Área 13 – Economia do Trabalho

SURVIVAL ANALYSIS OF YOUNG PEOPLE IN THEIR FIRST EMPLOYMENT IN BRAZIL

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ABSTRACT

This study seeks to investigate the duration of time that the young Brazilian population spend in their first formal Brazilian employment, highlighting the factors that influence their permanence or exit, either to a situation of unemployment or to another job. In addition, it seeks to relate *overeducation* to their first labor activity, in order to ascertain its impact to their permanence in the job. To that end, data from the Relação Anual de Informações Sociais (RAIS) were used from the years between 2003 and 2013, which made it possible to follow the trajectory of young people in the labor market when they joined their first job in 2003. Survival analysis models using the Kaplan-Meier non-parametric estimator and with the aid of Cox regressions allowed us to verify that male individuals, those employed by non-private companies, those with disabilities, and youngsters who obtain their first labor activity in large companies and who have a higher level of schooling are more likely to remain in the first job for a longer period. On the other hand, young people in situations of *overeducation* were more likely to leave their initial activity than those who are in compliance, but the risk of leaving for another job is significantly higher than for an unemployment situation, indicating that the qualified young person is more likely to be included in the labor market.

Keywords: First Job, Survival Analysis, *Overeducation*, Formal Labor Market.

JEL Codes: J64, C41, I21.

RESUMO

Este estudo busca investigar a duração de tempo do jovem no primeiro emprego formal brasileiro, destacando os fatores que influenciam sua permanência ou saída, seja para uma situação de desemprego ou para outro emprego. Além disso, busca-se relacionar *overeducation* à primeira atividade laborativa dos jovens, de modo a averiguar o impacto da mesma na permanência no trabalho. Para tal fim, foram utilizados dados da Relação Anual de Informações Sociais (RAIS) para o período compreendido entre os anos de 2003 e 2013, o qual permitiu acompanhar a trajetória do jovem no mercado de trabalho ao ingressar no primeiro emprego em 2003. Modelos de análise de sobrevivência, através do estimador não paramétrico de Kaplan-Meier e com o auxílio regressões de Cox, permitiram verificar que indivíduos do sexo masculino, os contratados por empresas não privadas, os portadores de deficiência, e os jovens que conseguem sua primeira atividade laborativa em grandes empresas e que possuem maior nível de escolaridade têm mais chances de permanecer no primeiro emprego por um período maior.. Por outro lado, jovens em situação de *overeducation* apresentaram maiores chances de deixar sua atividade inicial que aqueles que se encontram em situação de conformidade, porém, o risco de saída para outro emprego é significativamente maior do que para a situação de desemprego, indicando, dessa forma, que o jovem qualificado tem maiores chances de estar inserido no mercado de trabalho.

Palavras-chave: Primeiro Emprego, Análise de Sobrevivência, *Overeducation*, Mercado de Trabalho Formal.

Classificação JEL: J64, C41, I21

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1. INTRODUCTION

According to information from the International Labor Organization (ILO), in 2017 approximately 70.9 million young people were unemployed, equivalent to a global youth unemployment rate of 13.1%. According to the Organization, young people are three times more likely to be unemployed than adults. According to the Brazilian data, still according to the institution, it is observed that 52.5% of the youngsters are employed, and that about 22% are not studying or working, the most affected being women and blacks or browns. In addition, among the young Brazilians who work, one in three receives up to one minimum wage.

The high rates of youth unemployment have been a focus on the agendas of the rulers, and this can be clearly observed in the results for the Brazilian labor market. According to the Ministério do Trabalho e Emprego (MTE), the analysis of the Relação Anual de Informações Sociais (RAIS), for the year 2016 registered a decrease in the employment stock for all age groups, with the exception of those over 65 years of age. However, the reduction was proportionally higher for the younger bands. For employees up to the age of 17, there was a 21.5% drop in the number of links, and among those aged 18-24, the links decreased by 9.6% compared to the 2015 data. Among young people who are out of the labor market, a large number of individuals are seeking the first access to it, and their insertion has proved to be a great challenge for different societies. In addition, the young person entering the labor market for the first time tends to find more precarious occupations, a situation that is aggravated in many countries due to low educational level and the fragility of educational training (GUIMARÃES, ALMEIDA, 2013). According to the ILO, three out of every four young people in the world work in informal jobs.

The need to enter the market may lead young people to accept jobs that do not correspond to their educational level, providing a mismatch between work and qualification, which characterizes the *overeducation* situation. This can be defined as the irregularity between the occupation and the educational level of the individual, where the same performs a function that requires a schooling below that which it possesses. And this can have a negative impact on the individual's satisfaction with work, as Verhofstadt and Omey (2003) indicate when analyzing research data for Flemish workers - a Belgian ethnic group, which corresponds to the majority of its population. There are few studies that relate *overeducation* and first job. However, there are indications that when associated, they can be a trap for the young, causing the mismatch to be repeated in future settings (BALLESTEROS; ROSAL, 2017). According to Marioni (2018), a quarter of the Brazilian formal market is overeducated.

Recent studies have argued that the first job can influence the future of young people in the labor market. According to Carrijo (2017), a bad start for young people in the job market can affect their professional future, making it difficult for them to access better jobs. CNBC (Consumer News and Business Channel) information, submitted in June 2018 based on research by the Strada Institute for the Future of Work and Burning Glass Technologies - a company analyzing the career market - point out that the first job may have serious impact on the rest of young people's lives. The study shows that recent graduates who accept to work in jobs where they do not need a degree are five times more likely to be in the same position after five years than those who have already used their degree immediately; three out of four graduates who took early employment (who did not require a degree) will be in the same position ten years later.

The institution's report also states that the situation of underemployment of young graduates cannot be considered only as a stage and, once underemployed, it is increasingly difficult to escape from this circumstance.

Although the academic literature on young people in the Brazilian labor market is still scarce, there is empirical evidence of their difficulty in accessing the first job (REIS, 2015; MONTE; ARAÚJO; LIMA, 2007; CARRIJO, 2017). These authors point to the educational level as the main factor that affects entry into the first job. Others, however, are aware of the high turnover of young people in the market (FLORI, 2005; ALBUQUERQUE, PERO, 2008; MONSUETO; BICHARA; CUNHA, 2010), which can be driven by better job opportunities and salary, or by remain in the same position.

Studies on the subject have presented similar results regarding the influence of level of schooling, gender and social class differentiation. Garcia et al. (2010) states that obtaining the first job is sensitive to macroeconomic variations. However, there was no work in the Brazilian literature that

proposed to analyze the survival time of young people in the first job, because the difficulty of the young person is not only to enter the labor market, but also to remain in it. Thus, this work aims to fill this gap.

It is in this context that the present research seeks to contribute to the literature by analyzing the duration of time of the youngster in the first job in the Brazilian formal market, as well as the variables that influence his stay or exit from it, and by relating first job and *overeducation* data. It is also intended to investigate the factors that drive them to another job or to the unemployment situation. In this way, it will be possible to produce an overview of how and why the young person entering the formal Brazilian labor market for the first time can leave it, according to their individual characteristics, their work, and the firm in which they work. To that end, the data from the Relação Anual de Informações Sociais (RAIS), from the period 2003 to 2013 will be used and the survival analysis models will be used, according to the Kaplan-Meier non-parametric estimator and Cox regressions.

The sections that follow will present, respectively, a brief review of the literature on young people in the labor market, especially in relation to the first job; sources of data used and methodological approach; results and final considerations.

2. THEORETICAL REFERENCE
2.1. Theoretical Aspects

Some studies seek to analyze the theoretical aspects of the youth labor market, highlighting the greatest difficulties encountered and the need for policies that promote greater access to young people (Guimarães and Almeida, 2013). This can also be observed in studies not only for Brazil, but also for all of Latin America (ABDALA, 2002) and in more developed continents such as Europe and Central Asia (HIGGINS, 2010).

