4% to 32.8% in the Mesoregion as a whole, demonstrates a trend to a concentration of the intraregional GDP dynamics. In this sense, Campos (2014) highlighted the strategic position of the Paranaguá Port, which has a positive growth correlation with Paraná agribusiness, showing local processes of town-ness mutatis mutandis through hierarchical chains in an urban multi-scalarity, causing spaces of flows. In other words, it is a phenomenon embodied in contemporary urban and economic theories, such as the central flow theory of Taylor (2012). Interregionally, the Differentiated Mesoregion of Ribeira Valley/Guaraqueçaba is not very expressive in terms of wealth generation when compared to the GDP of Brazil, with Registro (SP) being the hub municipality in the Ribeira Valley, but below 0.04%.

The municipality of Paranaguá (PR) maintained the highest economic relevance regarding the participation of the total GDP of each of the 39 municipalities relative to the total GDP of the Differentiated Mesoregion of Ribeira Valley/Guaraqueçaba from 2005 to 2016, surpassing the others in importance in wealth generation.

The average annual variation of the total GDP was expressive in the municipalities of Adrianópolis (PR), Cananéia (SP), Iguape (SP), and Ilha Comprida (SP). Cananéia (SP) and Juititaba (SP) stood out negatively, going from 6th to 26th place and 9th to 17th place in the regional ranking, respectively. The municipalities of Ilha Comprida and Adrianópolis stood out positively, advancing from 27th to 11th place and 32nd to 23rd in the regional ranking, respectively. The variation in GDP performance reflected the typical seasonality of economic activities involving tourism and primary activities, which concentrate their demand or crops in certain periods of the year. Regarding tourism, which is one of the significant activities in the Mesoregion, Silva Júnior (2015) pointed to a trend of economic diversification supported by the insertion of ecotourism, community-based tourism, and rural tourism in the municipalities of Cananéia (SP), Ilha Comprida (SP), Iguape (SP), Peruíbe (SP), Iporanga (SP), and Eldorado (SP). In the case of the primary sector, Bianchini (2010) pointed to an increase in the percentage participation of Adrianópolis in the adhesion of new investment contracts related to the credit lines made possible by the National Program for Strengthening Family Agriculture (PRONAF), an event that directly influences the municipal cash circulation.



## PARTICIPATION OF THE MUNICIPALITIES OF THE DIFFERENTIATED MESOREGION OF RIBEIRA VALLEY/ GUARAQUEÇABA IN THE SECTORIAL GDP

Considering the percentage composition of the sectors in GDP (Table 3), the municipalities Apiaí (SP), Barra do Chapéu (SP), Eldorado (SP), Iguape (SP), Itariri (SP), Jacupiranga (SP), Juquiá (SP), Miracatu (SP), Pedro de Toledo (SP), Sete Barras (SP), Tapiraí (SP), Bocaiúva do Sul (PR), Cerro Azul (PR), Tunas do Paraná (PR), and Doutor Ulysses (PR) maintained their productive activities concentrated in the primary sector; Antonina (PR), Paranaguá (PR), and Rio Branco do Sul (PR) maintained their productive activities concentrated in the secondary sector; Barra do Turvo (SP), Iporanga (SP), Jucituba (SP), Registro (SP), São Lourenço da Serra (SP), Campina Grande do Sul (PR), Guaratuba (PR), and Itaperuçu (PR) maintained their productive activities concentrated in the tertiary sector.

Some variations in sectoral participation were observed in the period from 2005 to 2016, in which Adrianópolis (PR) moved from the primary to the secondary sector; Itaoca (SP) and Itapirapuã Paulista (SP) moved from the primary to the tertiary sector; Cajati (PR) switched its activities from the secondary to the primary sector, and Matinhos (PR) and Pontal do Paraná (PR) moved from the secondary to the tertiary sector. Pariquera-Açu (SP), Guaraqueçaba (PR), and Morretes (PR) transferred their activities from the tertiary to the primary sector, while Ilha Comprida (SP) moved from the tertiary to the secondary sector. The municipality of Cananéia (SP) drew attention due to the balanced transfer of its participation from the secondary to the primary and tertiary sectors. Moreover, Ribeira (SP) stood out due to the balanced transfer of its participation from the primary and tertiary sectors to the primary sector. In other words, there was no static situation among the municipalities, showing certain dynamics in productive activities, which reflected in GDP variation. The most contiguous regions to the poles stood out even considering this heterogeneity, as they suffered its direct effect on the sectoral participation of each municipality in the Differentiated Mesoregion of Ribeira Valley/Guaraqueçaba.

