The influence of economic capacity and the formation of public revenues on human development

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The promotion of human development, related to the improvement of several socioeconomic dimensions, is influenced by public funding and economic circulation. Considering the importance of economic growth to human development, this study aims to identify the structural relations of Brazilian municipalities' economic profile and capacity, their tax revenue, financial transfers and municipal human development. A binomial logistic regression with panel data was used. The results pointed out the importance of the industrial and agricultural GDP, as well as the volume of intergovernmental transfers as a conditioning factor of municipal human development. On the other hand, the service sector presented a negative influence, although its importance must not be disregarded. This can be explained by the presence of this sector in all Brazilian municipalities, especially the smaller ones, which in most cases have low urban, social and economic infrastructure and, consequently, concentrate low added value to this sector.

Keywords: human development; public revenue; intergovernmental transfers; Industrial GDP.

A influência da capacidade econômica e da formação de receitas públicas no desenvolvimento humano

A promoção do desenvolvimento humano, relacionada com a melhoria de diversas dimensões socioeconômicas, sofre influência do financiamento público e da circulação econômica. Nesse contexto, e considerando a importância do crescimento econômico para o desenvolvimento humano, o presente estudo tem por objetivo identificar as relações estruturais entre capacidade e perfil econômicos, arrecadação própria, transferências financeiras e desenvolvimento humano. Foram utilizados dados em painel logístico binomial. Os resultados apontaram a importância do PIB dos setores industrial e agropecuário e o volume das transferências intergovernamentais como influenciadores do desenvolvimento humano. Por outro lado, o setor de serviços apresentou efeito negativo, embora não se possa desconsiderar sua importância. O fato pode ser explicado pela sua presença em todos os municípios brasileiros, principalmente naqueles de pequeno porte, que na maioria das vezes apresentam baixa infraestrutura urbana, social e econômica e, consequentemente, concentram baixo valor agregado nesse setor econômico.

Palavras-chave: desenvolvimento humano; receitas públicas; transferências intergovernamentais; PIB industrial.

La influencia de la capacidad económica y de formación de ingresos económicos en desarrollo humano

La promoción del desarrollo humano, relacionada a la mejora de diversas dimensiones socioeconómicas, sufre influencia del financiamiento público y de la circulación económica. En este contexto, teniendo en cuenta la importancia económica sobre el desarrollo humano, este artículo tiene el objetivo de identificar las relaciones estructurales entre las características económicas, propia capacidad de almacenamiento, las transferencias financieras y el desarrollo humano. Fue utilizado uno panel de datos, con la metodología logística binomial. Los resultados mostraron la importancia del PIB de los sectores industrial y agropecuario y el volumen de las transferencias intergubernamentales como influyentes del desarrollo humano. Por otro lado, el sector de servicio presentó un efecto negativo, aunque no se puede desconsiderar la importancia de este sector. Esto puede explicarse por su presencia en todos los municipios brasileños, principalmente en aquellos de pequeño porte que en la mayoría de las veces presentan baja infraestructura urbana, social y económica y, consecuentemente, concentran bajo valor agregado en este sector económico.

Palabras clave: desarrollo humano; los ingresos públicos; transferencias intergubernamentales; PIB industrial.

1. INTRODUCTION

Human development is a complex term, by essence. Besides involving different social dimensions, it is understood as a process of changes, interaction of the local economy and the population quality of life, considering the social, political and cultural conditions and allowing conditions of citizenship and democracy to the population (PNUD, s.d.; Cowen and Shenton, 1996; Buarque, 2008).

In this sense, there is a relation between economic capacity and development. Although, there is a discussion about the multidimensional process of human development involving health, education, food, among others (Sen, 2010), some authors argue about the economic capacity of the country to be a component in this development.

This argument is based on the ideas of classical economists, such as Adam Smith, David Ricardo, Thomas Malthus, and John Mill, who pointed out that improving living conditions by increasing the accumulation of wealth drives investments, consequently increasing the circulation of resources and favoring growth, considering, in this case, the widening of the labor division (Dallabrida, 2017). On the other hand, wealth that does not return to society, either by social investments or by improving the population's income, does not generate development (Bresser-Pereira, 2003).

In order for promoting social dimensions, it is necessary to articulate the State. The promotion of human development, in this case, depends on its action in the formulation and maintenance of public social policies capable of improving the population living conditions.

