Unemployment, household arrangements, and socioeconomic inequalities in Brazil

Desempleo, arreglos domésticos y desigualdades socioeconómicas en Brasil

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Abstract

This article examines the role of households in the distribution of unemployment risks in Brazil. We analyze several indicators that summarize the entry into the labor market across different household arrangements and descriptive statistics calculated for each position within these arrangements. We then use a logistic regression model to calculate the likelihood of open or potential unemployment. For women, living with children correlates with a greater likelihood of open or potential unemployment, while the opposite is true for men due to the unequal distribution of family responsibilities. The likelihood of open or potential unemployment is higher for people living with elderly people. Finally, the level of household income has a greater effect on women than on men, possibly due to the female transition from inactivity to employment in households with fewer resources.

Resumen

Este artículo investiga el papel de los hogares en la distribución de los riesgos de desempleo en Brasil. Analizamos varios indicadores que resumen la participación en el mercado laboral a partir de diferentes arreglos de hogar, así como estadísticas descriptivas calculadas para cada papel en estos arreglos. A continuación, un modelo de regresión logística calcula la probabilidad de desempleo abierto o potencial. Para las mujeres, vivir con hijos se correlaciona con una mayor probabilidad de desempleo abierto o potencial, mientras que entre los hombres ocurre lo contrario, debido a la distribución desigual de las responsabilidades familiares. La probabilidad

de desempleo abierto o potencial es mayor entre hombres y mujeres que viven con personas mayores. Por último, el nivel de ingresos del hogar afecta en mayor medida a las mujeres que a los hombres, posiblemente debido a la transición femenina desde la inactividad hacia la inserción laboral en hogares con menos recursos.

Introduction

Open unemployment rates are among the most used statistics in labor market research. On the one hand, they provide information on the labor absorption capacity to measure economic cycles. On the other hand, they identify a segment of the population who are involuntarily deprived of the primary source of resources in capitalist societies. The likelihood of experiencing unemployment varies within the workforce, as well as the subsequent material impacts and opportunities for professional reintegration. In other words, unemployment is a socially stratified phenomenon.

In household surveys, the open unemployment rate is based on the individual. This makes sense when we consider the individualization process of workforce sale, which has shaped the formation of labor markets. However, the workers' conditions of existence and economic decisions cannot be dissociated from the relations of solidarity and authority within domestic units. Even though urbanization and industrialization have transformed kinship relationships, reshaping family ties and economic life (Arriagada, 1998; Farrell, Vandevusse & Ocobock, 2012), family units have maintained important roles in modern societies, such as managing consumption, regulating sexuality, primary socialization, and engaging in care activities.

To some degree, the "success" of looking for a job relies on the presence and quality of interpersonal networks, among which are family-centered. We may examine the influence of family and affinity relationships in the access to information and opportunities (Guimarães, 2017; Lin, 2000); the household division of productive and reproductive activities, which allows some individuals to invest time and resources in searching for work (Goldani, 2002; Guiginsky & Wajnman, 2019); the intergenerational transmission of occupational opportunities (Xavier & Neves, 2012; Ribeiro & Carvalhaes, 2020); and the families' protective role during unemployment by the informal circulation of goods and services (Bendassoli et al., 2015).

Among the different forms of living within the same household and sharing resources, the family relationship is often the subject of studies on welfare inequalities in capitalist societies. Economic participation is commonly mediated through the individual's participation in a rights and obligations system, as this involvement defines the responsibilities of workers and the activities demanded or encouraged by family members. Families combine with the State and the market in the allocation of resources, playing an important role in shaping expectations and providing material and emotional support. This is particularly relevant in countries such as Brazil, with a limited public socialization of unemployment risks (Guimarães et al., 2010; Menezes, 2021).

This article investigates the role of households in the distribution of unemployment risks, focusing on the Brazilian case. The study addresses the trends over the last decade, a period that captures three moments of the Brazilian economy: stability and economic growth until the first quarter of 2014; economic recession between the second quarter of 2014 and the fourth quarter of 2016; and a slow economic recovery between 2017 and 2019.

The remainder of the text is divided into four sections. The first section analyzes the indicators that summarize the characteristics associated with labor market participation across different household arrangements. The second section details the descriptive statistics calculated for each position within these arrangements, considering the unequal labor market entry patterns. The third section presents the results of a logistic regression with binomial distribution of the dependent variable. The goal here is to calculate the likelihood of an individual being openly unemployed or part of the potential workforce (therefore without paid employment but with a certain adherence to the labor market), considering the characteristics of household arrangements. Finally, the fourth and concluding section summarizes the most important contributions of the article.
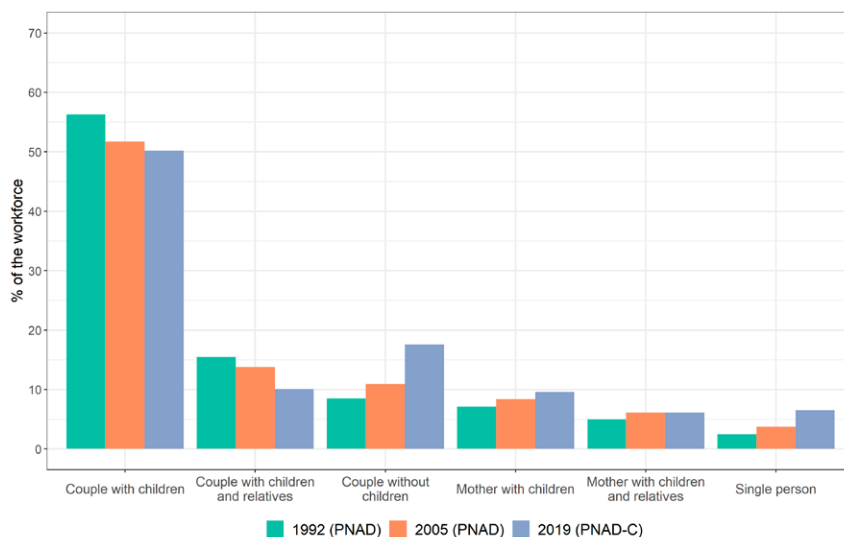
Household arrangements and labor market dynamics