Guimarães and Almeida (2013) analyzed the difficulties of insertion of young people in the labor market, seeking a reflection on the employment policy in Brazil, and especially how it behaves in relation to them. To this end, the authors also study the international scenario, specifically the European one, evaluating policies and programs adopted by other nations, such as England and Denmark, that have implemented programs focused on strengthening schooling, qualification and employability, following rigorous demands. Regarding the Brazilian scenario, the authors highlight the low level of education that exacerbates the situation of young people in the country and the early entry of young people into the labor market imposed by necessity, which leads to more precarious occupations. Also noteworthy are some policies and programs created in Brazil and their importance for the integration of young people in the labor market. Finally, they point out directions that are based on the advance in the direction of work among the three spheres of government (federal, state and municipal) and in actions that contribute to the creation of greater opportunities, with employment policy being an integrated process.

Abdala (2002) analyzes the problems of young people in the labor market for Latin America and the Caribbean, and how educational and socioeconomic factors can affect their entry into the employment world. The author points out that in Africa the lack of technological innovation and the scarcity of resources, coupled with the productivity requirements of certain sectors, has created a difficult market for all, especially for young people. These, in turn, tend to enter the market with lower wages and social protection, and greater precariousness and instability, in most cases without contract and without social security. It highlights the early entry of the young Latin American into the labor market, promoted by necessity, and attentive to the fact that the larger social classes are more prone to better job opportunities. In addition, it also emphasizes gender inequality, where women have few opportunities; and the low level of schooling that still affects the continent. In this way, it points to policies based on education, training and capacitation, in order to avoid the increase of poverty, the early introduction of labor, and to contribute to the reduction of social inequalities.

This reality is also observed in some European countries and Central Asia in Higgins's (2010) study of the labor market for young people on these continents, although they are characterized by a relatively high level of education. The author analyzes the transition from education to the labor market, in order to help in understanding this scenario and to suggest areas where action is necessary and more effective. Notes that, in general, education and training systems have been slow to adapt to rapidly changing market demands resulting from fundamental changes in the industrial structure. Thus, it points to the need to focus resources on disadvantaged young people, to reform education and training systems,

and to invest adequately in education systems, especially in the short term, as they play a crucial role in supporting the integration into the labor market.

Layard, Nickell and Jackman (1991) argue that the highest unemployment rates for young people in ODCE - Organização para a Cooperação e Desenvolvimento Econômico - are due to the fact that this group is more likely to be unemployed. According to these authors, issues such as generous benefits of unemployment, more explicitly dependent on job search and acceptance, and some employment protection, perhaps in the form of evaluation of experiences, can help policymakers to make better market decisions regarding the labor market.

When researching the reasons for the youth unemployment rate is much higher than for adults, Flori (2005) found, based on data from the PME for the period 1983 to 2002, that the average duration of unemployment is practically the same for young people, adults and the elderly. However, the entry to the unemployment situation is greater for young people, being a determining factor for higher unemployment rates among them. Thus, the author concludes that the high rate of unemployment among young people is not caused by the difficulty of getting the first job, but rather, it is due to their high turnover in the labor market.

2.2. Empirical Works

Empirical studies of young people in the Brazilian labor market, especially the first job, show the positive influence of the level of schooling on the way out of unemployment, the greatest difficulty encountered by the female gender, and that the probability of obtaining a job is greater than for an individual who already has experience in relation to the one who is looking for a first opportunity (REY, 2015; MONTE; ARAÚJO; LIMA, 2007; CARRIJO, 2017). Some studies highlight the turnover of young people, and associate high unemployment rates with the difficulty of remaining in the same job (ALBUQUERQUE, PERO, 2010; MONSUETO, BICHARA; CUNHA, 2010). In addition, distinctions are observed between social classes (CARRIJO, 2017; MONSUETO; BICHARA; CUNHA, 2010), the informal sector as the main responsible for absorbing youth labor (REIS, ÁGUAS, 2014; GUIMARÃES, ALMEIDA, 2013). and how macroeconomic variations may affect the first job (GARCIA et al., 2010).

Aiming to analyze how the probabilities of the transition from unemployment to employment, whether formal or informal, and to inactivity, are related to the duration of unemployment and the characteristics of the worker, Kings and Water (2014) estimated, based on data longitudinal surveys of the PME (Pesquisa Mensal e Emprego) for the period between 2006 and 2013, duration models that consider these transitions. Their results show that the longer the unemployment condition the greater the probability that the worker will move to the employment condition, but also to the exit from the job market. As for schooling, the probability of moving from unemployment to formality is higher among those who are more educated. For women, the probability of transition to formal or informal employment is lower than for men, while the chances of leaving the labor market are 28% higher for them. It was also observed that individuals who had never worked previously had a lower probability of transition to any of the mentioned conditions, having a greater difficulty to obtain employment (formal or informal) than those who had already had experience, which evidences the difficulty of first job. Thus, the authors conclude that both the individual characteristics and the fact of having or not experience influence the exit of the individual from the unemployment condition, either for the labor market or for inactivity; and that there is a disincentive to workers seeking employment for a long time, which leads them to leave the market.

Using the same data source (PME), for the years 2006 to 2012, Reis (2015) analyzed the transition of young Brazilians from the unemployment situation to the first job, as well as the duration of the first and the factors which influence the probability of exit from it. It also sought to identify the variables that could reduce it. In order to estimate the duration models with PME data, the author selected a sample of 15 to 24 year olds who had never worked (at the time of the first interview). The results show that the probability of exit from unemployment for young people who have never worked is much lower than for those who already have experience, especially in relation to better quality jobs. This probability is even lower when the inexperienced individual is female. For young people seeking their first job, schooling is a positive variable for the exit of unemployment, and the informal sector appears to offer better opportunities for them.

Similar results are found by Monte, Araújo and Lima (2007), who applied a bivariate logit model for PME data for the years 2000 and 2001 to study the characteristics that affect the individual's occupational insertion and a non- Kaplan-Meier parametric study to analyze the expected duration of unemployment, aiming to ascertain these factors for those seeking the first job and those seeking re-employment. It was observed that the probability of insertion in the market is 116.3% higher for males; that the more educated are more likely to enter the formal sector, but the greater the chance of remaining in the state of unemployment; and that there are greater placement opportunities for those who have had some experience, 76.8% higher than those who seek their first job. In addition, regional analysis found that less developed regions have lower periods of unemployment, confirming the presence of the informal segment and its importance in reducing the average duration of inactivity.

Garcia et al. (2010), investigated, through the analysis of time series, how the Brazilian labor market in the period between 1999 and 2009 was influenced by the macroeconomic context, and compared the results for both employment and the first job. In addition, the authors discuss the insertion of young people in this market, especially those seeking a first job in the formal sector. Before the analysis, the authors concluded that both the employment and the first job are influenced positively by the growth of production and negatively by the inflation and the interest rate, for the studied period. They also found that the first job is more affected by economic growth, being the main variable to explain it, indicating that it is more affected by shocks in economic activity. They also highlighted the lack of incentives and the need for public policies that facilitate access to the labor market.

Using Rais-Migra / MTE panel data for the years 1996 to 2005, Albuquerque and Pero (2008) estimated a fixed-effects model to analyze the relationship between turnover and salary, based on the first 10 years of the career of young people in the Brazilian labor market. The authors highlight the high turnover of young people in the market, especially at the beginning of their professional life. During the analyzed period, only 5% of the individuals continued in the same occupation, not suffering any type of disconnection. The results show that turnover and yields are positively associated. Although positive, turnover returns are decreasing as the amount of shutdown increases. In addition, it can be observed that from 3 to 5 years from the first job the salary gains resulting from changes in employment are higher.

Monsulto, Bichara and Cunha (2010), sought, through a multinomial Logit model, to analyze the determinants of mobility between occupational segments, and through quantum and interquartile regressions to estimate the effects of this mobility on income distribution, based on data from PME for the period between 2002 and 2010. They found that in the Brazilian market, in most cases, mobility has a positive effect on wages, however, it may be used as a method of higher earnings among higher income workers, while among the poorest it is a social survival strategy. Thus, they observed that although it contributes to wage increases, the mobility of Brazilian workers promotes a greater difference of wages among workers at the extremes of income distribution.