Thereby, it is was highlighted the division of common competences among federated entities, established in the Federal Constitution of 1988, in order to demarcate, optimize and improve the service of the population's demands. The municipality, due to its population proximity, has a greater capacity to verify its claims and to establish priorities in the attendance of several public policies. However, it should be pointed out that in many of them, municipal collection is insufficient to meet part of the social demand for public policies, creating a great dependence on intergovernmental transfers. This dependence is superior to what would be conventional in sharing common rights and obligations in the federative system.

A number of researches have sought to study the relationship between economic growth and human development (Raniz, Stewart and Ramirez, 2000; Suri et al., 2011; Constantini and Monni, 2008), as well as the relationship between public revenues and human development (Slack, 2007; Boadway, 2007; Mendes, Miranda and Cosio, 2008; Baião, 2013). These authors emphasized the importance of a thriving economic environment and an increase revenue for the human development process.

In general, it is considered the importance of the local economic performance and public resources application derived from the public revenues originated from public goods, tax collection and transfers among the federated entities in order to promote human development. It is noted that tax collection is related to the financial capacity of the municipality, as well as results from the local tax policy, whose greater municipal economic dynamics tends to improve the capacity of income formation within the municipalities.

From the relationships among economic capacity, human development and financial need to improve social conditions, the question is: how do the economic capacity of municipalities and the formation of revenues from municipal collection and intergovernmental transfers affect the level of

Brazilian municipalities development? Thus, this study aims to identify the structural relationships among capacity and economic profile, municipal collection, financial transfers and municipal human development.

This study advances the investigation of the economic and financial capacity of Brazilian municipalities, as well as the identification and relation of influence potential of these determinants on human development, covering all Brazilian municipalities, contributing to knowledge accumulation in the area. The results obtained allow us to understand how economic dynamics, considering the different sectors of the Brazilian economy, and the main sources of municipal public revenue formation interfere in the improvement of human development in the municipal level. These results become important as they contribute to the formation, maintenance and sustainability of fiscal and economic policies aimed at human development.

2. LITERATURE REVIEW

2.1 HUMAN DEVELOPMENT, ECONOMIC GROWTH AND PUBLIC BUDGET

Development is a polysemic concept, controversial and widely discussed in the Public Administration literature. Although it possesses distinct epistemologies, whereas some authors portray the social context, others highlight the economic context. Its genesis is related to what is discovered, novelty and what is modified in order to obtain improvements (Caiden and Caravantes, 1982).

Based on this perception, human development is a social perspective of development focusing on the promotion of human capacities, such as education, health, employment and income, among others. In 1990, as one of the first concepts of human development, the United Nations Program Development defined it as an increase in the possibility of a healthy, long and educated life (UNPD, 1990). According to Sen (2010), development consists in the expansion of society members´ freedom determined by social factors (health, education…), economic and civil rights.

This perspective does not eliminate the relevance of economic growth for the promotion of these capacities. For Sen (2010) and UNPD (1990), economic growth, when accompanied by income distribution, becomes an important mechanism for the promotion of human development, since it promotes an increase in population income and tax collection for the government, enabling it to apply such resources to social promotion. "Economic growth can help not only by raising private incomes but also in making it possible for the state to finance social insurance and active public intervention" (Sen, 2000:40).

According to Ranis, Stewart and Ramirez (2000), different levels of Gross Domestic Product (GDP) can generate different levels of human development, depending on how this economic production is located. In addition, the different economic sectors can generate diverse results for development, depending on the economic circulation and the volume of employment generated (Figueiredo, Barros and Guilhoto, 2005; Almeida, Silva and Angelo, 2013).

Thus, it could be considered that the GDP is not the only determinant of human development, but its growth, as well as the technological and industrial evolution can contribute to the promotion

of human development (Sen, 2010). In this case, it is important to emphasize the industrial process as a capital educator, regarding its ability to add value, use human capital and relate to other economic sectors in order to promote economic growth (Constantini and Monni, 2008).

Besides economy, other factors must be observed in promoting development. In Brazil, public policies for human development intervention are guaranteed by the State according to the Brazilian Federal Constitution of 1988, universalizing health care and basic education as State's duty promotion (Brazil, 1988).