Regarding the participation of the primary GDP of each municipality relative to the primary GDP of the Differentiated Mesoregion of Ribeira Valley/Guaraqueçaba, Barra do Chapéu (SP), Barra do Turvo (SP), Cananéia (SP), Iguape (SP), Ilha Comprida (SP), Iporanga (SP), Jacupiranga (SP), Pariquera-Açu (SP), Ribeira (SP), São Lourenço da Serra (SP), Sete Barras (SP), Adrianópolis (PR), Campina Grande do Sul (PR), Guaraqueçaba (PR), Guaratuba (PR), Itaperuçu, Matinhos (PR), Morretes (PR), Paranaguá (PR), and Pontal do Paraná (PR) were the municipalities that improved their position in the ranking.

The most expressive municipalities, representing about 5% to 10% of the primary GDP of the Differentiated Mesoregion of Ribeira Valley/Guaraqueçaba, were Sete Barras (SP), Cajati (SP), Apiaí (SP), Jacupiranga (SP), Juquiá (SP), Registro (SP), and Cerro Azul (PR). In this sense, Silva Júnior (2015) highlighted that the economic activities in the primary sector in the coastal portion of Ribeira Valley/Guaraqueçaba are concentrated in fishing. In the mountainous portion, Campos (2014) highlighted the artisanal production and the crop-livestock integration, with an emphasis on vegetables, fruits, and egg products, pig farming, beef cattle, dairy production, and banana, coffee, bean, papaya, and corn crops.

State	Municipality	GPD 1st sector		GPD 2nd sector		GPD 3rd sector	
		$\Delta\%$	Rank.	$\Delta\%$	Rank.	$\Delta\%$	Rank.
SP	Apiai	16%	13th	17%	9th	8%	38 <sup>th</sup>
	Barra do Chapéu	37%	2nd	15%	15th	10%	26 <sup>th</sup>
	Barra do Turvo	7%	37th	13%	20th	10%	23 <sup>rd</sup>
	Cajati	21%	10th	15%	14th	9%	35 <sup>th</sup>
	Cananéia	16%	14th	77%	4th	9%	29 <sup>th</sup>
	Eldorado	19%	12th	11%	31st	10%	24 <sup>th</sup>
	Iguape	13%	28th	170%	2nd	10%	20 <sup>th</sup>
	Ilha Comprida	15%	19th	714%	1st	11%	16 <sup>th</sup>
	Iporanga	25%	5th	15%	13th	9%	31 <sup>st</sup>
	Itaoca	6%	38th	37%	6th	10%	19 <sup>th</sup>
	Itapirapuã Paulista	2%	39th	12%	29th	11%	15 <sup>th</sup>
	Itariri	13%	26th	4%	39th	10%	25 <sup>th</sup>
	Jacupiranga	28%	4th	15%	12th	9%	34 <sup>th</sup>
	Juquiá	25%	6th	10%	33rd	9%	37 <sup>th</sup>
	Juquitiba	10%	33rd	9%	36th	9%	32 <sup>nd</sup>
	Miracatu	14%	20th	10%	32nd	9%	33 <sup>rd</sup>
	Pariquera-Açu	22%	9th	14%	16th	9%	28 <sup>th</sup>
	Pedro de Toledo	11%	30th	7%	37th	10%	22 <sup>nd</sup>
	Registro	32%	3rd	9%	35th	10%	21 <sup>st</sup>
	Ribeira	15%	18th	12%	26th	10%	27 <sup>th</sup>
	São Lourenço da Serra	14%	23rd	18%	8th	9%	30 <sup>th</sup>
	Sete Barras	23%	8th	14%	18th	9%	36 <sup>th</sup>
	Tapiraí	10%	34th	12%	28th	8%	39 <sup>th</sup>
PR	Adrianópolis	11%	32nd	87%	3rd	11%	13rd
	Antonina	14%	21st	12%	24th	11%	14 <sup>th</sup>
	Bocaiúva do Sul	8%	36th	13%	21st	12%	7 <sup>th</sup>
	Campina Grande do Sul	13%	25th	12%	27th	12%	8 <sup>th</sup>
	Cerro Azul	13%	27th	16%	11th	13%	6 <sup>th</sup>
	Guaraqueçaba	20%	11th	12%	25th	10%	17 <sup>th</sup>
	Guaratuba	24%	7th	11%	30th	13%	5 <sup>th</sup>
	Itaperuçu	16%	15th	12%	23rd	12%	9 <sup>th</sup>
	Matinhos	14%	24th	16%	10th	13%	4 <sup>th</sup>

Table 3 — Differentiated Mesoregion of Ribeira Valley/Guaraqueçaba: ranking of the average variation of the sectorial GDP of each municipality – 2005 to 2016. Source: Research results based on data from IBGE (2020).