Based on PME data from 2002 to 2016, Carrijo (2017) estimated probability models (Logit multinomial) to investigate the factors that determine the youth's insertion in the first job, the differences in the first hiring according to gender, and for evaluate the impact of the first job on the individual's occupational trajectory. The author concludes that young people obtain their first employment opportunity in categories of lower quality and remuneration, and greater precariousness and informality, with domestic service being the main access for women and the construction sector for men. In addition, it verifies that men and women tend to start their employment at similar moments, and find evidence of segregation at the time of first employment, where young people with similar productive characteristics are distributed in different occupations in terms of socioeconomic condition and quality. It also notes that females have greater difficulties in occupying higher occupational categories; that at the beginning of the activities, young people tend to have higher degrees of occupational turnover and flexibility; and finally, that the first job has an impact on the young person's future employment, reducing access to better job opportunities.

2.3. Overeducation

The literature on *overeducation* has related it to different factors, such as the impact that this can bring to the future employment, causing the situation to remain for long periods or to repeat itself in the future moments ((MERONI, E. C.; TOSCANO, E. V., 2017; ANNEGUES *et al.*, 2017), the influence

that it can exert on the wage income (DIAZ, M. D. M .; MACHADO, L., 2008; REIS, M., 2015; MARIONI, L. S., 2018) and more specifically with respect to the first job (VERHOFSTADT, E .; OMEY, E., 2003; BALLESTEROS, J. A.; ROSAL, M. P.O., 2017), although it is still somewhat limited.

In analyzing the impact of education on first job satisfaction, Verhofstadt and Omey (2003), based on research data for twenty-three-year-old Flemish workers and using ordinal regression models, observed that people with higher levels of education appear to be more satisfied because they can get a better job. However, when the characteristics of the work are controlled, there is a negative relation - people with higher levels of schooling being unhappy at the first job. They point out that the relationship between educational incompatibility and satisfaction is ambiguous, since *overeducation* has a clear negative impact on job satisfaction. However, for low level of education different results are obtained for men and women.

MCGuiness (2006) examines the consistency of *overeducation* in the context of various theoretical frameworks, presenting a literature review on this phenomenon. The author discusses the various mediation controversies associated with the study of the topic, in order to provide an assessment of the extent to which the impacts of this condition represent an economic reality as opposed to a statistical apparatus. Their conclusions point out that the repercussions are probably not simple, and that it can potentially be expensive for individuals and companies, as well as for the economy as a whole.

In examining the literature on this topic in Europe, Caroleo and Pastore (2015) note that the interpretation of some recent contributions is that insufficient skill demand is a factor that prevails in most countries, especially after an expansion in the supply of skills. The authors contend that educational and skills mismatch would be a temporary phenomenon that will be absorbed when the economy grows back. In addition, their conclusions point to the importance of advancing the school transition system to work, and particularly the links of the education and training system to the labor market. Alternatively, they indicate that more employment opportunities and integration contracts should be offered to the newly graduates, so that their work skills will be developed earlier.

Meroni and Toscano (2017) verify whether the *overeducation* at the start of a graduate's career is a pitfall to continue in such situation later, or whether it corresponds to a push for a job that matches their qualifications. The authors distinguish the concept in apparent and genuine, where the first concerns only the educational level and the second includes the inadequacy of skills. Their results exhibit evidence that this early career condition leads to a greater chance of being overeducated also in the future with no real differences between the apparent and the genuine. However, they highlight the emergence of heterogeneities when observing countries or regions individually.

Ballesteros and Rosal (2017), through the application of an extension of the recursive bivariate *probit* model, analyze the impact that the *overeducation* in the first job can trigger in the future employment of young people, using the 2009 *ad hoc* module of the Spanish Workforce research. Their results point to this condition as a trap, since young people who did not correspond between their level of schooling and the first job are 40.2% more likely to be subject to mismatch in a second job than those who were reciprocated from the beginning. The authors also conclude that the pure effect of the initial mismatch has more impact than the workers' own characteristics, and depends on the educational achievement.

Through the use of a *logit* model with *Propensity Score Matching* for multiple treatments and models of survival analysis, Annegues et al. (2017) sought to investigate the impact of the training area of former students graduated at the Federal University of Paraíba (UFPB) on the probability of being *overeducation* and the influence of their areas of performance in the time individuals remain in such situation. They observed that the areas of applied humanities, arts and social were more likely to be under this condition, as well as a lower probability of leaving the circumstance for some years after the completion of the course.

Reis (2015) estimates the effects of *overeducation* and *undereducation* on labor income in Brazil, through the use of longitudinal data and information provided by analysts on the schooling required for each occupation. The author points out that the results for the Brazilian data do not differ from those reported for developed countries. The analysis indicates that one year of schooling in excess

increases the income of work, however, to a lesser extent than an additional year of schooling required, even when taking into account the fixed effects of individuals.

Based on data from the 2000 Census and in order to add evidence to the *overeducation* and *undereducation* literature, Diaz and Machado (2008) investigated for the Brazilian case the incidence and effects on income of the inequality between schooling required to perform a given occupation and the schooling that the individual possesses, in particular, with regional disaggregation, by large group and by gender. The results pointed to the Southeast region with the highest rate of adequacy, and the South region with the highest rate of overeducated individuals. The Northeast presented a greater percentage of people in the condition of *undereducation*, about 60%. The return of these was more favorable to females, but the regions of greater dynamism - Southeast and South - showed lower returns than the others for the women of this category.

Marioni (2018) examines the impact of educational inadequacy on the Brazilian labor market. Based on information from the RAIS, it examines the incidence of nonconformity between educational level and work performed, and estimates the wage effects of super and low educational level in the heterogeneity of workers. His main conclusions show that a quarter of the Brazilian formal labor market is overeducated and a quarter is undereducated. He also notes that these workers earn significantly lower wages than co-workers who have a job in accordance with their level of education after the individual's unobserved heterogeneities are controlled. It also notes that the penalty for *overeducation* corresponds to about half of the premium to go to university, and therefore such a situation may be arising due to individual decision.

In the light of the above, it is observed that most of the research seeks to investigate the duration of youth unemployment, between their entry into the Economically Active Population (PEA) and obtaining their first job. The present study, however, seeks to contribute to the literature by analyzing the permanence of young people in the first job in the Brazilian formal market. It is also noted that, as far as *overeducation* is concerned, there are still no studies that relate it to the first job for Brazilian data, which is also the purpose of this study.

3. METHODOLOGY
3.1. Data base

In order to estimate the duration of young people in their first job in the Brazilian formal market, information about personal characteristics of the individuals, their work and the company in which they are working was used. This information was extracted from the RAIS - Relação Anual de Informações Sociais - and covers the period from 2003 to 2013. We selected young people between the ages of 16 and 24 who entered the labor market in 2003 and followed their longitudinal trajectory considering a period of 10 years.

RAIS is generated from the individual statements of employers, and is one of the main sources of information on the formal labor market in Brazil. The information collected by it can have its data disaggregated at the municipality level, class of economic activity and occupation. It also contains the number of employees in divisions by gender, age group, education level, income range, average income, wage mass, race / color and type of disability (if any). In addition, it has annual periodicity, covers the entire national territory and covers about 99% of the Brazilian formal market.

3.2. Econometric Methodology
3.2.1. Survival Analysis

Used in the study of data, survival analysis is a set of statistical processes in which the variable of interest is the time that elapses until a certain event occurs. That is, the statistical techniques of survival analysis are used when trying to investigate a phenomenon in relation to a period of time, that is, the time elapsed between an initial event, in which a subject or an object enters a specific state, and a final event, which modifies this state.

According to Monte, Araújo and Lima (2007), the definition of three elements is of paramount importance in the duration models: event of interest (failure), scale of measurement and initial time. Adapting to the objectives of this work, the event of interest will be the young person leaving the first job; the measurement scale will be the time elapsed until the occurrence of the failure, given in

months; and the start time will be the month in which the individual was able to begin his work activities for the first time.