The Constitution of 1988 aimed at meeting local needs and provided greater political and administrative autonomy to federated entities. Both in the implementation of social policies and in tax collection policies through a decentralized and democratic model of state (Kerbauy, 2001).

The predicted social guarantees may favor the interest of the population in the provision of public policies able to promote improvements in the quality of life and in local social development. Thus, they intensify the participation of the population in the formulation and monitoring of programs and projects of social interest, once attending social rights becomes an obligation of the State, as well as to insert the society in the formulation, implementation and monitoring process of public policies.

In order to attend this social guarantees increase and the decentralization of public policies, as proposed by the federal model, tax decentralization was also considered, regarding the easiness of tax collection and the use of goods rates and services, according to the characteristics and local necessities. The purpose of this decentralization was to promote the application of the funds collected in its origin, especially in education and health, which, for constitutional reasons, spend 25% and 15% of the collection, respectively. These two areas are precisely, according to the predominant literature (Sen, 2010), the central elements of development promotion.

Thus, the popular representative is in charge of managing public finances to achieve municipal expenditures that maximize social development (Scarpin and Slomski, 2007).

It is essential, for this, to articulate efforts through planning, organization and management of joint actions in the different social sectors, in order to seek a better use of available resources to meet effectively the demands of society (Teixeira and Paim, 2000).

The management of public resources is fundamental in the provision of public services that meet citizens' needs (Grzybovski and Hahn, 2006). However, an efficient fiscal policy is necessary, with an interaction between the budget policy, optimizing the application of resources according to the government's planning, and the tax policy, focused on the collection of financial resources (Soares, Gomes and Toledo Filho, 2011).

Tax collection derives from the available tax base (collection of tax so that no source of revenue falls outside public authority), the structure of existing taxes (level of taxation chosen for each tax) and fiscal effort (measure that captures the effort to collect all available tax revenue) (Moraes, 2006).

The Union expresses itself as the largest entity in tax collection, thus presenting tax centralization in the Federal Government. According to Prado (2007), the centralization of resources is a characteristic

of the federal states, which present higher revenue than the expenses at the highest levels of government, while the lower levels show a lower revenue than the real need for resources.

The management of resources must serve the functions of the State. The allocative function aims to correct market failures by providing public goods, such as health and education. The distributive function deals with income distribution and fairer fiscal policies for society. The stabilizing function guides the economy in the supply and demand equilibrium, labor market, trade balance and economic growth rate (Musgrave and Musgrave, 1980).

However, these functions are directly and indirectly influenced by the mechanisms of public revenue formation and by the design of Brazilian national federalism, which will be dealt in the next topic.

It is understood that the role of the State, aiming at human development, presupposes the flexibility of the municipality actions, as well as the maintenance and balance among rights and obligations within each entity competence.

2.2 THE FORMATION OF MUNICIPAL REVENUES FROM FISCAL FEDERALISM

The federal state supposes, besides establishing the entity`s own competences, complementary actions necessary to fulfill the role of the State in defending constitutional values and human promotion.

The centralization of revenues aimed at transferring resources to subnational governments to minimize the effects of vertical and horizontal fiscal imbalances, also known as vertical and horizontal gap, respectively. The vertical gap consists of the volume of tax revenue of federated entities less than the expenditure incurred, while the horizontal gap is related to the disparities of collection among the same levels of government, often related to economic inequalities.

Baião (2013), Massardi and Abrantes (2015) emphasize that the centralization and redistribution of part of the taxes are necessary to alleviate the inequalities of subnational governments. For Schroeder and Smoke (2003), the inequalities of collection and demand for public services among the federated units intensify the importance of revenues centralization, as well as their transference in the fiscal balance promotion, also in the correction of the main administrative deficiencies. According to Cossio (1995), tax centralization does not correspond to the tax system profile, but to the process of reducing interregional differences in the global burden, participation of the three levels of government and concentration of tax bases.

Lü (2015) considers transfers a relevant source of public policy funding. According to Shah (2007), in addition to the expenditures financed, these resources can promote incentives and accountability mechanisms, interfering with fiscal management, efficiency as well as, equity of public services, also correcting interregional socioeconomic inequalities (Shah, 2007; Massardi and Abrantes, 2015). In Boadway's view (2007), intergovernmental transfers translate into an important instrument to minimize the conflicts generated by the decentralization of revenues and expenditures to national objectives. According to Baião (2013), the purpose of the transfers is to benefit municipalities with a lower tax base and higher costs with social programs, searching quality equalization for provision of public services to society.