In contrast, Barra do Turvo (SP), Ilha Comprida (SP), Itaoca (SP), Itapirapuã Paulista (SP), Iporanga (SP), Juquitiba (SP), Matinhos (PR), Paranaguá (PR), Pontal do Paraná (PR), and Tunas do Paraná (PR) were the municipalities in which GDP of the primary sector was less expressive, that is, below 5%. This result reflects the difficulties related to limitations in land use or arising from the disuse of land in conservation units, the inefficient infrastructure for the production distribution, and the hilly relief of the mountainous region, which makes mechanization and logistics difficult (BIANCHINI, 2010).

Therefore, the fragility of agricultural areas is highlighted due to the high variability of the erosive potential, with a range from 5,360.60 to 9,278.75 MJ mm h<sup>-1</sup> ha<sup>-1</sup>, and high levels of precipitation, with a range from 1,325.6 to 2,430.9 mm (BATISTA et al., 2021). Furthermore, it lacks agricultural policies

that positively stimulate agricultural production and municipal per capita income through rural credit and technical assistance. Regarding the participation of the secondary GDP of each municipality relative to the secondary GDP of the Differentiated Mesoregion of Ribeira Valley/Guaraqueçaba, Paranaguá (PR) reinforced its importance in the industry, corresponding to 35% of the wealth generated in the regional set.

Cajati (SP) was the second most representative municipality in the secondary sector due to its industrial park, which produces cement, quicklime, fertilizers, and inputs for animal feed, directly affecting the generation of formal jobs (SILVA JÚNIOR, 2015). Paranaguá (PR) and Registro (SP) concentrated 25.3% of the economic activities in the tertiary sector relative to the tertiary GDP of the Differentiated Mesoregion of Ribeira Valley/Guaraqueçaba. The municipality of Registro (SP) has particular importance due to its geographic location and the fact it has the largest number of public institutions and state and federal services, called in the past as the “Capital of Ribeira Valley.” In contrast, Paranaguá (PR) has a predominance of transport companies and the logistics area of cereal, agro-industrial cooperative and companies, involved in the international agribusiness. The location of the port of Paranaguá has made the municipality of Paranaguá an important international logistics hub (CAMPOS, 2014; FRANÇA, 2014).

Considering the average variation of the sectorial GDP of each municipality in the Differentiated Mesoregion of Ribeira Valley/Guaraqueçaba, Tunas do Paraná (PR) stood out with the highest variation in the primary and tertiary sectors, reaching an average growth rate of 55% and 15%, respectively, while Ilha Comprida (SP) showed the highest average variation between 2005 and 2016. In this sense, Bianchini (2010) reported that the participation of Tunas do Paraná (PR) has been insignificant in the wealth generation although 34 investment contracts related to credit lines made possible by the National Program for Strengthening Family Farming (PRONAF) have been signed due to the fragile presence of family farming. On the other hand, the lowest variations in the primary, secondary, and tertiary sectors were observed in the municipalities of Itapirapuã Paulista (2%), Itariri (SP) (4%), and Tapiraí (SP) (8%), respectively.

## POPULATION DYNAMICS OF THE MUNICIPALITIES OF THE DIFFERENTIATED MESOREGION OF RIBEIRA VALLEY/GUARAQUEÇABA

The estimated population of the Differentiated Mesoregion of Ribeira Valley/Guaraqueçaba reached 597,168 inhabitants in 2005. However, it was projected on 843,438 inhabitants in 2016. Among the municipalities, Paranaguá (PR) was the most populous in the Mesoregion, comprising about 18% of the regional population in 2016, which represents 0.08% of the Brazilian population. In contrast, Itaoça (SP) corresponded to the last most populous municipality in the Mesoregion also in 2016, representing 0.4% of the total population of the Mesoregion and 0.002% of the total population of Brazil.

Table 4 shows that the municipalities of Apiaí (SP), Barra do Turvo (SP), Cajati (SP), Cananéia (SP), Iporanga (SP), Jacupiranga (SP), Jiquiá (SP), Miracatu (SP), Pariquera-Açu (SP), Registro (SP), Sete Barras (SP), Tapiraí (SP), Antonina (PR), Campina Grande do Sul (PR), Guaraqueçaba (PR), Morretes (PR), and Doutor Ulysses (PR) showed a negative population growth rate, with oscillating population evolution rates. This event is partly explained by the location theories, as there is an isomorphic movement to the territorial reordering caused by the hierarchies of places, i.e., the population of “stagnant” municipalities moves to “attractive” municipalities, consisting of new agglomerations articulated due to new productive activities and interfere with population growth, a fact evidenced in the state average contingent.

Paranaguá (PR) concentrated 18% of the entire population of the Differentiated Mesoregion of Ribeira Valley/Guaraqueçaba, being the main growth center, as it is more economically dynamic, considering the data extracted from the economic dimension presented above.