It would not be reasonable to assume a normal distribution for these types of data, since they are generally not distributed symmetrically, distorting and with few observations surviving for a very long time when compared with most. Thus, the presence of censorship is an important feature of duration models, as there may be cases where the exact survival time will not be known, which can occur when the individual's follow-up was interrupted, for example, not reaching the end point of interest.

To perform the analysis of survival data it is necessary to define two functions used to describe their distribution. These are called *survival function* and *risk function*.

Everitt and Hothron (2009) define the survival function, S(t), as the probability that the survival time, T, is greater than or equal to a time t, that is, $S(t) = P(T \geq t)$. When data are censored, the non-parametric survival function is typically estimated using the Kaplan-Meier estimator.

The Kaplan-Meier method consists of sorting the survival times in ascending order, so that $t_1 \leq t_2 \leq \cdots \leq t_n$, where the last element t_j is the longest survival time. Thus, we have the following function:

$$\hat{S}(t) = \prod_{j:t_j \leq t} \left(1 - \frac{d_j}{r_j}\right) \tag{1}$$

Where d_j is the number of individuals who experienced the event of interest at time t_j and d_j is the number of individuals at risk before t_j, including those censored. For each time the number of observations n_i, the number of outputs in t_i d_i and the conditional probability of survival are calculated. In this study, the survival function will determine the probability of a given individual staying at the first job for a period of time greater than a specified time, t.

The *risk function* indicates a threshold, and is defined as the probability of an individual experiencing the event in a small interval (s), ie when the time interval tends to zero, since the individual survived until the beginning of the interval. This function can be written as follows:

$$h(t) = \lim_{s \to 0} P(t \leq T \leq t + s \mid T \geq t) \tag{2}$$

where T indicates the survival time of the subject.

In the present study, the risk function offers the instant probability that the individual will leave the first job at a given time t, since he remained there until t.

Given the survival and risk functions, the Cox Regression method, presented by Cox (1972), is used to investigate the effect of variables in the time the event takes place. Since h (t) is positive, the equation is written as follows:

$$\log\left(h(t)\right) = \beta_0 + \beta_1 x_1 + \cdots + \beta_q x_q \tag{3}$$

This equation cannot be considered effectively non-parametric, since it assumes that the effects of variables on individual survival are constant over time and are additive on a scale. However, its own formulator, Cox (1972) proposed a new equation, so that the dependence of h (t) on t continues unspecified. This method is known as proportional hazard model. Such equation will be:

$$\log\left(h(t)\right) = \log\left(h_0(t)\right) + \beta_1 x_1 + \cdots + \beta_q x_q \tag{4}$$

where $h_0(t)$ nown as the baseline risk function, where the function of individuals has all explanatory variables equal to zero. The function can be rewritten as:

$$h(t) = h_0(t) \exp\left(\beta_1 x_1 + \cdots + \beta_q x_q\right) \tag{5}$$

In (5) the "baseline function" represents the common form of survival time distribution for all individuals, and the relative risk function $\left(\exp\left(\beta_1 x_1 + \cdots + \beta_q x_q\right)\right)$ provides the individual risk level.

In a Cox model, the parameters can be estimated by maximizing what is called partial likelihood (KALBFLEISCH; PRENTICE, 1980). Continuous survival times are assumed to be derived from partial probability.

Finally, you can arrive in the following format for the duration model:

$$\text{Duration}_{\text{First Employment}} = X\beta \tag{6}$$

where X corresponds to the set of explanatory variables.

The coefficients in a Cox regression are associated with the individual's risk of leaving a particular situation. Thus, a positive coefficient indicates greater risk and a negative coefficient indicates a protective effect of the variable with which it is associated.

It is worth mentioning that three analyzes will be carried out: the first one for the complete sample, considering all the young people who left the first job and went to unemployment or who entered another job (sample I); the second one will be considered a new sample, in order to identify the factors that influenced the survival time of young people who left the first job directly to another (sample II); and the third to verify the factors that influenced the survival time of young people who left the first job and went to the unemployment situation (sample III).

3.3. Variables used

The description of the explanatory variables that will be used in the econometric model is shown in Table 1.

Table 1: Description of the variables

Variables	Description
Sex	*Dummie*:1=Man; 0=Woman
Race	*Dummie*: 1=White; 0=Other races
Nationality	*Dummie* :1= Brazilian born or naturalized; 0= Foreign
Age	age at which the individual entered the first job in 2003
dummieNorth	*Dummie*: 1= North; 0= other regions
dummieNortheast	*Dummie*: 1= Northeast; 0= Other regions
dummieSouth	*Dummie*: 1= South; 0= Other regions
dummieSoutheast	*Dummie*: 1= Southeaste; 0= Other regions
dummieMidwest	*Dummie*: 1=Midwest; 0= Other regions
Average income	Income of the individual when entered the first job in 2003
Disabled person	*Dummie*: 1= handicapped; 0=not handicapped.
CBO1	*Dummie*: 1=Top members of State , managers of public interest organizations and business , managers; 0=Other categories
CBO2	*Dummie*: 1= Professionals of science and the arts; 0=Other categories
CBO3	*Dummie*: 1= Workers with high school degree; 0=Other categories
CBO4	*Dummie*: 1= Administrative service workers; 0=Other categories
CBO5	*Dummie*: 1= Service workers, sellers who work in stores and markets; 0=Other categories
CBO6	*Dummie*: 1= Agricultural, forestry and fishing workers; 0= Other categories
CBO7	*Dummie*: 1= Workers in the production of industrial goods and services; 0= Other categories
CBO8	*Dummie*: 1= Workers in the production of industrial goods and services; 0= Other categories
CBO9	*Dummie:* 1= Maintenance and repair workers; 0= Other categories
Legal nature	*Dummie*: 1=Private; 0=Public, (In 2003)
Agriculture-Fishing	*Dummie*: 1= Agricultural and fishing sectors; 0= Other sectors
Industtry	*Dummie:* 1= Industrial sector; 0=Other sectors
Construction	*Dummie:* 1= Construction industry; 0=Other sectors
Trade	*Dummie*: 1= Trade sector; 0=Other sectors
Service	*Dummie*: 1= Service sector; 0=Other sectors
Schooling-exit	Level of schooling that the young person had when leaving the first job. It ranges from 1 to 11, and each number represents the following levels, respectively: illiterate; until the 5th full year; 5th full year to fundamental; 6th to 9th grade; complete middle school; incomplete high school; complete high school; incomplete college degree; Graduated; masters; and PhD.
Schooling-change	*Dummie*: 1= If the individual has changed schooling during the first job; 0= Opposite case.
Micro-company	*Dummie*: 1= Micro-company ; 0=Other companies
Small company	*Dummie*: 1=Small company; 0= Other companies
Medium company	*Dummie*: 1= Medium company; 0=Other companies
Big Company	*Dummie*: 1=Big company; 0=Other companies
Overeducation	*Dummie*: 1= If the individual entered the first job overeducated*;* 0= Opposite case

Source: Own Elaboration

It should be noted that the occupations performed by the individuals were divided according to the Classificação Brasileira de Ocupações - CBO (2002), through the establishment of large groups, as shown in Table 2. Each group is divided according to the similarity of the functions performed and the

level of competence. This, in turn, is defined by the Ministério do Trabalho e Emprego (2010) as a function of the complexity, breadth and responsibility of the activities developed in employment or other type of employment relationship.

Table 2 - Division of large groups according to CBO

Large Groups in CBO 2002	Level of competence
0 – Armed Forces, police and military firefighters	Undefined
1 – Members of public authorities, managers of public interest organizations and companies and managers	Undefined
2 - Professionals of science and the arts	4
3 - Technical workers(high school degree)	3
4 - Administrative service workers	2
5 - Service workers, sellers (commerce and markets)	2
6 - Agricultural, forestry, hunting and fishing workers	2
7 - Workers in the production of industrial goods and services1	2
8 - Workers in the production of industrial goods and services2	2
9 - Maintenance and repair workers	1

Source: Own elaboration according to data from the Ministério do Trabalho e Emprego.
Note:[1] Production system workers who tend to be discrete and who deal more with the shape of the product than with its physico-chemical content.
Note: [2]Workers of production systems that are or tend to be continuous (chemical, steel, among others).