Shah (2007) classifies transfers into two distinct categories: general or unconditional, and specific or conditional purpose. According to this author, general-purpose transfers support the budget and intend to preserve local autonomy; they can be called block transfers when they are destined to a specific area, such as education. According to Shah (2007), transfers of specific purposes occur when they are intended to promote incentives to specific government programs, and may require results in the provision of services.

Mendes, Miranda and Cosio (2008), however, consider that the proposals to classify the transfers applied in other federal states need an adaptation for being used in the Brazilian context. From the categories proposed by Shah (2007), about the conditionality of the transfers plus the classification on their counterpart, a taxonomy of the Brazilian transfers has been established in box 1.

BOX 1 TAXONOMY OF BRAZILIAN INTERGOVERNMENTAL TRANSFERS

	Types	Description	Advantage	Disadvantage
Per Conditionality	Unconditional redistributive transfers	There is no link to a specific purpose, and its allocation criterion is determined by calculations on the local condition.	Greater autonomy	Smaller *accountability*
	Unconditional devolutive transfers	There is no binding for any specific purpose, and your appeal returns to the pickup location.		
	Voluntary conditional transfers	It has specific linkage. It is used in special and / or emergency situations determined by the local government.	Greater flexibility for application	Lower government autonomy and less *accountability*
	Mandatory conditional transfers	Used to improve social indicators and reduce socioeconomic inequalities between regions.	Greater *accountability*	Lower autonomy
Per Counterpart	Transfers to the private productive sector	Promote private enterprise in areas of government strategy, either to promote development or to meet some local demand.	Flexibility in the distribution of resources	Subject to political interference
	Without counterpart	There is no local government counterpart requirement.	Greater autonomy	Smaller *accountability*
	With counterpart	Participation of federal and local resources in programs.	Decrease in local government costs	Flexibility depends on the nature of the transfer
	Equalization transfers	Transfers to make up local government spending on federal programs when local resources are not sufficient to meet this need.	Transfers more resources to poorer areas	Reduces the autonomy of collection

Source: Adapted from Mendes, Miranda and Cosio (2008).

Among the transfers performed in Brazil, it is possible to highlight the unconditional devolutions (share of the Tax on the Circulation of Goods and Services and the Tax on the Ownership of Motor Vehicles — ICMS and IPVA, respectively). The compensatory ones (the Kandir Law and the Tax on Industrialized Products of Import — IPI). The unconditional redistributive (the State and Municipal Participation Funds — FPE and FPM, respectively) and compulsory conditional ones (the transfers of the Unified Health System and the Fund for Maintenance and Development of Education Basic and Valuation of Education Professionals - SUS and Fundeb, respectively) (Prado, 2007; Baião, 2013).

The unconditional devolutive transfers are intended to return the tax collection of competence of the State or the Union to the collection origin, such as ICMS and IPVA. The unconditional redistributive transfers consider factors to calculate their values, as it happens with the FPM and FPE, with the purpose of promoting the horizontal equalization among the subnational organs. According to Silva, Fagundes and Pereira (2007), the participation funds follow the economic and demographic dynamics of the locality, factors considered for its calculation.

Mandatory conditional transfers are intended for application in social programs to improve their indicators, such as Fundeb and SUS. Fundeb, created in December 2006 by Constitutional Amendment 53 since 2007 by Law 11,494/2007 and Decree 6,253/2007, replacing the Fund for Maintenance and Development of Elementary Education and Valorization of Teaching (Fundef). The objective is to create a state fund, based on a resource complement of the Union, which is distributed to the municipalities (according to the number of registrations executed) to improve the quality of Brazilian public education, applied mainly in the development of teaching (Brazil, 2006, 2007a, 2007b).

SUS funding is provided by the Federal Constitution of 1988 and by Law 8.080/1990, which regulates it. The Union transfer has the purpose of promoting the quality of public health in Brazil and the demographic profile and epidemiological characteristics of the region, health network characteristics, health service performance, health participation in budgets, five-year investment forecast and refund of services provided by other spheres of government (Brazil, 1990).

Thus, the composition of available income is relevant in social conditions, since part of the transfers is destined to the fulfillment of social policies.