When devoted to understanding family life, studies that rely on sample or census data often analyze household arrangements, as they have well-defined boundaries with easily measurable characteristics. Furthermore, living in the same household entails more than simply sharing the same roof. By forming domestic units, individuals share rights and obligations associated with income generation, consumption, and distri-

bution of resources, as well as productive and reproductive roles (Araújo, 2017; Wallace, 2002).

We chose to focus on the household family, i.e., arrangements formed by individuals united by kinship ties in the same residence. These arrangements are impacted by demographic trends, which define the size and composition of the population, as well as by socioeconomic and cultural incentives, which affect interpersonal relationship patterns (Cunha, Wajnman & Turra, 2018). Figure 1 shows the proportion of the workforce living in each household arrangement model in tandem with the typology devised by Hasenbalg (2003).[1] The National Household Sample Survey (PNAD) and the Continuous National Household Sample Survey (PNAD-C) provide the data. In 1992, these types comprised 95 % of the workforce, a rate that remained stable in 2005 and dropped to 92.1 % in 2019.[2] The calculation of the proportion of the workforce is justified by the need to determine the socialization and resource-sharing environments experienced by the active population.[3]

Figure 1. Proportion of the workforce by type of household in Brazil (1992-2019).

Source: Microdata from PNAD (1992 and 2005) and PNAD-C (2019). Own calculations.

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1   The exclusion of other types of household arrangements, such as those composed by a father with children, is due to their low prominence in the Brazilian population.

2   Methodological changes between the PNAD and the PNAD-C warrant further attention when comparing results.

3   Absent household arrangements comprise non-families and other household family models, such as cohabiting siblings and grandchildren living only with their grandparents.

The most significant change in the series was the reduction in the proportion of the workforce living in households comprised of couples with children, mainly due to the drop in the fertility rate. On the other hand, there has been a significant rise in the proportion of couples without children. This category includes couples who never had children and couples with non-resident children. This model was propelled by the emergence of new patterns of family relationships, wherein fertility is delayed or not perceived as a natural consequence of marriage, and by the increase in life expectancy, with more elderly individuals living far from their children.[4] Single-mother families had increased in previous decades, a trend that persisted between 1992 and 2005, particularly in the nuclear family model. Among the contributing factors to this scenario are higher divorce rates, fertility outside of marriage, and the gradual integration of women into the labor market (Cavenaghi & Alves, 2018; Minamiguchi, 2017). While the proportion of the workforce living in single-person households also increased during this period, they still represented a small number of individuals in 2019 (6.5 % of the workforce).

Household arrangements are units of coexistence and interdependence, translating into a family's life cycle, interpersonal relationship patterns, and available resources. To address these characteristics, Table 1 presents four indicators organized by types of household arrangement.

The youth dependency ratio (ratio between the population aged 0 to 14 years and the working-age population) and the old-age dependency ratio (ratio between the population aged 65 years and over and the working-age population) compose the total dependency ratio. This indicator informs the financial and care burdens shouldered by the working-age population, in addition to expressing, in the case of the elderly, the prospect of accessing social security resources at home. The demographic dependency ratio has some distortions, as not all working-age individuals are employed, while at the same time, some people aged 60 or over can work (Jacinto & Ribeiro, 2015). This is especially true in countries with high open unemployment rates, demanding a more detailed analysis of the financial burden imposed on employed individuals (Brito, 2018). To deal with this shortcoming, Table 1 presents the economic dependency rate. This indicator shows how many inactive individuals, children under

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4   In the case of Figure 1, the first experience is the most relevant, as the data refers to the workforce.

14 years of age, and unemployed depend on paid workers (Dieese, 2012).[5] In turn, household income per capita is a measure commonly used in studies on living conditions and wellbeing, as resources tend to be distributed among household members, structuring their access to goods and services (Hoffman, 2000). Lastly, the aggregate unemployment rate for each household arrangement model includes the heads of households and their relatives aged between 18 and 59 years old, revealing the conditions for labor market participation (Montali, 2012).

Table 1. Selected indicators by types of households in Brazil (2019).