		2005		2016		
	Municipality	Pop.	Part. % Meso.	Pop.	Part.% Meso.	Δ%
SP	Apiaí	27,551	3.3%	25,077	3.0%	-9%
	Barra do Chapéu	4,802	0.6%	5,619	0.7%	17%
	Barra do Turvo	8,724	1.1%	7,804	0.9%	-11%
	Cajati	32,724	3.9%	28,916	3.4%	-12%
	Cananéia	13,906	1.7%	12,606	1.5%	-9%
	Eldorado	14,769	1.8%	15,388	1.8%	4%
	Iguape	28,575	3.4%	30,519	3.6%	7%
	Ilha Comprida	9,177	1.1%	10,476	1.2%	14%
	Iporanga	4,529	0.5%	4,316	0.5%	-5%
	Itaoca	2,912	0.4%	3,339	0.4%	15%
	Itapirapuã Paulista	3,775	0.5%	4,161	0.5%	10%
	Itariri	14,869	1.8%	16,913	2.0%	14%
	Jacupiranga	18,676	2.3%	17,876	2.1%	-4%
	Juquiá	22,748	2.7%	19,274	2.3%	-15%
	Juquitiba	30,525	3.7%	30,837	3.7%	1%
	Miracatu	24,521	3.0%	20,409	2.4%	-17%
	Pariquera-Açu	20,459	2.5%	19,465	2.3%	-5%
	Pedro de Toledo	10,033	1.2%	11,053	1.3%	10%
	Registro	56,759	6.8%	56,356	6.7%	-1%
	Ribeira	3,151	0.4%	3,399	0.4%	8%
	São Lourenço da Serra	15,139	1.8%	15,323	1.8%	1%
	Sete Barras	14,458	1.7%	13,098	1.6%	-9%
	Tapiraí	10,347	1.2%	8,010	0.9%	-23%
PR	Adrianópolis	5,799	0.7%	6,293	0.7%	9%
	Antonina	20,492	2.5%	19,418	2.3%	-5%
	Bocaiúva do Sul	9,841	1.2%	12,320	1.5%	25%
	Campina Grande do Sul	44,103	5.3%	42,187	5.0%	-4%
	Cerro Azul	16,527	2.0%	17,821	2.1%	8%
	Guaraqueçaba	8,618	1.0%	7,944	0.9%	-8%
	Guaratuba	33,058	4.0%	35,588	4.2%	8%
	Itaperuçu	24,725	3.0%	27,131	3.2%	10%
	Matinhos	32,240	3.9%	33,024	3.9%	2%
	Morretes	16,616	2.0%	16,488	2.0%	-1%
	Paranaguá	144,797	17.5%	151,829	18.0%	5%
	Pontal do Paraná	18,158	2.2%	24,878	2.9%	37%
	Quatro Barras	20,017	2.4%	22,353	2.7%	12%
	Rio Branco do Sul	30,469	3.7%	32,369	3.8%	6%
	Tunas do Paraná	4,076	0.5%	7,767	0.9%	91%
	Doutor Ulysses	6,631	0.8%	5,794	0.7%	-13%

Table 4 — Differentiated Mesoregion of Ribeira Valley/Guaraqueçaba: population of municipalities and average annual variation rate – 2005 to 2016. Source: Research results based on data from IBGE (2020).

## CENTRALITY OF MUNICIPALITIES OF THE DIFFERENTIATED MESOREGION OF RIBEIRA VALLEY/GUARAQUEÇABA

In terms of centrality, the research results showed that Paranaguá (PR) was consolidated as a mesoregional center in the set of the Differentiated Mesoregion of Ribeira Valley/Guaraqueçaba. The



municipalities of Apiaí (SP), Cajati (SP), Iguape (SP), Ilha Comprida (SP), Registro (SP), Adrianópolis (PR), Antonina (PR), Campina Grande do Sul (PR), Guaratuba (PR), Itaperuçu (SP), Matinhos (PR), Paranaguá (PR), Pontal do Paraná (PR), and Rio Branco do Sul (PR) showed a high degree of centrality, indicating the existence of dynamic urban activities. Furthermore, a significant increase in the degree of centrality from 2005 to 2016 could be observed, as shown in Table 5. Among the set of municipalities, 24% migrated from low to high centrality; 21% from low to median; 5% from median to high; 8% maintained their centrality high; 3% had a loss of centrality, decreasing from high to median; and 39% of those that remained under a situation of inertia showed a low degree of centrality. However, all municipalities managed to increase their GDP, but in relative terms, despite the strong polarization of Paranaguá (PR), 53% of the municipalities expanded their centrality during the period, which demonstrates the strengthening of product generation in the urban continuum.