3. METHODOLOGICAL PROCEDURES

Secondary data were used for the analysis. The dependent variable was available by the Federation of Industries of Rio de Janeiro State (Firjan), and the data referring to the municipal budget collected in the National Treasury was available from the Brazilian Finance database (Finbra). Another data used was GDP, collected on the website of the Brazilian Institute of Geography and Statistics (IBGE).

The empirical unit of analysis was the Brazilian municipalities from 2007 to 2013. This period was chosen due to the availability of data for all municipalities from 2006 to 2015. Reliable values were presented only for the period from 2007 to 2013. It was also considered in this period, the beginning of a state and federal political cycle, as well as the complete municipal political cycle,

besides two previous years and a later year, enabling the capture of the variations given by the electoral period.

In order to reach the proposed objective, the statistical model of logistic regression of panel data was used. This panel data methodology consists of analyzing data for different individuals over time. According to Fávero (2015) the possibility of understanding the variation of phenomena in individuals and in time is an advantage. Due to the increase in the number of observations, the reduction of problems with endogeneity and multicollinearity is also considered, besides the increase of freedom degree and efficiency in the analysis, as well as the reduction of biases that could result if *cross-section* models were used (Cameron and Trivedi, 2009; Gujarati and Porter, 2011).

For Fávero (2015), this type of regression is recommended when data vary among individuals over time, but the dependent variable has binary qualitative values. The dependent variable consists of the Firjan Municipal Development Index (IFDM), an indicator prepared by Firjan and covering health, education and income, divided into a scale ranging from 0 to 1; the closer to 1, the better the development. Given this proportion of the IFDM, the scale is divided into four levels: low (0 to 0.400), regular (0.400 to 0.600), moderate (0.600 to 0.800) and high development (above 0.800) (Firjan, 2014).

The Skewness and Kurtosis test was used to test the normality of the dependent variable. However, the continuous format IFDM did not present a normal distribution, not taking into account the assumption for linear regressions. Thus, the IFDM was used in its subdivision by its own categories and the binary logistic model was applied in panel data. The value 0 was adopted for the IFDM below 0.600, considering the low and regular development levels, and value 1 above 0.600 in moderate and high development level.

The logistic model of panel data can be described, in its basic form, by Expression 1.

$$chance_{IFDM_{it}=1} = \alpha_i + \beta_1.ln\,(X_{1it}) + \beta_2.\,ln\,(X_{2it}) + ... + \beta_k.\,ln\,(X_{kit}) \qquad (1)$$

Where in:

$IFDM_{it}$ is a human development proxy for each of the municipalities i in year t;

α_1 is the model constant for each municipality i;

B_K is the angular coefficient of each variable to be estimated

X_{kit} is the matrix of dependent variables for each municipality i and for year t, described in box 2; and ln is the indication that the variables were estimated considering their value in natural logarithm.

The sample was chosen by statistical tests. In this research, the Chow F test was used to verify the choice between the fixed effects model and the Pooled OLS, according to the null hypothesis, the fixed effects data model is the most adequate. Then, the Hausman test was used to verify the choice between the fixed effect and the random model, in which the null hypothesis considers the random models more adequate. Finally, the Breush and Pagan test was performed to verify the choice between the random effects model and the Pooled OLS, with null hypothesis considering the most adequate Pooled OLS.