Competence level 1, for example, includes those who are not qualified. And as the level increases, the greater the complexity and the schooling required for the job. Thus, for the analysis of the variables related to occupation categories, those that require lower level of competence - groups 1 and 2 - will be considered as the base. It is also worth mentioning that category 0, which involve professionals from the Armed Forces, police and military firefighters, was not added to the variables used to estimate the model, considering that there were no observations that contemplated it.

In order to define the size of the company, the definition of size of establishments according to the number of employees was considered, according to the division of SEBRAE - Serviço Brasileiro de Apoio às Micro e Pequenas Empresas – 2013 - 2013. And with regard to the CNAE - Classificação Nacional de Atividades Econômicas - the activities were subdivided into five sectors of fundamental importance to the Brazilian economy: agriculture and fishing, industrial, construction, trade and services.

Table 3: Classification of the size of the company according to the number of employees

Size	Trade and Services	Industry
Micro-company	Up to 9 employees	Up to 19 employees
Small company	From 10 to 49 employees	From 20 to 99 employees
Medium company	From 50 to 99 employees	From 100 to 499 employees
Big company	100 or more employees	500 or more employees

Source: Own elaboration based on data from the Serviço Brasileiro de Apoio às Micro e Pequenas Empresas (SEBRAE).

4. ANALYSIS OF RESULTS

4.1. Descriptive Statistics

Table 1 presents the descriptive statistics of the variables of individual characteristics, work and company in which the young person who entered the formal Brazilian labor market for the first time in 2003, considering all sample (Sample I) and disaggregating by young people who left of the first job and entered another (Sample II) and those who left for the unemployment situation (Sample III).

From Sample I, it can be seen that the average income of young people who entered the Brazilian formal labor market for the first time in 2003 was R$ 391.73, approximately 63% higher than the minimum wage in that year (R $ 240.00). The average income of the individual who left the first job directly to another was higher than for the other samples, R$ 406.24 (69.27% higher than the minimum wage for that year). On the other hand, the average salary of the individual who left the unemployment situation was lower than in the other cases, R$ 388.70, however, very similar to the complete sample.

The average duration of young workers in the Brazilian formal labor market is approximately 17 months. The individual who leaves their initial job and goes to another job has a significantly longer

average expectancy, around 31 months. As for the workers who leave for unemployment situation, they have a lower average, around 13 months.

Table 1: Descriptive Statistics

		Sample I	Sample II	Sample III
Continuous Variables		**Average**		
Income		391,73	406,24	388,70
Duration of first job		16,68	31,25	13,39
Age		20,03	20,34	19,98
Categorical Variables		**Percentage (%)**		
Sex	Women	41,27	39,92	41,47
	Men	58,73	60,08	58,53
Race	White	61,84	58,24	62,31
	Non-White	38,16	41,76	37,69
Nationality	Brazilian born or naturalized	99,97	99,99	99,97
	Foreign	0,03	0,01	0,03
Regions	North	6,45	8,47	6,22
	Northeast	17,61	22,08	16,97
	South	16,04	27,89	14,3
	Southeast	50,53	29,33	53,44
	Midwest	9,38	12,23	9,08
Disabilities	Desabled	0,41	0,51	0,39
	Non-disabled	99,59	99,49	99,61
CBO	CBO1	1,91	1,41	1,98
	CBO2	2,43	2,79	2,38
	CBO3	6,53	6,97	6,43
	CBO (4 a 9)	89,13	88,83	89,21
Legal Nature	Private	5,12	5,69	4,78
	Non-Private	94,88	94,31	95,22
CNAE	Industry	23,86	25,24	23,59
	Trade	38,25	36,92	38,62
	Services	32,63	33,23	32,69
	Construction	2,78	2,42	2,84
	Agropecuaria and Fishing	2,48	2,16	2,54
Schooling (when entering first job)	Illiterate	0,58	0,54	0,59
	Up to the 5th full year	3,06	2,91	3,09
	5th full year to Elementary school	4,22	3,39	4,34
	6th grade to 9th grade	10,64	9,57	10,83
	Completo Elementary School	16,8	19,9	17,12
	Incomplete High School	21,57	12,2	21,96
	Complete High School	37,05	42,97	36,11
	Incomplete Higher Education	3,66	3,66	3,63
	Complete Higher Education	2,41	2,87	2,33
Company size	Micro-company	50,24	42,66	51,03
	Small Company	22,97	24,49	22,86
	Medium Company	10,8	13,56	10,48
	Big Company	15,99	20,3	15,64
Overeducation	Yes	1,06	1,04	1,06
	No	98,94	98,96	98,94
Observations		774.409	94.580	688.814

Source: Own elaboration based on RAIS data.

Regarding gender, for the complete sample, it is observed that the majority are men, 58.73%. As for the race, the majority of individuals are white, 61.84%. It thus represents conformity with the literature, which affirms that women and blacks or "pardos" (brown-skinned) face greater difficulties in accessing the labor market. In the other samples, men also appear in a greater number, 60.08% for the situation of another job and 58.53% for unemployment, and in both situations, the white race continues as most of the total of individuals.

Foreigners accounted for only 0.03% of the hiring, the disabled people about 0.41%, and concerning the legal nature, it is verified that the great mass of contracts of first employment occurs in the private sector, approximately 95%.

The Southeast region, which represents the country's largest economy, was the largest recipient of individuals entering the formal Brazilian labor market for the first time, with more than half the admissions, 50.53%, followed by the Northeast region with 17.61%. The region with the lowest number of new entrants was the North, with 6.45% of the total number of contracts. The Southeast also had a higher percentage than the others for those who go directly to another job (29.33%), but also showed a high percentage of young people who leave the first job for unemployment, 53.44%.

Occupations requiring a lower level of competence (CBO 4 to 9) constitute the majority of occupations carried out by young people when entering the market for the first time, around 89.12%, according to sample I. As some studies have noticed, young people tend to exercise more precarious activities when they enter the market. These categories also constitute a large majority in the other samples (II and III), and were shown with similar percentages.

As for the sectors, the activities developed by the young entrants in the formal Brazilian market are more strongly in the trade and services sectors, 38.25% and 32.63%, respectively. And the agriculture and fishing sector showed the lowest number of entrants, 2.48%. This pattern is also observed for young people who have gone to another job or to unemployment.

Only 2.41% of the total number of young people had completed higher education when entering the labor market in 2003, and about 37.05% of them had completed high school. The majority had lower schooling than full high school, which justifies the low quality of jobs and the required level of competence.

Micro and Small Enterprises represent the main gateway for young people seeking the formal job market. Approximately 73.21% of the total number of new entrants went to companies with such sizes.

Only 1.06% of the individuals were in the *overeducation* situation when entering 2003 for the first time in the Brazilian formal market. This small share can be quite significant when observing the small number of young people who had higher education. In addition, this analysis considers only young people who were between 16 and 24 years old, relatively low age to have already concluded a graduation, post-graduation, etc. It should also be noted that a few years ago it was even more difficult for young people to access university. This also clarifies the low level of schooling observed in the samples. The percentage of young people in situations of *overeducation* was similar for the other cases.

4.2. Analysis of the graphs of survival functions

The survival function graph shows the probability of survival of the individual for a given situation in a given time period. In this study, the probability of permanence of the young person in the first job is calculated for each month. Graphs 1 to 11 present these results for the main categorical variables used to estimate the duration models, considering the whole sample, regardless of whether the young person left the first job and went to unemployment or joined another job.

It is observed in Graph 1 that the probability of survival of the individuals of the Northeast region is lower than in the others for the whole studied period, and a drastic drop can be already noticed in the first ten months. North and Center-West appear with similar probabilities, and with probabilities superior to the one of the Northeast, although they are the ones that have smaller number of hiring. South and Southeast regions are shown to have higher probabilities than all others and with similar functions for all months studied.