Municipality	CI degree	
	2005	2016
Apiaí (SP), Iguape (SP), Ilha Comprida (SP), Registro (SP), Adrianópolis (PR), Antonina (PR), Campina Grande do Sul (PR), Guaratuba (PR), Itaperuçu (PR).	Low	High
Jacupiranga (SP), Juquiá (SP), Juitituba (SP), Miracatu (SP), Pariqueira-Açu (SP), Sete Barras (SP), Cerro Azul (PR), Morretes (PR).	Low	Median
Matinhos (PR), Pontal do Paraná.	Median	High
Cajati (SP), Paranaguá (PR), Rio Branco do Sul (PR).	High	High
Cananéia (SP).	High	Median
Barra do Chapéu (SP), Barra do Turvo (SP), Eldorado (SP), Iporanga (SP), Itaoca (SP), Itapirapuã Paulista (SP), Itariri (SP), Pedro de Toledo (SP), Ribeira (SP), São Lourenço da Serra (SP), Tapiraí (SP), Bocaiúva do Sul (PR), Guaraqueçaba (PR), Tunas do Paraná (PR), Doutor Ulysses (PR).	Low	Low

Table 5 — Centrality Indicator (CI) of municipalities of the Differentiated Mesoregion of Ribeira Valley/Guaraqueçaba – 2005 to 2016. Source: Research results based on data from IBGE (2020a) and IPEADATA (2020).

In an attempt at alternatives that would contribute to the improvement of job and income generation in the Municipalities of the Mesoregion, Bianchini (2010) pointed out the performance of the Cooperativa de Crédito Solidário (CRESOL), which promotes the credit lines of the National Program for Strengthening Family Agriculture (PRONAF) for family farmers, the expansion of technical and extension assistance, professional training, and incentives for cooperatives and associations through institutional sales in the Family Farming Food Acquisition Program (PAA). These elements reinforce the strengthening of product generation.

## DISPARITIES IN THE SOCIO-ECONOMIC DEVELOPMENT OF THE DIFFERENTIATED MESOREGION OF RIBEIRA VALLEY/GUARAQUEÇABA – 2005 TO 2016

Intraregionally, the Firjan Municipal Development Index (IFDM) of the Differentiated Mesoregion of Ribeira Valley/Guaraqueçaba pointed to regular and moderate development, with the municipalities of Registro (SP) and São Lourenço da Serra (SP) emerging at a high development stage due to an improvement in the variables education and health.

However, the variable employment and income decreased, showing predominantly a low or regular development stage, except for Paranaguá (PR), being the most important generator of jobs in absolute terms.

The IFDM evolution showed that, as a whole, the social infrastructure has shown advances in the region, with improvements in access to education and health, moving from regular and moderate development levels to predominantly high development levels. Campos (2014) stated that investments in both health and education were significant, corresponding to the trend of constant evolution.

Interregionally, the IFDM of the municipalities of the Differentiated Mesoregion of Ribeira Valley/Guaraqueçaba, when compared to the IFDM of Brazil, showed a regular development for the variables education and health and a low development for the variables employment and income (FIRJAN, 2020).

Table 6 shows that the results had a significant convergence with the performance of socio-economic development indicators. In other words, all Municipalities of the Differentiated Mesoregion of Ribeira Valley/Guaraqueçaba converged in terms of development to the most dynamic even for those that had a low degree of centrality and oscillating GDP performance, with relevant variations, including those that lost participation.

State	Municipality	DI 2005	DI 2016	DI classification
SP	Apiaí	0.52	0.64	Convergent to the most dynamic
	Barra do Chapéu	0.36	0.60	Convergent to the most dynamic
	Barra do Turvo	0.64	0.62	Convergent to the most dynamic
	Cajati	0.60	0.59	Convergent to the most dynamic
	Cananéia	0.57	0.53	Convergent to the most dynamic
	Eldorado	0.48	0.62	Convergent to the most dynamic
	Iguape	0.59	0.61	Convergent to the most dynamic
	Ilha Comprida	0.66	0.59	Convergent to the most dynamic
	Iporanga	0.63	0.62	Convergent to the most dynamic
	Itaóca	0.53	0.57	Convergent to the most dynamic
	Itapirapuã Paulista	0.64	0.59	Convergent to the most dynamic
	Itariri	0.48	0.64	Convergent to the most dynamic
	Jacupiranga	0.57	0.56	Convergent to the most dynamic
	Juquiá	0.63	0.56	Convergent to the most dynamic
	Juquitiba	0.39	0.60	Convergent to the most dynamic
	Miracatu	0.52	0.61	Convergent to the most dynamic
	Pariquera-Açu	0.55	0.64	Convergent to the most dynamic
	Pedro de Toledo	0.46	0.51	Convergent to the most dynamic
	Registro	0.57	0.70	Convergent to the most dynamic
	Ribeira	0.44	0.63	Convergent to the most dynamic
	São Lourenço da Serra	0.63	0.71	Convergent to the most dynamic
PR	Sete Barras	0.68	0.50	Convergent to the most dynamic
	Tapiraí	0.69	0.60	Convergent to the most dynamic
	Adrianópolis	0.63	0.54	Convergent to the most dynamic
	Antonina	0.36	0.63	Convergent to the most dynamic
	Bocaiúva do Sul	0.35	0.35	Convergent to the most dynamic
	Campina Grande do Sul	0.37	0.65	Convergent to the most dynamic
	Cerro Azul	0.41	0.53	Convergent to the most dynamic
	Guaraqueçaba	0.44	0.63	Convergent to the most dynamic
	Guaratuba	0.41	0.57	Convergent to the most dynamic
	Itaperuçu	0.42	0.52	Convergent to the most dynamic
	Matinhos	0.37	0.50	Convergent to the most dynamic
	Morretes	0.41	0.57	Convergent to the most dynamic
	Paranaguá	0.53	0.51	Convergent to the most dynamic
	Pontal do Paraná	0.60	0.39	Convergent to the most dynamic
	Sete Barras	0.41	0.58	Convergent to the most dynamic
	Rio Branco do Sul	0.43	0.56	Convergent to the most dynamic
	Tunas do Paraná	0.63	0.49	Convergent to the most dynamic
	Doutor Ulysses	0.44	0.47	Convergent to the most dynamic