	Couple with children	Couple with children and relatives	Couple without children	Mother with children	Mother with children and relatives	Single person
Per capita household income, in minimum wages (%)						
0 to ½	31.9	35.8	13.9	40.5	40.4	11.3
More than ½ until 1	28.1	33	26.9	25.7	32.4	26.7
More than 1 until 2	24.1	22.2	31.2	21.4	20.2	27.5
More than 2 until 3	7.5	5	11.5	6	4	12.8
More than 3 until 5	4.8	2.7	8.3	3.8	2.1	10.3
More than 5	3.7	1.2	8.3	2.6	0.8	11.3
Demographic dependency						
Youth dependency ratio	0.39	0.34	0.03	0.33	0.38	-
Elderly dependency ratio	0.04	0.14	0.35	0.1	0.16	-
Total dependency ratio	0.43	0.48	0.38	0.43	0.54	-
Aggregate unemployment rate (%)	10.3	13.6	8.1	16.8	18.5	7.5
Economic dependency ratio	1.18	1.49	0.93	1.48	1.79	-

Source: Microdata from PNAD-C (2019). Own calculations.

Household income per capita correlates with the demographic dependency ratio. The indicator is higher for single-person households (34.4 % with per capita income above 2 minimum wages), as income from work is not shared among dependent individuals. Couples without children rank second (28.1 %) since the presence of children is not very expressive, represented by grandsons and granddaughters. Couples with children (16 %) and mothers with children (12.4 %) configure a distinct household pattern where household arrangements have only two generations. In turn,

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5   Non-employed people may make use of other means of survival, via financial reserves and public benefits, which have become especially relevant since the 1990s. However, the measure informs the degree that individuals are integrated into the labor market, by calculating the balance between the economically dependent population and the adults responsible for the domestic livelihood.

couples with children and relatives (8.9 %) and mothers with children and relatives (6.9 %) encompass children and elderly people, and intergenerational households face a higher risk of socioeconomic vulnerability.

The aggregate unemployment rate is higher in single-mother families with or without relatives. This is because *i*) the unemployment rate is higher among women than among men; *ii*) single-mother families are overrepresented among people experiencing poverty (Maia et al., 2015; Raiher, 2016), forcing their members, particularly those with lower educational levels, to enter the workforce without prior planning, and *iii*) especially in the beginning stage of a family life cycle, those responsible for the household are more likely to be overloaded when trying to balance productive and reproductive work, hindering their capacity to allocate time and resources in the pursuit of employment and professional qualification.

The presence of children correlates with a rise in the aggregate unemployment rate due to the combination of high youth unemployment rates and a higher reservation wage on the part of secondary income providers. This phenomenon contributes to a higher unemployment rate in extended family households. Conversely, single-person arrangements have a lower unemployment rate since they consist solely of household heads. In this case, it is also worth noting the presence of retired individuals, a situation in which unemployment is supplanted by inactivity, and young people at the beginning of their professional careers who have become financially independent.

According to the patterns in the aggregate unemployment rate and the demographic dependency ratio, the economic dependency ratio prevails in the "mother with children and relatives" arrangement. This is followed by "mother with children" and "couple with children and relatives" arrangements, which have almost identical levels of economic dependence: the first is more heavily affected by the aggregate unemployment rate, while the second is by demographic dependence. On the other hand, the household arrangements "couple with children" and "couple without children" combine low unemployment with a smaller number of dependent individuals.

Akin to occupational differentiation and traditional modes of labor market participation, the family context affects the economic participation of individuals insofar as the worker is incorporated within a unit of social

reproduction. The data analyzed in this topic depict the contexts in which individuals live, share resources, and engage in interdependent relationships. Despite the historical decline in demographic dependence, the presence of children in poor families warrants reflections on the effects of household composition in the job search and the recent increase in the number of elderly people in households. Furthermore, the decline in the proportion of the workforce living in households composed of couples with children has been complemented by further diversification of households, with an increase in arrangements made up of couples without children, single-mother families, and single-person households. Single-mother families occupy the most vulnerable socioeconomic position, due to the stratification of the labor market (which is to the disadvantage of women and young workers) and household problems, such as lower per capita income and the risk of work overload in reproductive labor. Although economic dependence is high in the "mother with children and relatives" arrangement, intergenerational support plays a significant role for impoverished families to socialize the burden of risks. This is especially true when grandmothers care for the grandchildren, thus allowing mothers to enter the labor market (Vitale, 2015).

In short, unemployment reflects not only the individual capacity to enter the labor market but also *i*) the division of paid labor within the household; *ii*) the formation patterns of domestic units; and *iii*) the life cycle of families. Regarding point *i*, we draw attention to the lower aggregate unemployment rate in households comprised of only one individual or a couple. At the same time, secondary income providers are more frequent in extended family household arrangements. These have a higher reservation wage and, therefore, tend to remain unemployed longer (Menezes-Filho & Picchetti, 2000; Menezes & Cunha, 2013), which increases the aggregate indicator. One complementary hypothesis is that dividing domestic burdens in extended intergenerational households through wages and pensions affects the likelihood of unemployment. Point *ii*, conversely, manifests itself in the low unemployment rate of single-person households. Many young people form domestic units and start living alone. Still, upon losing their jobs, they return to their parents' house in a kind of pendular movement, as discussed in Menezes (2022). Unemployment is not only an indicator that is affected by the type of household arrangement, but it also affects, albeit non-deterministically, family relationships (Caleiras, 2015). Lastly, point *iii* explains the difference in the aggregate unemployment rate between "couples without chil-

dren" and "couples with children". As shown by the old-age dependency ratio, the first model tends to comprise older individuals whose unemployment rates are lower due to the combination of stable careers and high inactivity. In contrast, the second arrangement consists of working-age couples more susceptible to unemployment.

