



The Dynamic Nature of Employment and Income in the Legal Amazon: Highly Skilled and Leadership Occupations

OCTOBER 2021
NO. 15

This is the fourth in a series of four notes reporting the results of the study entitled The Dynamic Nature of Employment and Income in the Legal Amazon developed under the Amazônia 2030 project (AMZ 2030). The study deepens the discussion on the economic vitality of the Legal Amazon, based on the identification of occupations and sectors that have contributed the most to employment and income generation in the region in the recent period (2012-2019). The paper uses data from the Continuous National Household Sample Survey (*Pesquisa Nacional por Amostra de Domicílios Contínua* - PNAD *Contínua*) conducted by the Brazilian Institute of Geography and Statistics (*Instituto Brasileiro de Geografia e Estatística* - IBGE) and continues the research on the dynamics of the Labor Market in the Legal Amazon, the first in the series of AMZ 2030 publications. This note presents the results of the study of both high skilled occupations and occupations in which professionals play a leadership role.

The main results of the analysis of the evolution of occupations that require higher skills and a leadership role in the region show: (i) a significant reduction in employment in these occupations, especially for scientists and engineers, and company directors and managers; and (ii) that this decrease in employment has been particularly pronounced for young workers (aged 18 to 29). These results illustrate the low capacity of the Legal Amazon to attract and retain talent.

Table 1 shows a characterization of employment growth for highly skilled and leadership occupations. The following occupations were selected for the analysis: administrators and analysts; scientists and engineers; company directors and managers. The Table also provides disaggregated information such as income, number of people employed and degree of employment formalization, among others.

In the period 2012-2019, employment in highly skilled and leadership occupations fell by 23.2% in the Legal Amazon, accounting for the loss of 152,901 jobs. Total employment in the region, in turn, increased by 5.3% in the same period. This discrepancy is a strong indicator of the inability to attract and retain talent in the Legal Amazon. In 2012, highly skilled and leadership occupations¹ accounted for 6.5% of the total 10 million occupations in the region. In 2019, this percentage fell to 4.8% from the total 10.6 million occupations in the Legal Amazon.

Although in 2019 the average income of workers employed in highly skilled and leadership occupations was much higher than the average income from work in the region as a whole (R\$ 4,461 and R\$ 1,692, respectively), the average income variation in these occupations was also found to be lower than the average income variation in the Legal Amazon. Among highly skilled and leadership occupations, while the average income grew by a scant 0.6% between 2012 and 2019, the Amazon region recorded a 3.4% growth over the same period.

Significant differences were also found in the formalization rate. This rate (66.4%) was 25.8 percentage points higher for professionals holding highly skilled and leadership positions in the region in 2019, when compared to the low formalization rate in the region as a whole.

Table 1. Characterization of employment for highly skilled and leadership occupations, Legal Amazon, 2012-2019

	2012-2019 Variation			2019			
	Total Empl.	Empl. (%)	Income (%)	Total Empl.	Income (R\$)	Formal (%)	Private (%)
Total	537,822	5.3	3.4	10,632,195	1,692	40.6	84.2
Total highly skilled and leadership occupations	-152,901	-23.2	0.6	507,539	4,461	66.4	85.3
Highly skilled and leadership occupations							
Administrators and analysts	17,236	31.0	-15.9	72,856	5,132	77.5	77.1
Scientists and engineers	-59,432	-25.8	16.2	170,971	3,814	65.7	83.0
Directors and managers	-110,705	-29.6	-4.1	263,712	4,694	64.9	88.1

Source: *Amazônia 2030* based on data from IBGE's Quarterly Continuous PNAD.