Table 6 — Disparity Indicator (DI) of municipalities of the Differentiated Mesoregion of Ribeira Valley/Guaraqueçaba – 2005 and 2016. Source: Research results based on data from IBGE (2020a) and IPEADATA (2020).

The research results contribute to the theories of Alfred Weber (1929), August Lösch (1954), Christaller (1933), and Von Thünen (1966), in which the location of productive activities, the centrality, and hierarchy of places are aligned, showing that certain municipalities are more attractive than others due to production factors and logistical elements. The results showed the urban productive activities as preponderant to the stimulus of new agglomerations and market areas. Furthermore, Ribeiro and Stamm (2019) demonstrated that an environment of economic stability, industrial policies, and availability of investment resources made a difference to strengthen the urban-industrial continuum in some regions of Brazil. In other words, in addition to territorial and urban elements, there are elements linked to public policies that can act to deconcentrate investments.

## CONCLUSION

This article aimed to analyze the profile of centrality and socio-economic development of municipalities that make up the Differentiated Mesoregion of Ribeira Valley/Guaraqueçaba. The analysis used Centrality and Regional Disparity indicators, which have socio-economic data as parameters. Thus, although Cajati (PR) and Paranaguá (PR) are central places, with a higher centrality index and proximity to the Metropolitan Region of Curitiba, it is a characterization based on the wealth generation concentrated in the secondary and tertiary sectors, low population density, and unequal diversification of productive activities.

The research results showed that sometimes the municipalities remained with the centrality on the rise, but sometimes it decreased, diagnosing a dynamic situation that reflects on the polarization in more contiguous regions although considering the central effect based on the location theories. In general, the municipalities also benefited from positive externalities of the spread of these centers, coexisting spaces that play an intense centrality and relevance, as well as economically and socially critical places, characterizing social and spatial disparity in the territory.

Furthermore, considering the heterogeneity of productive activities that generate wealth in the coastal and mountainous region of the Differentiated Mesoregion of Ribeira Valley/Guaraqueçaba, natural and cultural attractiveness potentials were appropriated by traditional communities as a raw material for tourism, an event that corroborated with the understanding by Christaller (1966), pointing to the demand of inhabitants for products and services in urban areas. Thus, the market area of the Mesoregion ranges from tourism products to extraction, transformation, and transport logistics activities.

The matter on municipal socio-economic development showed a convergence of municipalities to the most dynamic, which infers a positive convergence in terms of improvements in living conditions. However, the variables employment and income were the most fragile, that is, the polarization of Paranaguá (PR) and the strong concentration of extractive and transformation activities in Cajati (SP) demonstrate that initiatives focused on diversification and value addition in productive activities should be the focus of public policy actions in next years. Because a significant portion of the regional territory has strong tourist potential in the coastal and mountain areas, it is also necessary to reconcile the potential of tourism with activities that enhance and create a market for regional products.

## NOTES

1- This text is part of a study that had the support of the National Council for Scientific and Technological Development (CNPQ) through the Universal Notice.

2- The objective of the retropolation is to regulate the values of the old series to the new reference year, leading the series to present similar values over time (IBGE, 2020).