BOX 2   **VARIABLES TO BE USED**

Variable	Theoretical base	Description	Data Source	Expec.
GDP Industry *per capita*	Silva (2009); Costa and collaborators (2012); Suri and collaborators (2011); Ranis, Stewart and Ramirez (2000)*	Ratio of the total value of GDP produced by the industrial sector of the municipality, at R$ 1.00, by the population forecast by IBGE.	IBGE (n.d.)	+
GDP Services *per capita*	Silva (2009); Costa and collaborators (2012); Suri and collaborators (2011); Ranis, Stewart and Ramirez (2000)*	Ratio of the total value of GDP produced by the services sector of the municipality, at R$ 1.00, by the population forecast by IBGE.	IBGE (n.d.)	+
Agricultural GDP *per capita*	Silva (2009); Costa and collaborators (2012); Suri and collaborators (2011); Ranis, Stewart and Ramirez (2000)	Ratio of the total value of GDP produced by the agricultural sector of the municipality, at R$ 1.00, by the population forecast by IBGE.	IBGE (n.d.)	+
Municipal collection *per capita* IPTU	Massardi and Abrantes (2015)	Ratio of the total amount collected from the Property Tax and Urban Territorial Tax, IPTU, by R$ 1.00, by the number of the population predicted by IBGE.	National treasure (2013)	+
Municipal collection *per capita* ITBI	Massardi and Abrantes (2015)	Ratio of the total amount collected from the Tax on Transmission of Inter alive Goods, ITBI, in R$ 1.00, by the number of the population foreseen by IBGE.	National treasure (2013)	+
Municipal collection *per capita* ISSQN	Massardi and Abrantes (2015)	Ratio of the total amount collected from the Tax on Services of any kind, ISSQN, at R$ 1.00, by the number of the population planned by IBGE.	National treasure (2013)	+
Rates *per capita*	Massardi and Abrantes (2015)	Ratio of the total value of municipal taxes, in R$ 1.00, by the number of the population predicted by IBGE for the same year of the amount collected.	National treasure (2013)	+
Transfers Union *per capita*	Shah (2007); Baião (2013); Mendes, Miranda and Cosio (2008)	Ratio of the total amount of resources transferred by the Union to the municipalities, in R$ 1.00, by the number of the population predicted by IBGE.	National treasure (2013)	-
State Transfers *per capita*	Shah (2007); Baião (2013); Mendes, Miranda and Cosio (2008)	Reason for the total value of resources transferred by the State to which the municipality belongs, at R$ 1.00, by the number of the population predicted by IBGE.	National treasure (2013)	-

Source: Elaborated by the authors.

After the choice of the model, we verified the heteroskedasticity by the Wald test and the autocorrelation by the Wooldridge test. The validation of the model was performed by the Wald chi²-squared test. Natural logarithm was used for the variables, considering the magnitude of the financial values for each individual. This strategy aims to reduce this magnitude in order to estimate the regression. In addition, we took up the deflator for the accounts of IPTU, ITBI, ISSQN, Fees, Transfers Union and Transfers States in 2014 in order to equalize the accounts.

4 RESULTS AND DISCUSSIONS

4.1 DATA DESCRIPTIONS

The descriptive data analysis can be seen in table 1. In comparison to the averages, the municipal tax values (IPTU, ITBI, ISSQN and Taxes) represent a variation of data within the whole sample.

For IPTU, these values consist of predominantly rural municipalities, most of which are in the North and Northeast of Brazil, regions where the average IPTU values are below the national average. For per capita values, this variation approached zero. The same occurred with the ITBI values, related to the sale of real estate. For ISSQN and Taxes, which represent the dynamics of the region's economy, the municipalities presented low economic capacity, which affects the collection of these taxes.

This regional disparity can also be seen in the analysis of the GDP by sectors. The minimum near zero can be result of the existence of municipalities with more prominence in a given sector and absence of market participation in other sectors.

To correct these disparities that affect public collection, per capita transfers from the State and the Union seek to prioritize smaller municipalities with low economic capacity and revenue generation. In this way, it is justified the nonexistence of municipalities with zero transfers, considering that they are foreseen in the Constitution, which is why all Brazilian municipalities are beneficiaries of this type of revenue. However, in the Brazilian federative system, as in other countries, the maintenance of criteria to differentiate the volume of revenues justifies the breadth of the distribution of transfers observed in table 1.

TABLE 1   DESCRIPTIVE ANALYSIS OF DATA

Variable		Mean	Standard deviation	Minimun	Maximun	Observations
IPTU	Overall	29.43	71.79	3.32×10^{-5}	2373.66	34863
	Between		66.14	8.42×10^{-4}	1730.85	5491
	Within		22.64	-361.65	1937.92	7*