Household arrangements and labor market dynamics

Household arrangements are essential for professional insertion strategies insofar as they underpin the transfer of time and monetary resources among individuals (Bilac, 2014; Jatobá, 1994). However, if household families represent the means through which individuals make decisions and mobilize resources, the family life experience depends on one's position in kinship networks.

Gender operates as a binary classification system that organizes the expected behaviors of men and women (Conway, Bourque & Scott, 2000). This system reproduces patterns of sexual division of labor, which simultaneously divide (discriminating male and female spheres) and hierarchize (unequally valuing) activities and occupations intended for men and women (Hirata & Kergoat, 2007). In turn, the generation concept informs the age categories from family lineage (Motta & Weller, 2010). On a macro level, generations may be understood as age cohorts, while on a more circumscribed scale, they configure descending family lines, which organize and classify a rights and obligations system among relatives (Goldani, 2004).

Table 2 complexifies the aggregate unemployment rates. By focusing on individuals aged between 18 and 59, Table 2 shows the inactivity and unemployment rates of household heads, their spouses, and sons and daughters[6] by survey year and type of household arrangement. The concept of "household head" may be interpreted differently by the individuals who have answered the PNAD-C questionnaire. This concept generally means greater responsibilities regarding income and/or financial subsistence. Its purpose is to provide a point of reference for kinship relationships.

Not surprisingly, spouses and children are more likely to be inactive insofar as these tend to be secondary income providers. Among the first group,

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6   This category includes children and stepchildren.

the indicator decreased in the three types of arrangements formed by couples. One hypothesis is that this tendency, combined with increased female economic participation,[7] has been a conspicuous phenomenon in Brazil since the 1970s, with the need to supplement domestic income given the rising unemployment rates among household heads. In the case of sons and daughters, the variation in inactivity was irrelevant.

Table 2. Inactivity and unemployment rates, by family role and type of household arrangement in Brazil (2013-2019).

	Inactivity (% of the population)			Unemployment (% of the workforce)		
	2013	2016	2019	2013	2016	2019
Couple with children						
Head of the household	12.3	13.9	17.9	3.4	6.5	7.3
Spouse	35.5	31.2	24.7	6	8	7.5
Children	26.5	27.4	25.9	12.8	21.6	21.4
Couple with children and relatives						
Householder	19.7	22.1	24.6	3.3	7.1	7.4
Spouse	40.8	38.1	31.2	5.6	7.9	7.1
Children	26.2	26	26.6	12.6	21.8	20.2
Couple without children						
Head of the household	15.1	16	18.8	3.2	6.6	7.5
Spouse	34.2	29.4	25.6	6.3	8.2	7.9
Mother with children						
Head of the household	24.6	23.1	23.6	7.5	10.1	12.4
Children	25.3	24.8	24.8	14.2	22.2	21
Mother with children and relatives						
Head of the household	35.1	34.8	31.7	6.7	9.5	13.1
Children	24.3	25	24.2	12.6	20.7	20.9
Single person						
Head of the household	17.1	16.5	17.3	4.2	7	7.5

Source: Microdata from PNAD-C (2013-2019). Own calculations.

Although similar across all household types, the inactivity rate of sons and daughters is slightly lower in single-parent arrangements, partly due to the need for young people to contribute to the livelihood of households (Brito, 2018). In turn, spouses and household heads tend to be more inactive, respectively, in the "couple with children and relatives" and "mother with children and relatives" arrangements. In the case of single-mother families, the phenomenon combines the high inactivity rate registered

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7   In Brazil, in 2019, women accounted for 64.4 % of individuals classified as spouses.

among women, childcare overload, and sharing household income with other adult individuals since a good part of these arrangements rely on support networks (Fontes, 2014; Maia et al., 2015).

In fact, Table 2 demonstrates that living with relatives "outside" the nuclear family increases the inactivity rate. When these relatives are children (for example, grandchildren who live with their grandmothers), the phenomenon could be attributed to the intensification of reproductive work. In the case of co-residence with elderly individuals, care activities are accompanied by access to social security and social assistance resources, which subsidize intergenerational transfers and cushion the financial burden on households (Debert, Guimarães & Hirata, 2020; Leone, Maia & Baltar, 2010).