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## REFERENCES

- ANDRADE, A. M.; TATTO, N. Inventário cultural de quilombos do Vale do Ribeira. São Paulo: Instituto Socioambiental, 2013.
- BATISTA, R. A. W.; NERY, L. M.; MATUS, G. N.; SIMONETTI, V. C.; SILVA, D. C. C. Estimativa do fator de Erosividade do solo na região do Vale do Ribeira Paulista, Brasil. Formação (Online), vol. 28, nº 53, p. 441-460, 2021.
- BIANCHINI, V. A. O programa nacional de fortalecimento da agricultura familiar PRONAF e a

sustentabilidade da agricultura no Vale do Ribeira-Paraná. Tese de Doutorado do Programa de Pós-graduação em Meio Ambiente e Desenvolvimento da Universidade Federal do Paraná. Curitiba, 2010.

FERRERA DE LIMA, J.; BIDARRA, B. S. Concentração e desigualdade na Região Metropolitana de Curitiba. *URBE - Revista Brasileira de Gestão Urbana*, vol.11, p. 05-15, 2019. DOI: 10.1590/2175-3369.011.002.ao01.

CAMPOS, R. Dimensionamento do complexo soja no Estado do Paraná. Dissertação de mestrado Programa de Pós-Graduação em Desenvolvimento Econômico da Universidade Federal do Paraná. Curitiba, 2014.

CAPELLO, R. Regional economics in its 1950s: recent theoretical directions and future challenges. *The Annals of Regional Science*, vol. 42, nº 04, p.747-767, 2008.

CHRISTALLER, W. Central places in Southern Germany. New Jersey: Prentice-Hall, 1966.

COELHO, A. L. C. “Velha” geografia econômica da nova geografia econômica: Lösch frente aos demais antecedentes da modelagem. *Revista de Desenvolvimento Econômico*, vol.15, nº 27, p. 67-74, 2013.

COLLA, C.; BARBIERI, A.; AMARAL, P.V. O papel do mercado de trabalho na complementaridade entre a migração e a pendularidade na Região Metropolitana de Curitiba entre 2000 e 2010. *Informe GEPEC*, vol. 24, nº 02, p. 97-116, 2020.

DORNELLAS, E. D.; OLIVEIRA, A. G.; FAHAH JR., M. F. Análise do sistema orçamentário na priorização de políticas públicas “secundárias”: o caso de um município paranaense de pequeno porte. *Revista Brasileira de Gestão e Desenvolvimento Regional*, vol. 13, nº 1, p. 81-105, 2017.

FERRERA DE LIMA, J. A face obscura do desenvolvimento regional. In: SIEDENBERG, D.; LOCK, F. N.; LONDERO, J. C. *Desenvolvimento regional: discussões e reflexões*. Pelotas (RS): EdUFPEL, p. 207-224, 2011.

FERRERA DE LIMA, J. The Brazilian policy of regional development. Working Paper nº 02. Center for Regional Development (NDR). Toledo city: UNIOESTE, 2020. DOI: 10.13140/RG.2.2.16770.63682

FIRJAN. Federação das Indústrias do estado do Rio de Janeiro. Publicações FIRJAN: Pesquisas e Estudos Socioeconômicos, 2020. Disponível em: <http://publicacoes.firjan.org.br/>. Acesso em: 08 out. 2020.

FLORES, A. F.; MARINI, M. J. Capital social e governança local no contexto dos arranjos produtivos locais: um estudo bibliométrico. *Informe GEPEC*, vol. 22, nº 01, p. 83-99, 2018.

FRANÇA, A. M. Vale do Ribeira (SP): Proposições econômicas, sociais, políticas e ambientais para o crescimento e desenvolvimento sustentável dos municípios da região administrativa de Registro. Dissertação de Mestrado em Economia Política da Pontifícia Universidade Católica de São Paulo, PUC-SP. São Paulo, 2005.

FREITAS, L. B. A.; FERRERA DE LIMA, J. Desenvolvimento municipal nas mesorregiões diferenciadas da Amazônia ocidental. *Gestão & Regionalidade*, vol. 37, 2021.

GIL, A. C. Como elaborar projetos de pesquisa. São Paulo: Atlas, 2002.

HOUARD, J.; MARFOUK, A. Portrait socio-économique des régions européennes. In: BEINE, M.; DOCQUIER, F. (org.). *Croissance et convergence économiques des régions: théorie, faits et déterminants*. Bruxelles: De Boeck Université, p.19-53, 2000.

IBGE. Instituto Brasileiro de Geografia e Estatística. Estimativas Populacionais. Rio de Janeiro: IBGE, 2020a. Disponível em: <https://sidra.ibge.gov.br/>. Acesso em: 08 out. 2020.

IBGE. Instituto Brasileiro de Geografia e Estatística. Produto Interno Bruto. Rio de Janeiro: IBGE, 2020b. Disponível em: <https://sidra.ibge.gov.br/>. Acesso em: 08 outubro 2020.