Graph 2 shows that the occupational categories that require a lower level of competence (4 to 9) are the ones which are less likely to survive in the initial employment, for the whole period. Categories 2 and 3, although representing only about 9% of the total placements, showed a greater probability of permanence than the others and their functions are quite similar.

Graph 1 - Probability of Survival by Region by Occupational Category
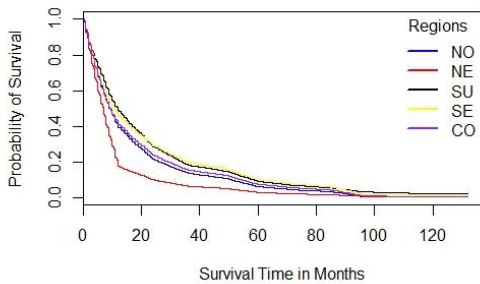
Graph 2 - Probability of Survival by

Source: Own elaboration.
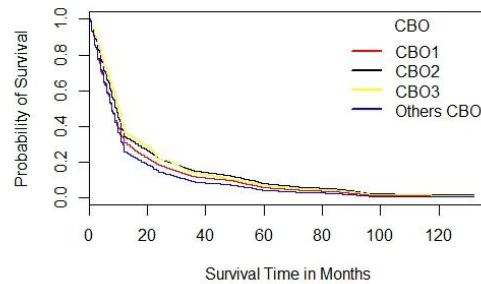
Source: Own elaboration.

With regard to economic activities, the civil construction sector exhibited the smallest, and the Industry sector the highest probability of survival, when compared with the others. Trade and services, which represent the main destination for young people when entering their first job, presented similar functions, as can be seen in Graph 3.

Micro and small enterprises, in addition to representing more than 70% of the total number of young firms that offer access to the first job, are also the ones that show the highest probability of survival, according to Figure 4. Medium- large probabilities have very similar probabilities of permanence for all months studied.

Graph 3 - Probability of Survival by Sector of Activity
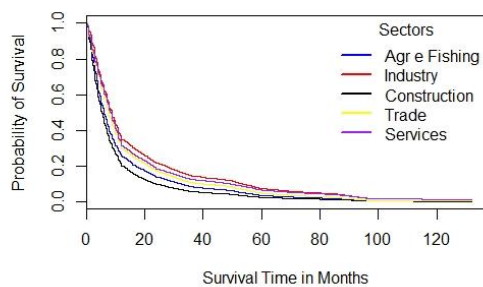
Graph 4 - Probability of Survival by Size of Company
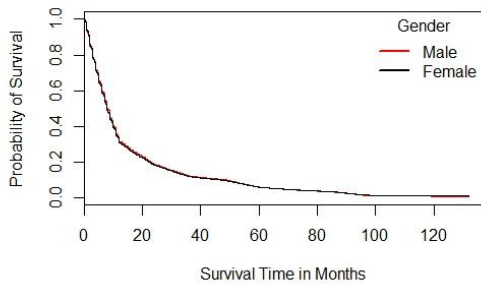

Source: Own elaboration.
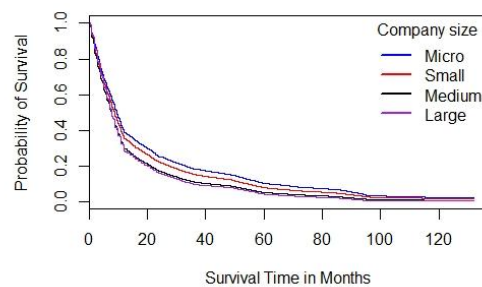
Source: Own elaboration.

Men and women showed similar probability of survival for the whole period analyzed, according to Graph 5. It can be observed that, regardless of sex, in the first 10 months there is a significant drop in the chance of the individual remaining in their initial employment.

When analyzed individually, nationality shows a higher probability of survival for foreigners, as can be observed in Graph 6. From the twentieth month in their initial work, the young Brazilian presents chances of approximately 10% of permanence, while that same probability is only reached by foreigners in the fortieth month.

Graph 5 - Probability of Survival by Gender

Graph 6 - Probability of Survival by Nationality
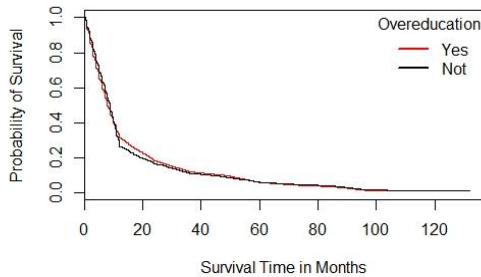

. Source: Own elaboration.
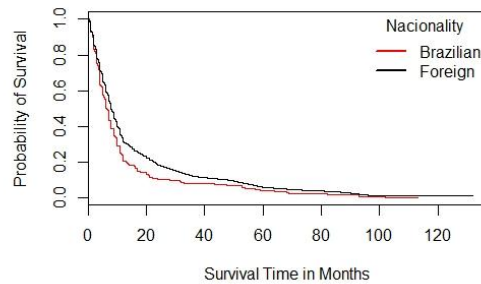
Source: Own elaboration.

According to Figure 7, the overeducated young person has a chance of remaining in the initial employment similar to those who are in compliance with employment and educational level. This may be very relevant when considering the small number of *overeducation* observed in the sample, indicating that even in a smaller amount, the young person in such situation may present the same probability of survival as the great majority, and in some periods the chance may be even greater.
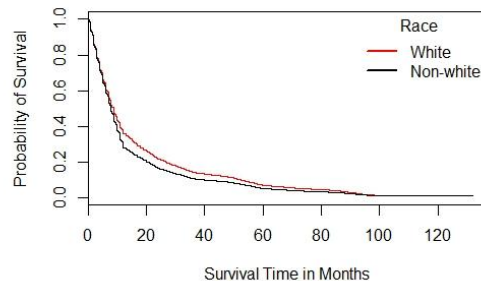
White youths, who represent the majority of the hiring, present a greater chance of survival than individuals of other races, and this can be observed from the tenth month of their admission, as can be seen in figure 8.

Graph 7 - Probability of Survival for the Situation of *Overeducation*

Graph 8 – Probability of Survival by Race
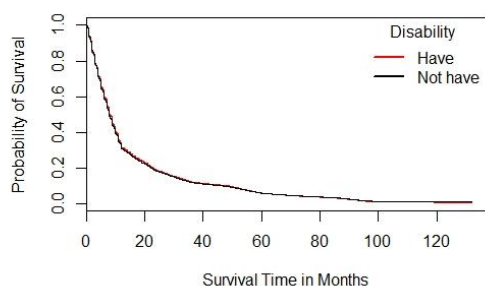

Source: Own elaboration.

Source: Own elaboration.

According to Graph 9, young people with some type of disability have a probability of remaining in their first activity practically equal to those who do not have any disability, throughout the studied period. Thus, one can observe a survival pattern of these individuals in the first job, which is not affected by this factor.

Figure 10 indicates that young people hired for the first job through a private legal nature are more likely to survive than those hired for public service. In the fortieth month, for example, the chances of permanence of individuals working through private contracts are greater than 20%, while for the others the perspective is close to 10%.

Graph 9 - Probability of Survival for Disability

Graph 10 - Probability of Survival by Legal Nature

Source: Own elaboration.
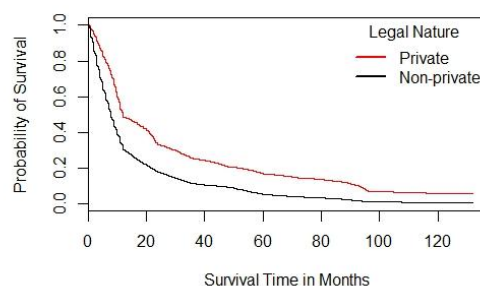
Source: Own elaboration.