Continue

Variable		Mean	Standard deviation	Minimun	Maximun	Observations
ITBI	Overall	18.88	31.02	2.08×10^{-6}	1364.23	34863
	Between		25.58	2.62×10^{-4}	497.15	5491
	Within		17.27	-221.98	1157.38	7*
ISSQN	Overall	72.83	180.32	1.17×10^{-3}	18342.64	34863
	Between		131.65	0.05	2781.98	5491
	Within		123.69	-2694.52	15633.48	7*
Taxas	Overall	14.96	24.31	7.90×10^{-5}	1162.64	34863
	Between		28.48	2.36×10^{-3}	270.78	5491
	Within		12.40	-154.49	1004.77	7*
Transfers Union	Overall	1204.972	933.81	16.48	96144.48	34863
	Between		767.94	182.00	14583.83	5491
	Within		522.33	-12616.78	82765.62	7*
State Transfers	Overall	568.690	623.83	0.32	33076.57	34863
	Between		555.44	22.43	10171.96	5491
	Within		284.29	-4152.62	28645.74	7*
GDP Agriculture	Overall	3.43	7.06	6.42×10^{-5}	231.40	34863
	Between		6.51	2.97×10^{-4}	180.41	5491
	Within		2.42	-82.96	94.66	7*
GDP Industry	Overall	13.24	150.71	8.89×10^{-5}	8986.14	34863
	Between		143.74	8.83×10^{-4}	8595.26	5491
	Within		19.88	-903.98	793.36	7*
GDP Services	Overall	26.87	573.83	3.48×10^{-3}	48506.54	34863
	Between		539.18	7.73×10^{-3}	38783.62	5491
	Within		100.33	-8961.28	9749.79	7*

Source: Survey data.
Notes: * Unbalanced panel.

The values of income also showed a greater standard deviation between the years, compared to the group of municipalities, indicating less heterogeneity among them. Whereas in years, it was possible to see a greater dispersion of observations, that is, a greater variation of data in relation to the average over the years.

4.2 THE MUNICIPAL ECONOMIC AND FINANCIAL ROLE FOR HUMAN DEVELOPMENT

The Wald test rejected the null hypothesis of homoscedasticity absence, as well as the Wooldridge test, which also rejected the null hypothesis of autocorrelation absence. In order to correct these situations, bootstrap error correction was used in the estimated model.

The Breusch-Pagan test showed preference for the random effects model in relation to the Pool model, whereas the Hausman test pointed to the fixed effects model, preferable to the random model, both at the 5% level. In this way, the fixed effects model for logistic panel was estimated. The low/regular level was taken as model reference, which was statistically validated by the Wald chi² test at the 5% level.

As can be seen in table 2, all variables included in the model were statistically significant at the 1% level. The results show that the GDPs of the sectors had a positive relationship with human development, except for the services sector.

TABLE 2   MODEL STATISTICS

Variables	Coeficient	Odd Ratio	Default error	z	P>|z|
GDP Agriculture	0.349	1.418	0.088	3.950	0.000
GDP Industry	0.935	2.548	0.101	9.280	0.000
GDP Services	-0.983	0.374	0.098	-9.980	0.000
IPTU	0.115	1.121	0.043	2.690	0.007
ITBI	0.147	1.158	0.040	3.700	0.000
ISSQN	0.233	1.263	0.055	4.220	0.000
Taxes	0.164	1.178	0.044	3.730	0.000
Union transfers	4.305	74.129	0.480	8.970	0.000
State transfers	2.490	12.070	1.976	12.600	0.000

Source: Research Data.
Notes: reference = low level and regular development; number of observations = 11,092; number of groups = 1,689; Wald chi² = 1,061.24; Probability chi² = 0.000; Log likelihood = -3.272,603.

According to Ranis, Stewart and Ramirez (2000) and Suri and collaborators (2011), economic growth, measured by GDP, directly affects the improvement of health conditions and education of society, raising the level of human development. This improvement is attributed to the demands of the labor market for greater intellectual capital. In addition, the greater economic volume tends to generate better levels of employment and income for the families enabling them to invest on better health, education, housing and other social improvements. In this case, it is necessary that public management creates the conditions to increase the economic volume.

The industrial size, measured by the GDP industry, was extremely relevant for human development. According to Constantini and Monni (2008), industrialization increases the technological volume

and improves the living conditions of the population. In addition, the industrial, technological and creative environment enhances the generation of specialized human capital, helps economic growth and encourages the generation of employment (Sen, 2010; Constatini and Monni, 2008).

The industrial concentration occurs mainly in large urban centers, which corroborates the positive result of this sector, considering the easy access to health services and education.

On the other hand, service GDP was the only variable applied to the model that presented a negative effect on the growth of human development. However, the influence of the services sector on human development cannot be considered negative, but rather the dependence applied on this particular sector, due to the low value added generated and the low technological volume applied. In addition, this sector is present in all Brazilian municipalities, including small municipalities with little urban, social and economic infrastructure.