The unemployment rate is higher among single-mother families. This phenomenon intersects individual and family experiences, such as the typical employment trajectories among women, the socioeconomic characteristics of household arrangements, and the struggle to reconcile productive and reproductive work (Montali & Lima, 2014). While women heading single-parent families experienced a rise in unemployment between 2016 and 2019, the rate remained fairly static in other arrangements. Women and less-skilled workers worsened their relative position during the economic recovery, which helps to explain this phenomenon (Menezes, 2022). Another point of attention is the high unemployment rate among sons and daughters, surpassing 1/5 of the workforce in some arrangements. Young individuals at the beginning of their careers are usually more vulnerable to layoffs, which, combined with their condition of secondary income provider, prolongs their work search (Menezes & Cunha, 2013). Unemployed young people also postpone leaving their parents' house, enjoying some sort of financial safeguard under challenging times (Morais & Rego, 2017). As for spouses and sons or daughters, the unemployment rate is not vastly different from other types of arrangements.

Household arrangements experience cycles of emergence and dissolution depending on nuptiality, fertility, and interpersonal relationship patterns (Barquero & Trejos. 2004). These cycles summarize the amount of available work and the material needs of the household (Retamoso, 2002). Further research could be conducted to determine if individuals with different roles and distinct family life cycles have varying levels of labor market participation.

Table 3 uses a typology developed by Arriagada (2004) to show, by gender and across different stages of family life, the rates of inactivity, unemployment, and inactivity due to reproductive work. The typology includes five categories, which encompassed 77.9 % of the Brazilian workforce in 2019: *i*) young couples without children correspond to couples who have not had children in which the woman is under 40 years of age; *ii*) the starting family stage refers to couples with children aged 5 years or less; *iii*) the family expansion or growth cycle, which includes couples with children aged between 6 and 12 years, regardless of the age of the youngest child; *iv*) the consolidation and departure stage, for couples who have children aged 13 or over, and *v*) the "empty nest", referring to childless couples in which the woman is aged 40 years or more. The typology has been constructed based on living with children, as they require a greater commitment to reproductive work (Arriagada, 2004).[8]

Table 3. Rates of inactivity, unemployment, and inactivity by reproductive work, by family life cycle, and sex in Brazil (2013-2019).

	Inactivity (%)			Unemployment (%)			Inactivity by reproductive work (%)		
	2013	2016	2019	2013	2016	2019	2013	2016	2019
Men									
Young couple without children	4.5	3.8	4	2.9	5	5.3	-	1	1.9
Constitution	4	3.2	3.9	3.5	6.2	4.5	-	6.9	4.6
Expansion or growth cycle	6.1	5	5	3.2	5.8	5.2	-	2.1	2.9
Consolidation and departure	20.7	20.5	21.4	2.8	5.5	5.1	-	2.5	2.7
Empty nest	45.5	45.2	45.6	2.5	5.1	4.9	-	1.7	3.3
Women									
Young couple without children	24.9	22.1	18.7	9	12.8	12.9	-	13.5	12.1
Constitution	44.1	40.4	37.3	9.8	12	13.8	-	61.5	62.6
Expansion or growth cycle	39.3	36.1	33.3	7.7	11.3	11.3	-	52.4	48.5
Consolidation and departure	46.8	45.7	43	5	7.3	9	-	39.2	35.6
Empty nest	65.5	63.5	62.5	3.4	5.7	6.2	-	20.5	20.3

Note 1: The denominator of the unemployment rate is the labor force; the denominator of the inactivity rate is the working-age population; and the denominator of the inactivity rate for reproductive work is the group of individuals who did not look for work in the reference period, but who would like to work.

Note 2: The question on the reason for not looking for work was changed in the fourth quarter of 2015. Thus, we chose to present data on inactivity due to reproductive work from 2016 onwards.

Source: Microdata from PNAD-C (2013-2019). Own calculations.

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8   The typology's focus on couples is a limitation, as it excludes single-parent families. On the other hand, the typology is useful insofar as it enables a comparison between men and women in each family cycle.

Inactivity is much higher among women than men in all family cycles. Despite advances in women's economic participation, this difference persisted in the interim. In the case of women, the indicator is especially high among couples with young children at home, while men show the reverse trend. Guiginsky and Wajnman (2019) calculated the effects of fatherhood and motherhood on the odds of economic activity, focusing on household heads and spouses aged between 25 and 49 years. The study revealed that the odds of inactivity increase with motherhood (especially with school-age children) and decrease with fatherhood. Maron and Meulders (2008) also noted the inverse effect of fatherhood and motherhood on economic participation, which led them to discuss the distribution of time and resources among men and women. Other studies have emphasized the negative effects of motherhood on female economic activity (Scorzafave & Menezes-Filho, 2001; Souza, Rios-Neto & Queiroz, 2011).

The data reflects the different domestic burdens assumed by men and women. Fatherhood usually results in an increase in financial responsibilities. Motherhood, on the other hand, is associated with an overload of reproductive work, which increases with the number of children, particularly of preschool age. The impact of motherhood on economic participation is structured by the socialization of reproductive labor through public policies (Cipollone, Patacchini & Vallanti, 2013). The low provision of public care services in Brazil impedes female economic participation, harming income generation (Moreno, 2019).

The life cycle of families does not have a significant impact on the male unemployment rate. However, the indicator is lower among men who live in the "empty nest" type, which encompasses older individuals. Female unemployment was higher among women who do not have children or have small children. In addition to the factors associated with the age of these female workers, who tend to be younger,[9] Table 3 possibly captures two additional factors that may lead to prolonged periods of unemployment: increased reservation wage due to the absence of children and the difficulty of reconciling productive and reproductive activities by female workers with small children. Comparable evidence has been discussed in the national and international literature (Grzenda, 2019; Oliveira, Scorzafave & Pazello, 2009).