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When analyzed separately, the level of schooling showed greater chances of survival for the individuals who remained with the same level of schooling when entering and leaving their initial employment, with great difference for those who increased their educational level, as shown in graph 11. This may indicate that the individuals who got qualified tried to seek better employment opportunities and may be justified by the fact that the vast majority of young people have remained with the same level of education with which they entered the market, as only 3.01% of young people progressed in the school level during first employment

Graph 11 - Probability of Survival by comparison of Level of Schooling between the entry and exit of the first job.
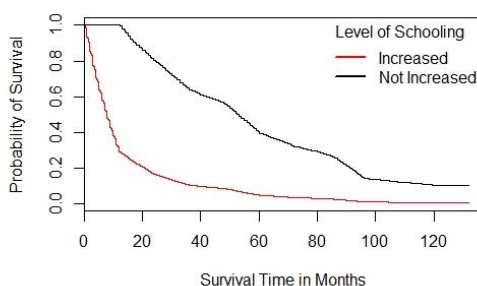
Source: own elaboration

4.2. Analysis of Econometric Estimates

Aiming to estimate the duration of young workers at the first job in the Brazilian formal market and to analyze the impact of the variables on the time, a Kaplan-Meier survival analysis model and Cox regressions were used in the RAIS data for the period between 2003 and 2013. The results of the estimates are explained in Table 2.

According to the results obtained, it can be observed that males tend to stay longer in the first job, as well as those who start in the market with a greater age, those with Brazilian nationality and those with disabilities. Thus, it is observed that women, in addition to entering the market in a smaller number, are more likely to leave than men. The same happens with foreigners, who present a small percentage of the total number of individuals who started their activities for the first time in the Brazilian formal market, and even then, they have lower chances of remaining in it. As for young people who have some kind of disability, their greater chance of permanence can be justified by the existence of quotas for their

category. According to Law No. 8213 of 1991, companies with more than 100 employees are required to allocate between 2% and 5% of vacancies to employees who have some special needs.

Table 2: Results of Econometric Estimates

Variables	Sample I		Sample II		Sample III	
	coef	exp(coef)	coef	exp(coef)	coef	exp(coef)
Man	-0.0524***	0.9489	-0.0806***	0.9225	-0.0430***	0.9579
Race	0.0818***	1.0852	0.0133*	1.0134	0.0772***	1.0803
Braziliam	-0.2400***	0.7866	-1.3771***	0.2523	-0.1468**	0.8634
Age	-0.0612***	0.9406	-0.0491***	0.9521	-0.0611***	0.9407
Northeast	-0.1335***	0.8750	-0.3656***	0.6938	-0.1116***	0.8944
South	-0.3027***	0.7388	-0.2127***	0.8084	-0.3286***	0.7199
Southeast	0.2346***	1.2644	-0.2304***	0.7942	0.2365***	1.2669
Midwest	-0.0639***	0.9381	-0.0729***	0.9297	-0.05001***	0.9511
lncome	0.1494***	1.1612	-0.0500***	0.9512	0.1732***	1.1891
Disability	-0.1737***	0.8405	-0.3435***	0.7093	-0.1448***	0.8651
CBO1	0.0088	1.0089	-0.0275	0.9728	-0.0081	0.9919
CBO2	0.0230***	1.0233	0.2704***	1.3104	-0.0090	0.9910
CBO3	-0.0585***	0.9432	-0.0509***	0.9503	-0.0553***	0.9462
Legal Nature	0.3492***	1.4180	0.8377***	2.3111	0.3479***	1.4161
Industry	-0.2829***	0.7536	-0.3244***	0.7229	-0.2687***	0.7644
Construction	0.1221***	1.1298	0.2522***	1.2869	0.1200***	1.1275
Trade	-0.2074***	0.8127	-0.1172***	0.8894	-0.2004***	0.8184
Services	-0.1551***	0.8563	-0.0404	0.9604	-0.1511***	0.8597
Schooling_(exit)	-0.0680***	0.9342	-0.0815***	0.9217	-0.0633***	0.9386
Schooling_(change)	-1.0378***	0.3542	-0.9045***	0.4047	-1.1057***	0.3310
Microcompany	0.1172***	1.1244	0.1265***	1.1348	0.1048***	1.1105
Smallcompany	0.0895***	1.0937	0.1045***	1.1101	0.0892***	1.0933
Bigcompany	-0.0547***	0.9468	-0.0285***	0.9719	-0.0501***	0.9511
Overeducation	0.2395***	1.2706	0.2952***	1.3434	0.2254***	1.2528
R^2	0.137		0.164		0.134	

Source: Own elaboration based on econometric estimations.
Note: Levels of significance of the coefficients: (*) 10%; (**) 5%; (***) 1%.

The coefficients of the gender variable were also negative for both those who leave for another job and those who go to unemployment, indicating that males are less likely to leave the first job for any of the cases analyzed, compared to women. For another job, the risk of men leaving the initial activity is about 8% lower than the risk for women, and for the unemployment situation the risk is approaching, with the chance of leaving for young male being about 4% lower than the risk for the opposite sex.

For the variables representative of the regions, based on the North region, it is noticed that only the Southeast region presented positive coefficient, that is, in this region young people are less likely to remain in the first job for a longer period of time. In the other regions, they remain in their initial labor activity for a longer period of time, the South region being the most likely to remain, followed by the Northeast region. When compared to the North, young people of the Southeast have 26.4% more risk of leaving their first job. However, it is the region with the highest number of hiring and the greater risk can occur due to this.

If the individual exits from the first direct job to another, it is observed that for all the regions the coefficients presented negative sign, pointing that independently of the region, the individual is more

likely to remain in the initial job than to go directly to another job. For the individual who leaves his initial activity for an unemployment situation, similar results are observed, with the exception of the Southeast region, which presented a positive coefficient, that is, in this region the risk of the individual leaving his or her initial activity for unemployment is higher than in the others, based on the North region.

The Brazilian Classification of Occupations (CBO) shows that the coefficient is positive for category 2, and negative for category 3. In view of this, it can be said that, when compared to the categories that require a lower level of competence, mid-level technicians (competence level 3) are more likely to remain in the first job, while science and the arts professionals are at greater risk of leaving.

It can be observed that white individuals are more likely to leave the first job, as well as those who started with a higher income and those who were hired through a private legal nature, which was already expected, since they have less stability than those contracted for the public service and represent the majority of contracts.

An increase of one unit in the natural logarithm of the individual's income, all the more constant, roughly increases the exit risk of his or her initial job by 16%. For another job, the same increase reduces the chance of leaving the first job to go directly to another job, that is, a young person who is receiving a higher salary on his first job is less likely to leave it to join other. As for the unemployment situation, an increase of one unit in the natural logarithm of income will increase its probability of exit by about 19%.

The private legal nature contributes positively to the young person leaving the first job in all situations. However, it is worth noting that for the unemployed, the risk is 41.6% higher when compared to the public service, whereas for another job the risk is approximately 2.31 times higher. This shows that the probability of young people who work through a private legal contract leaving their initial job for another job is much higher than leaving for an unemployed situation, when compared to those admitted through law of non-private nature.

In relation to the National Classification of Economic Activities (CNAE), with the agricultural and fishery sector as the base, the industrial, trade and service sectors showed negative coefficients and the civil construction sector was a positive coefficient. Thus, it is inferred that young people tend to spend more time in their first job when they work in the industry, trade and services sectors, and are more likely to leave when working in the construction sector (approximately 13% higher risk), when compared to the agricultural and fishing sector.

With regard to the size of the company in which the individual started in the labor market, it is noticed that when individual start working in a large company, they are more likely to remain in it, that is, in their original activity. On the other hand, for micro and small companies the opposite happens - the probability of leaving is greater. According to Verhofstadt and Omey (2003), the work in large companies has a positive impact on the satisfaction of the individual in the first job.

The coefficient of the exit educational variable was negative, indicating that the higher the education level individuals have in their exit time the greater their probability of remaining in the first job, which may be due to the fact that the companies keep the employees who higher qualifications, or even because they have already started their work in jobs that demand a higher school level, offering them greater stability. In addition, the chances of an individual who has changed schooling during the first job leaving the same job is about 65% lower than those who remained with the initial level of schooling, the risk of leaving for another job is 60.5% lower and for the unemployment situation the exit probability is approximately 67% lower.