- IPEADATA. Instituto de Pesquisa Econômicas Aplicadas. Dados população macrorregional. Brasil, 2020. Disponível em: <http://www.ipeadata.gov.br/Default.aspx> Acesso em: 28 agosto 2020.
- JOYAL, A. Do desenvolvimento regional ao desenvolvimento territorial: uma comparação Québec - Brasil (1960-2010). Informe GEPEC, vol. 23, edição especial, p. 191-209, 2019.
- LIMA, V. L. K.; PAULA, N. M. O programa de aquisição de alimentos no Vale do Ribeira: avanços sociais e fragilidades institucionais. Informe GEPEC, vol. 22, nº 02, p. 140-158, 2018.
- LÖSCH, A. The economics of location. New Haven: Yale University Press, 1954.
- MACEDO, F. C.; PORTO, L. Existe uma Política Nacional de Desenvolvimento Regional no Brasil? Revista Brasileira de Gestão e Desenvolvimento Regional, vol. 14, nº 2, p. 605-631, 2018.
- MANTOVANI, G. G.; RUTHS, J. C.; SOUZA, M. P. R. de; FERREIRA, R. L. A.; CARRELAN, R.; MATTEI, T. S.; CAMARGO, W. S. de. A dinâmica do desenvolvimento socioeconômico dos municípios da Faixa de Fronteira brasileira. In: FERRERA DE LIMA, J. (org.). Desenvolvimento regional fronteiriço no Brasil. Toledo, PR: Núcleo de Desenvolvimento Regional, p. 35-113. 2020.
- OLIVEIRA, N. M. Revisitando algumas teorias do desenvolvimento regional. Informe GEPEC, vol. 25, nº 01, p. 203-219, 2021.
- PERROUX, F. O conceito de pólo de desenvolvimento. In: SCHWARTZMAN, J. Economia Regional: textos escolhidos. Belo Horizonte: CEDEPLAR, 1977.
- RAIHER, A. P.; FERRERA DE LIMA, J.; OSTAPECHEN, L. A. P. Crescimento econômico regional no sul do Brasil. Revista de Economia e Agronegócio, vol. 15, nº 2, p. 224-249, 2017.
- RESENDE, G.; MONTEIRO NETO, A.; MAGALHÃES, J.; CO-ESTRELA.; SOUSA, A.; SILVA, D. Uma proposta de avaliação continuada dos instrumentos da Política Nacional de Desenvolvimento Regional (PNDR). In: RESENDE, G. (Org.) Avaliação de políticas públicas no Brasil: uma análise da Política Nacional de Desenvolvimento Regional (PNDR), v. 03. Brasília: IPEA, 2017.
- RIBEIRO, M. L.; BATISTA, A. M.; STADUTO, J. A. R. Determinantes do rendimento domiciliar per capita por UF brasileira, 2010. Revista Brasileira de Gestão e Desenvolvimento Regional, vol. 15, nº 6, p. 120-132, 2019.
- RIBEIRO, L. A.; STAMM, C. Indústria de transformação brasileira: um estudo das expectativas dos empresários e do investimento (2003-2017). Revista Brasileira de Gestão e Desenvolvimento Regional, vol. 15, nº 6, p. 93-105, 2019.
- ROCHA NETO, J. M.; BORGES, D. F. O problema da integração de programas governamentais de desenvolvimento regional: o caso do PROMESO. Desenvolvimento em Questão, vol. 12, nº 27, 2014.
- SILVA JÚNIOR, J. A. Desafios e perspectivas do programa territórios da cidadania: o caso do território da cidadania Vale do Ribeira, São Paulo, SP. Dissertação de Mestrado do Programa de Pós-graduação em Ciência Ambiental da Universidade de São Paulo. 181 f. São Paulo, 2015.
- STOFFEL, J.; RAMBO, A.; FREITAS, T. Escalas do desenvolvimento: análises a partir da PNDR e da política territorial no Brasil. Revista Brasileira de Gestão e Desenvolvimento Regional, vol. 15, nº 7, p. 85-98, 2019.
- STRASSBURG, U.; FERRERA DE LIMA, J.; OLIVEIRA, N. M. a Centralidade e o multiplicador do emprego: um estudo sobre a Região Metropolitana de Curitiba. URBE- Revista Brasileira de Gestão Urbana, vol. 6, nº 2, p. 218-235, 2014.
- TAYLOR, P. S. History and Geography: Braudel's 'extreme longue durée' as generics? In: LEE, R. (ed.) The longue Durée and world-system analysis. Albany, NY: Suny Press, 2012.
- TODESCO, C. Presença ausente e ausência presente do Estado na produção do espaço para o turismo no Vale do Ribeira paulista. Confins - Revue Franco-brésilienne de Géographie/Revista Franco Brasileira de Geografia, nº 9, 2010.

VON THÜNEN, J. H. The Isolated State. Oxford: Pergamon Press, 1966.

WEBER, A. Theory of the location of industries. Chicago: University of Chicago Press, 1929.