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9   In 2019, female household heads and spouses in the "young couple without children" type were, on average, 29.7 years old; and 29.3 years in the "starting family" type. In the subsequent types, the average ages were, in the order shown in Table 3, 34.4 years, 47.9 years, and 59.2 years old.

Inactivity is a heterogeneous experience, and many individuals, although classified as inactive, have some "marginal connection" with the labor market (Gray, Heath & Hunter, 2005). This experience unveils a gray area between unemployment and inactivity, revealing the limitations of the category of searching work as a means of describing one's expectations of access to resources.

Many factors play a role in a person's decision not to seek employment, especially how much time, resources, and opportunities they have. Reproductive work can hinder or prevent individuals from engaging in paid activities. Therefore, the family life cycle is a crucial factor that affects job search conditions and the boundary between inactivity and unemployment (Boswell, Zimmerman & Swider, 2012; Leaker, 2009). To calculate involuntary inactivity due to reproductive work, the proportions shown in Table 3 have as a numerator the number of spouses or household heads who did not look for work because they had to care for the household and/or dependent relatives and as a denominator the number of spouses or household heads who did not look for a job, but who wished to work in the reference week. Although the family classification is based on the presence of children, care can also be directed to elderly individuals, an activity usually taken on by women (Camarano, 2014).

Inactivity due to reproductive work is almost inexistent among men but affects a significant number of women who are involuntarily inactive. Reproductive work overload is also more intense among women with young children due to the State's deficient provision of public daycare centers. This responsibility is compounded by domestic tasks, and many women, including those who wish to participate in the labor market, must reconcile paid and unpaid activities (Sorj, 2014). Seeking employment requires the management of limited time and scarce resources, and in the traditional family division of labor, reproductive activities escalate these costs, causing women to become inactive.

Individuals, household arrangements, and the labor market: gender-based inequalities

Although the open unemployment category encompasses important aspects of family life, it excludes some significant experiences due to the restrictive combination between looking for work and availability to work. For example, some individuals may not look for work because they negatively assess their odds of success. In turn, women may abandon

their job search because they are overloaded with reproductive work at home. Using a broader category allows us to grasp the difficulties of professional insertion, which may or may not be accompanied by actively seeking work.

In addition to open unemployment, there are those individuals who did not look for work in the reference month but would like to have a paid occupation and individuals who looked for work in the reference month but were not available for work in the reference week. These last two groups represent the potential workforce, which, together with the workforce, comprise the expanded workforce. The sum between open unemployment and the potential workforce (which we hereby call, for the sake of simplicity, open or potential unemployment) combines the absence of paid occupations with some degree of adhesion to the labor market.

Open or potential unemployment operates as the dependent variable in a binomial logistic regression model, tailored separately to men and women. This separation aims to verify whether the explanatory variables, especially those related to family life, exert distinct effects on each gender. Among the explanatory variables, the first group of indicators refers to the characteristics of the workforce (education, race, and age bracket). A second set of indicators covers the characteristics of household families (position in the household, natural log of the household net income per capita, co-residence with children, and co-residence with elderly individuals). A third group, which serves as a control variable, informs the location of the household (state and housing area, whether urban or rural).

Household net income per capita is the household income, excluding the individual's own income, divided by the number of residents in the household. This indicator represents the level of material support the family would access if the individual were not employed (Fernandes & Picchetti, 1999), as well as the amount of resources available to individuals during their work search. In turn, co-residence with children was operationalized from a categorical variable with 6 response options, inspired by Guiginsky and Wajnman's proposal (2019): *i*) household arrangements with children aged between 0 and 6 years; *ii*) arrangements with two or more children aged between 0 and 6 years; *iii*) arrangements without children in the initial age bracket, but with children aged between 7 and 12 years; *iv*) arrangements without children in the initial age bracket, but with two or more children aged between 7 and 12 years; *v*) arrangements

with children aged between 13 and 17 years, but without children in the previous age brackets, and *vi*) arrangements without children or young people, a reference category in the regression model. Identifying elderly people in the household has only two response options, contrasting households with elderly people and households without elderly people. To identify the existence of children and elderly people in the households, we considered only individuals with some family bond to the head of the household.

The regression model, which considers the complex sampling design of the PNAD-C, calculates the probability of individual *i* being openly or potentially unemployed. We limited the sample to the expanded workforce in 2019, aged between 18 and 59 years old, and who comprise household families. Complementing the explanatory variables, ε constitutes the error term of the regression model:

$$ln\left(\frac{P_i}{1-P_i}\right) = \beta_0 + \beta_1 Schooling_i + \beta_2 Race_i + \beta_3 Age_i + \beta_4 Family\_role_i +$$