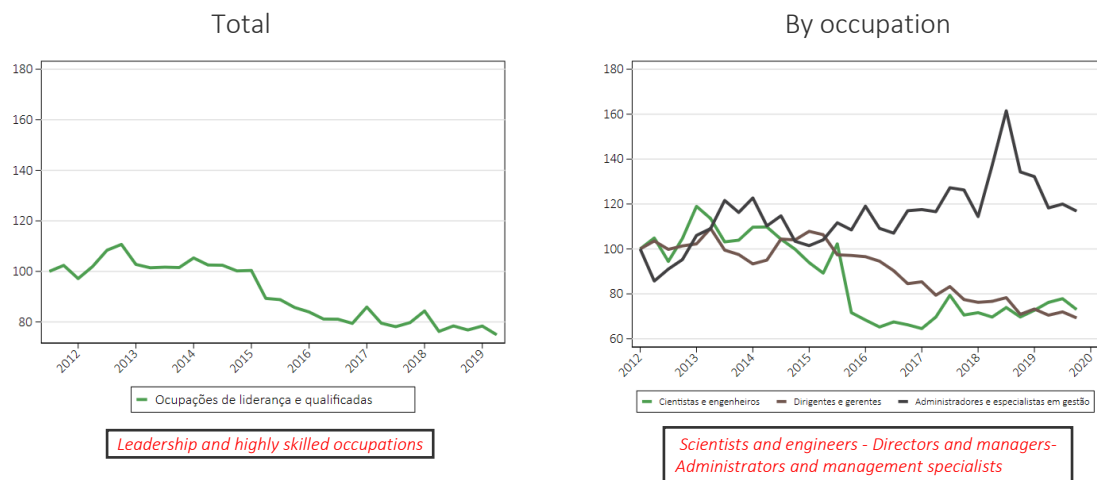
The breakdown presented in Table 1 for the three groups of occupations shows that growth was recorded in the administrator and analyst category alone, with a 31% increase between

¹ The vast majority of workers employed in the selected categories lived in urban households in 2019 (98.5% of administrators and management specialists, 94.2% of scientists and engineers, and 92.9% of directors and managers were in cities).

2012 and 2019. The average income of the category, however, recorded the largest decrease among the occupations analyzed by dropping 15.9% in the same period. Yet, it was the occupation with the highest income, averaging R\$ 5,132 in 2019, and the highest formalization rate, with only 22.5% of workers in the informal market. Company directors and managers, on the other hand, experienced the biggest fall in employment, with a reduction of 29.6% between 2012 and 2019, representing the loss of 110,705 jobs. The category's income, in turn, fell 4.1% in the same period. Despite the 25.8% decrease in employment for scientists and engineers, this was the only category to experience an increase in income of 16.2% between 2012 and 2019.

Highly skilled and leadership occupations had a negative variation in the period under analysis. This variation, however, was different for each group of occupation, as shown in Figure 1. Between 2012 and 2019, quarterly variations in the total number of people employed in highly skilled and leadership occupations, normalized by the initial quarter and by occupation, depict the relative evolution of these occupations over time. With the exception of administrators and management specialists, for whom the variation was positive, all the other occupations recorded a negative variation in the period 2012-2019.

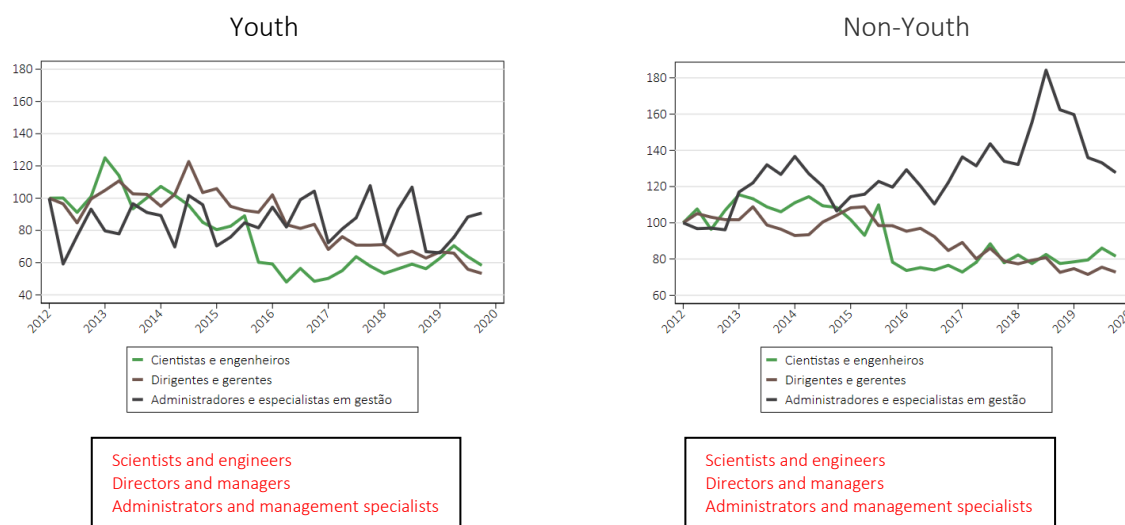
Figure 1. Evolution of employment in highly skilled and leadership occupations - total and by selected occupations, Legal Amazon, 2012-2019



Source: Amazônia 2030 based on data from IBGE's Quarterly Continuous PNAD.