Since in the period from 2010 to 2013 only 34 municipalities corresponded to more than 50% of the GDP of services (Coordination of National Accounts, 2015), the great concentration of the GDP of this sector in a small number of municipalities is considered. In addition, the service sector may have been negatively influenced by industry (Ranis, Stewart and Ramirez, 2008). Furthermore, changes in the industrial environment or absence of industries near the municipality may influence this negative value.

On the other hand, the positive value of the agricultural sector shows its historical and economic importance, pointing out the important role of Brazilian agriculture in the international scenario, as well as the high technology applied in the production process. This result corroborates the work of Figueiredo, Barros and Guilhoto (2005), the authors identified the influence of the agricultural sector on the economic growth of Mato Grosso, reflecting in exchange gains for the country. However, it is a sector of small economic impact in Brazil, mainly by product trade, which usually occurs *in natura*, without processing and not adding value to the products.

Regarding the company's own revenues, the ISSQN (municipal tax of services) was the most relevant tax due to its urban base and its relation with the economic capacity, as well as size of the municipality. Intergovernmental transfers were more relevant, especially those transferred by the Union. This fact can be justified by its distribution base linked to population ranges and by its representativeness in the municipality budget revenue, especially those of small size. This representation is corroborated by Cossio (1995), who points out this redistribution of resources to minimize regional differences and to meet the financial needs of municipalities.

The results found for intergovernmental transfers contradicted those of Massardi and Abrantes (2015), Baião (2013) and Slack (2007). These authors found that the higher volume of per capita transfer generated greater dependence and lower level of human development. However, these results were in agreement with the findings of Shah (2007), Boadway (2007) and Lü (2015), who pointed out the importance of intergovernmental revenues for the control of municipal public accounts and the promotion of better social conditions.

Regarding the results, it is possible to notice that the municipal economic capacity has relevance in the human development, mainly the industrial sector. This situation is due not only to the economic and financial capacity of the municipalities, but also to the various social interferences, such as better health conditions, education, employment and income for families.

5 FINAL CONSIDERATIONS

In order to fulfill its constitutional precepts and to promote human development, the State needs financial resources to create and maintain public social policies, as well as highlight municipal economic dynamics.

Thus, for evaluating the relationship between municipal revenues and economic profile, the economic importance of the industrial sector for human development stands out. This sector is characterized as an aggregator of economic volume, besides generating the improvement of social conditions. Agriculture and livestock sectors are important due to the prominence gained in promoting human development. This relationship owes to the Brazilian historical context, as well as the technology employed and the productive capacity of this sector.

It is worth mentioning that both industry and agriculture need a favorable context and work environment, with infrastructure for the production flow, health services for workers, improvement of the working life quality and reduction of turnover, as well as specialized labor to attend to the diverse business activities and to the creation and operation of technologies to increase productivity.

In this sense, the industrial and agricultural sectors require the public sector to improve the quality of education, health and infrastructure. In contrast, they offer more employment and greater volume of taxes collected.

On the other hand, the economic capacity of the services sector presented negative relation. However, the role of the service sector should not be considered as negative, but rather analyze the economic dependence of the Brazilian municipalities on this sector, considering that municipalities with low economic volume have strong dependence on the services and low capacity to generate added value in the work.

Regarding the financial aspect, it is noted that the formation of public revenue is fundamental for the improvement of human development. Intergovernmental transfers play a greater role due to the greater financial volume available. It is considered that many of these transfers have specific destinations, such as transfers from SUS (universal health care) and Fundeb (educational funding), aiming to maintain social programs for public health and basic education, respectively.

Although it is not the central object of this research, the high relevance of transfer resources on human development may indicate financial dependence of these resources, which may suggest an economic and social fragility of the municipality. Some elements, such as fiscal revaluation, economic stimulus and better supervision, are important to ensure full payment of the taxes.

However, the availability of resources is relevant to human development, it is necessary to take into account the need for their good applicability. It is worth highlighting the performance of public management, especially in fulfilling its role of generating income for investment and the improvement of social conditions. Thus, it is relevant for future studies to analyze the importance of public management in human development generation, regarding the collection and public expenditure aspects. In addition, considering the different influences of the economic sectors on human development, it is also suggested to identify and evaluate, for each sector, the factors that influence the process of promoting human development, among Brazilian regions and states.

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