$$\beta_5 Household\_Arrangement_i + \beta_6 Elderly_i + \beta_7 ln\_rdpc_i + \beta_8 State_i + \beta_9 Area_i + \varepsilon_i$$
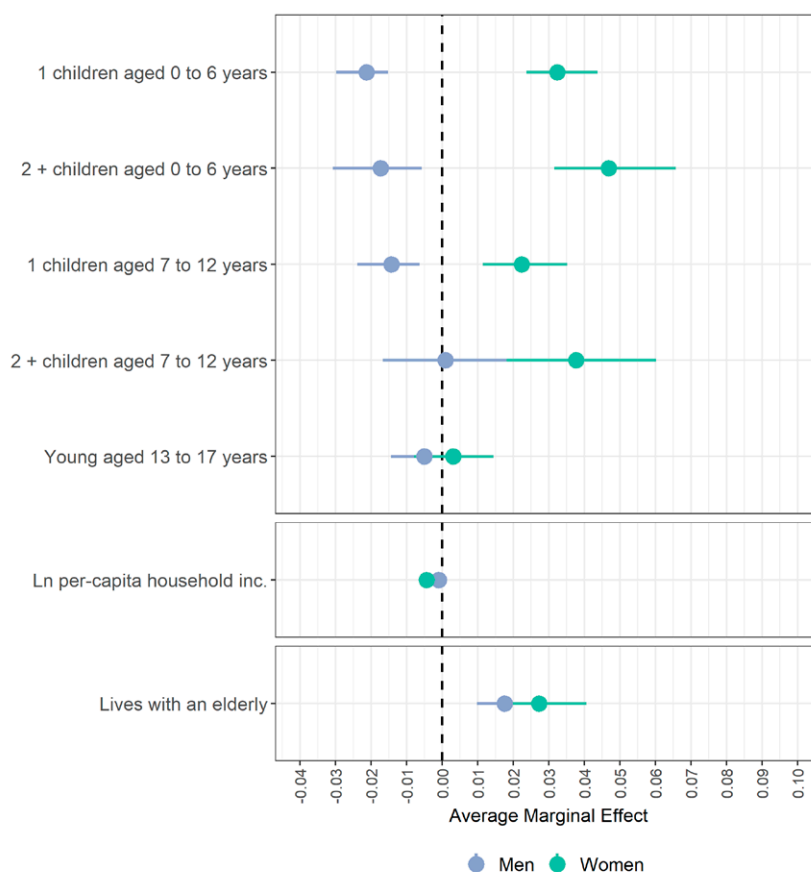
Appendix 1 includes the model's complete results. Regarding the purposes of this article, Figure 2 displays the average marginal effects derived only from the indicators pertaining to socioeconomic conditions and the family life cycle.[10]

The family life cycle has unequal effects among men and women. As for co-residency with children, the highest average marginal effect was registered in arrangements formed by two children aged up to 6 years, which implies a 4.7 % rise in the likelihood of open or potential unemployment for women but a 1.4 % decrease for men. This phenomenon stems from the typical division of household productive and reproductive labor. While men experience a reduction in their reservation wage due to the relevance of their income on family livelihood (which pushes them to enter an occupation immediately), women tend to bear most of the domestic care activities. This leads many women to prolong unemployment or lack the free time to look for and take on paid work, given the impossibility of socializing care costs through public institutions or

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10   For an adequate understanding on the influence of the individual's role in household, we should include in the model the type of household arrangement (considering, for instance, the high unemployment rates among the head of the household among families composed by a mother with children), which overlaps with the identification of children and elderly in the household. Thus, in this article, the analysis focuses on households' characteristics, as presented in Figure 2.

kinship networks. The burden of reproductive work is more pronounced in household arrangements with young children, which explains, among women, the positive and statistically significant marginal effects for arrangements with preschoolers and/or schoolchildren.

Figure 2. Average marginal effects of family variables in Brazil (2019).

The other variables complement the characterization of family life and its correlation with labor market participation. The presence of elderly people increases the likelihood of open or potential unemployment by 1.7 % among men and 2.7 % among women. This is due to the intergenerational distribution of resources through pensions and retirement income, which raises the reservation wage of working-age individuals. This trend is added to the performance of domestic care activities, particularly in the case of the expanded female workforce.

Finally, household net income per capita does not influence the likelihood of open or potential unemployment among men, but it does decrease this likelihood among women. In other words, women are more affected by the household income level than men, considering the decision to seek employment. This interpretation is in line with Oliveira, Scorzafave, and Pazello (2009) regarding the impact of this same variable on the likelihood of inactivity and unemployment among men and women. Another promising interpretation would be that women, when faced with a lack of household resources, tend to transition more intensively from inactivity to economic activity, increasing frictional unemployment.

These findings attest that the family sphere exerts a powerful impact on labor market participation. Furthermore, there are relevant differences between men and women regarding the relationship between households and the labor market in light of the division of social roles and the distribution of productive and reproductive burdens in households.

Conclusions

Economic participation is mediated by individuals' material and immaterial responsibilities in kinship relationships. Regarding the Brazilian case, this article analyzed recent trends in household composition and the association between family roles and labor market participation.

Over the last few decades, the decline in fertility rates has led to a reduction in the percentage of workers living in households consisting of "couples with children". This phenomenon has been counterbalanced by a rise in the "couples without children" and "single-person" family arrangements and the consolidation of single-mother families. In general, the presence of children correlates with an increase in the aggregate unemployment rate. This process combines a high youth unemployment rate with a higher reservation wage for secondary income providers. Single-mother families were prominent in our research, as it combines a lower household income per capita with the highest aggregate unemployment rates.