Figure 2 shows the evolution of employment in highly skilled and leadership occupations among youth (aged 18-29) and non-youth (30 years and older). Between 2012 and 2019, the fall in employment was much more pronounced for youth than for the population 30 years and older. The analysis by occupation also reveals an even more disheartening trend among 18-29 year-olds, with a reduction in employment for the three groups of occupation, including administrators and management specialists.

Figure 2. Evolution of employment in highly skilled and leadership occupations for youth (aged 18-29) and non-youth (30 years and older) by selected occupation, Legal Amazon, 2012-2019



Source: Amazônia 2030 based on data from IBGE's Quarterly Continuous PNAD.

Table 2 presents a more detailed characterization of employment growth for highly skilled and leadership occupations among youth and non-youth. The young population held only 21.2% of the jobs in positions requiring higher skills and a leadership role in the Legal Amazon in 2019. Employment for this segment of the population, however, fell by 34% in the period 2012-2019, accounting for the loss of 51,965 jobs. Among people aged 18 to 29, not even the occupation of administrator and management specialist had a positive employment variation between 2012 and 2019. The largest declines in employment were found among directors and managers (36.5%) and scientists and engineers (34.9%). As expected, the average income of youth in highly skilled and leadership occupations was also lower than that of non-youth. Youth earned, on average, 48,5% less than non-youth (30 years and older) in the same occupations.

Among non-youth, the pattern of employment and income variation was very similar to that found for the Legal Amazon as a whole. The most significant difference was related to employment variation for administrators and management specialists, which recorded a 42.7% increase among people 30 years and older between 2012 and 2019. In the region as a whole, employment for administrators and management specialists grew 31% over the same period.

Table 2. Characterization of employment for highly skilled and leadership occupations for youth (aged 18-29) and non-youth (30 years or older), Legal Amazon, 2012-2019

	2012-2019 variation			2019			
	Total Empl.	Empl. (%)	Income (%)	Total Empl.	Income (R\$)	Formal (%)	Private (%)
Youth (aged 18-29)							
Administrators and management specialists	-348	-2.4	-21.1	14,120	2,670	74.4	87.0
Scientists and engineers	-28,614	-34.9	10.3	53,378	2,217	57.9	90.1
Directors and managers	-23,003	-36.5	1.4	40,029	2,945	63.6	93.2
Non-youth (30 years and older)							
Administrators and management specialists	17,583	42.7	-19.1	58,736	5,726	78.2	74.1
Scientists and engineers	-30,818	-20.8	14.0	117,593	4,544	69.4	79.5
Directors and managers	-87,703	-28.2	-5.5	223,683	5,002	65.2	87.2

Source: *Amazônia 2030* based on data from IBGE's Quarterly Continuous PNAD.

Authors

Gustavo Gonzaga

Pontifical Catholic University of Rio de Janeiro (PUC-Rio)
gonzaga@econ.puc-rio.br

Francisco Cavalcanti

Pontifical Catholic University of Rio de Janeiro (PUC-Rio)

Flávia Alfenas

Pontifical Catholic University of Rio de Janeiro (PUC-Rio)

This study is funded by Instituto Clima e Sociedade (ICS).

The study benefited from comments and suggestions by Beto Veríssimo, Juliano Asunção, Paulo Barreto, Alexandre Mansur and other participants in the online meetings of the Amazônia 2030 project, whom we thank. The data and opinions expressed in this paper are the responsibility of the authors and do not necessarily reflect the opinion of the funders of this study.

Suggested Citation

Gonzaga, Gustavo, Francisco Cavalcanti, and Flávia Alfenas. The Dynamic Nature of Employment and Income in the Legal Amazon: Highly Skilled and Leadership Occupations. Amazônia 2030, 2021.

About Amazônia 2030

The **Amazônia 2030** is an initiative of Brazilian researchers to develop a sustainable development plan for the Brazilian Amazon. Our goal is for the region to be able to reach a higher level of economic and human development and achieve the sustainable use of natural resources in 2030.

Press Office

O Mundo que Queremos (The World We Want)
amazonia2030@omundoquequeremos.com.br

Contact

contato@amazonia2030.org.br

Partner institutions