Individuals from extended family arrangements tend to have higher inactivity rates due to the overload of reproductive work and access to family resources. We also examined the high unemployment rate among sons and daughters, largely resulting from their youthful condition in the labor market and their role as secondary income providers.

Besides, there is evidence that heads of single-mother arrangements experienced a deterioration in their socioeconomic status between 2016 and 2019, a period marked by a slow economic recovery. This phenomenon is attributable to factors related to the stratification of the labor market (high unemployment among women and young people, on top of the vulnerable condition of less educated individuals in the labor market) and to family dynamics (fewer resources to cushion the impacts of unemployment of household heads, which adds to the difficulties in reconciling productive and reproductive activities in households).

Considering typical experiences in families' formation and structuring, our findings suggest that a family's life cycle significantly impacts patterns of professional insertion. Women tend to be more vulnerable to unemployment and/or involuntary inactivity when living in households with young children. Furthermore, women are often overwhelmed with the unpaid activities they must perform, which diminishes their available time to seek employment. In short, the family division of labor adds an extra layer to the residual socialization of reproductive work in Brazil, which produces unequal effects on men and women, especially when we consider the opposite patterns observed in inactivity due to reproductive work.

Implementing a logistic regression model sought to address the effects of family characteristics on professional insertion. In the case of women, living with children correlates with a greater likelihood of open or potential unemployment, while the opposite is true among men. The unequal distribution of family responsibilities causes this phenomenon and highlights the relevance of public childcare. Our model also revealed that the likelihood of open or potential unemployment is greater among individuals who live with elderly people due to the demand for care activities and access to social security resources. Lastly, the level of household income has a greater effect on women than men, possibly due to the female transition from inactivity towards labor market participation in households with fewer resources.

The workforce is not merely comprised of an aggregate of mutually independent individuals. In its functioning, the labor market intersects mercantile elements, such as the circulation of monetary resources and the processes of buying and selling labor force, as well as non-mercantile elements, expressed in interpersonal relationship patterns and the sharing of subsistence and socioeconomic projects. Workers do not make

decisions solely through utilitarian calculations, as though they were seeking, in isolation, to balance professional expectations with available opportunities. Everyday practices and evaluative assessments that "drive" the labor market depend on an individual's position and role within kinship relationships.

Unemployment is based on collective norms and practices since participation in labor markets relies on socioeconomic conditions and the distribution of family roles. Households are pivotal for economic decision-making as an articulating link between the individual and the productive system. Most individuals are engaged in family demands and have some support for economic participation, two phenomena that compose the circuit of people and resources in the labor market's functioning.

Certain dimensions could be further examined in future investigations. First, it is still necessary to understand the impact of the COVID-19 pandemic on inequalities in the Brazilian labor market, and the interface between the family sphere and professional insertion in more recent data. And second, studies that consider the PNAD-C longitudinal panel may help us understand how individuals make decisions to enter and exit the labor market in specific circumstances and how the configuration of household arrangements mediates these decisions.

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Appendix 1. Coefficients of the regression model (2019).

	Men	Women
Schooling (ref.: High Education)		
Without Education	1.03*** (0.059)	1.294*** (0.044)
Elementary School	0.78*** (0.062)	1.146*** (0.045)
High School	0.481*** (0.058)	0.733*** (0.039)
Race (ref.: White)		
Black	0.177*** (0.033)	0.238*** (0.028)
Asian	-0.378 (0.193)	0.137 (0.144)
Indigenous	-0.308 (0.175)	0.587*** (0.163)
Age (ref.: 50 to 59 years old)		
18 to 24	0.704*** (0.052)	1.213*** (0.047)
25 to 29	0.289*** (0.059)	0.667*** (0.05)
30 to 39	-0.023 (0.046)	0.374*** (0.043)
40 to 49	-0.159*** (0.046)	0.134** (0.043)
Role in household (ref.: Head of the household)		
Spouses	-0.165*** (0.04)	-0.077* (0.032)
Sons or daughters	0.96*** (0.047)	0.4*** (0.04)
Others	0.711*** (0.055)	0.115* (0.05)
Household composition (ref.: Without children and teenagers)		
1 child in preschool age	-0.211*** (0.038)	0.214*** (0.033)
2 + children in preschool age	-0.169** (0.065)	0.303*** (0.054)
1 child aged between 7 and 12 years old	-0.139** (0.044)	0.15*** (0.04)
2+ children aged between 7 and 12 years old	0.009 (0.083)	0.246*** (0.067)
Young aged between 13 and 17 years old	-0.047 (0.044)	0.021 (0.039)
Elderly people in the household (ref.: Without)		
With	0.165*** (0.04)	0.176*** (0.039)
Natural log of the household net income per capita	-0.01 (0.006)	-0.03*** (0.006)
Intercept	-3.697***	-3.299***

Notes: Calculations controlled by states and residential area. Standard errors in parentheses.
*** p<0.001, ** p<0.01, * p<0.05.
Source: Microdata from PNAD-C (2013-2019). Own calculation.