Although the percentage of young people in *overeducation* situation was small, the coefficient of the variable was positively related to the young person's exit from the first job. Thus, it is observed that the individual who is in such circumstance has greater risks of leaving the first job, about 27% higher than those who are in a situation of conformity between level of schooling and work. This also reinforces the literature of Verhofstadt and Omey (2003), according to which *overeducation* has a visible negative impact on job satisfaction.

In addition, overeducation was shown with positive coefficient for all the samples. However, significantly higher for another job, indicating, that the qualified individual has a greater chance of leaving the first job and going to another than to leaving for unemployment. The risk of a young

overeducated leaving their initial job to go to another job is 34.3% higher when compared to individuals who are in situation of matching between school level and work, and is 25.2% higher for the unemployment situation. Some variables, such as race, nationality, industry indicative, company size, occupational categories, and disability presented similar results for both new job and unemployment situation. In addition, they indicated coefficients with signals similar to those of the general regression.

5. FINAL CONSIDERATIONS

This study analyzes the duration of young people in their first job in the Brazilian formal job market, according to their individual characteristics, their role and the company in which they operate, as well as the variables that influence their permanence or exit from it. It is also sought to relate overeducation and first employment in Brazil, so far not observed by Brazilian literature.

The literature indicates that there is difficulty in the insertion of young people who are looking for a job in the Brazilian labor market for the first time, and when they manage to enter, they tend to work in more precarious occupations, and the low educational level is the main factor affecting it. In addition, it observes that some particular characteristics, such as sex and race, have an impact on the first work activity of the individual. Some authors also highlight the high turnover of young people in the labor market as being a determining factor for their high unemployment rates. And more recently, it has observed the first job as a factor that influences the future employment, and *overdeducation* as a trap that when observed in the initial activity can be repeated in future actions. Thus, this work contributes to the literature by investigating the duration of the youngster in the first job using Brazilian data, and by inserting *overeducation* in this analysis.

The results of the duration models showed that males are more likely to remain in the first job for a longer period, as well as those employed by non-private companies, those with disabilities, those with a higher level of schooling when entering in the initial job, and young people who get their first job in big companies. The southeastern region showed a greater risk of exit, and the construction sector proved to be the riskiest. Overeducated individuals were more likely to leave their initial job than those who were in a situation of conformity between level of schooling and work.

When comparing the estimates made for the individuals who left the first job directly to the other and those who left for the unemployment situation, results similar to the general regression for most of the coefficients were observed. However, it is worth mentioning the *overeducation*, although being negative for both cases, the risk of leaving for another job is significantly higher, thus indicating that the qualified young worker is more likely to be included in the job market.

Given the results, it can be inferred that the difficulty of the young person is not only to enter the labor market, but also to stay in it, given that the average survival time was only 1 year and 4 months, approximately. This is even more evident for females and for those with lower levels of schooling, since, in addition to exercising more precarious functions, they are more at risk of leaving their initial work activity.

Given this, there is a need for policies that promote not only the access of young to the formal labor market, but also their permanence in it. Such policies should also encourage the preparation and qualification of these individuals, giving priority to the quality of education and to the needs and requirements of the market. In addition, it should be noted to what extent individual characteristics are influencing hiring, in order to minimize the inequalities encountered.

REFERENCES
ABDALA, E. Jóvenes, educación y empleo en América Latina. **Papeles de POBLACIÓN** No. 33, CIEAP/UAEM, julho/setembro, 2002.
ALBUQUERQUE, L. S. G; PERO, V. **Mobilidade de Emprego Entre os Jovens Brasileiros**. Rio de Janeiro, Universidade Federal do Rio de Janeiro (2008).
ANNEGUES, A. C., *et al*. Overeducation e Área de Formação: evidências para os Egressos da UFPB, **Área 13 - Economia do Trabalho, ANPEC**. 2017.
BALLESTEROS, J. A.; ROSAL, M. P.O. Overeducation of Young Workers in Spain: How Much Does the First Job Matter? Social Indicators Research, **Springer Science+Business Media Dordrecht**, Soc Indic

Res, DOI 10.1007/s11205-017-1643-z, 2017.

BRASIL. LEI Nº 8.213, DE 24 DE JULHO DE 1991. Available on <http://www.planalto.gov.br/ccivil_03/LEIS/L8213cons.htm>. Accessed November 2018.

CAROLEO, F. E.; PASTORE, F. Overeducation: A Disease of the school-to-Work Transition System, Institute of Labor Economics, **IZA** Discussion Paper Nº 9049, 2015.

CARRIJO, B. C. P. S. **Análise do Primeiro Emprego e Seu Efeito Sobre a Trajetória Ocupacional do Jovem – 2002 A 2016**. Dissertação de mestrado. Universidade Federal de Goiás, 2017.

CONSUMER NEWS AND BUSINESS CHANNEL - CNBC. Disponível em <https://www.cnbc.com/amp/2018/06/25/why-your-first-job-out-of-college-really-really-matters.html>. Accessed October 2018.

COX, D. R. Regression Models and Life-Tables. **Journal of the Royal Statistical Society.** Series B (Methodological), Royal Statistical Society, v. 34, n. 2, p. 187–220, 1972.

DIAZ, M. D. M.; MACHADO, L. Overeducation e Undereducation no Brasil: Incidência e Retornos, **Estudos Econômicos**, São Paulo, 38(3): 431-460, 2008.

EVERITT, B. S.; HOTHORN, T. **A Handbook of Statistical Analyses Using R**, Second Edition. 2nd. ed. [S.l.]: Chapman & Hall/CRC, 2009.

FLORI, P. M. Desemprego de Jovens no Brasil. **Revista da Abet**, V. V, N° 1, Jan/jun. 2005.

GARCIA,F.F.; et al. A Condição do Jovem no Mercado de Trabalho Brasileiro: uma Análise Comparativa entre o Emprego e o Primeiro Emprego (1999-2009) **ECONOMIA & TECNOLOGIA**, 2010.

GUIMARÃES, A. Q.; ALMEIDA, M. E. Os jovens e o mercado de trabalho: evolução e desafios da política de emprego no brasil. **Temas de administração pública**, v. 8, n. 2, 2013.

HIGGINS, N. O. Youth Labour Markets in Europe and Central Asia. Università di Salerno and **IZA**. Discussion Paper No. 5094, July 2010.

KALBFLEISCH, J. D.; PRENTICE, R. L. **The Statistical Analysis of Failure Time Data (Wiley Series in Probability and Statistics)**. 1st. ed. Wiley-Interscience, 1980. Hardcover. ISBN 0471055190. Available on :<http://www.amazon.com/exec/obidos/redirect?tag=citeulike0720\&path=ASIN/0471055190>.

LAYARD, R.; NICKELL, S.; JACKMAN, R. **Unemployment: Macroeconomic Performance and the Labour Market.** 1. ed. Oxford, 1991.

MARIONI, L. S. Overeducation in the Labour Market: Evidence from Brazil, Dept. of Economics, University of Southampton. 2018.

MCGUINNESS, S. Overeducation in the labour market. **Journal of Economic Surveys**, 20(3):387-418, 2006.

MERONI, E. C.; TOSCANO, E. V. The persistence of overeducation among recente graduates, **Labour Economics** 48 ,120-143, 2017.

MINISTÉRIO DO TRABALHO E EMPREGO. **Classificação Brasileira de Ocupações**, 3a ed. Brasília: MTE, SPPE, 2010.

MINISTÉRIO DO TRABALHO E EMPREGO – MTE. **RAIS**. Available on: <http://trabalho.gov.br/rais>. Accessed July 2018.

MONSUETO, S. E.; BICHARA, J. S.; CUNHA, A. M. Mobilidade ocupacional e diferencial de renda: a experiência do Brasil entre 2002 e 2010. **Área ANPEC: 12 - Economia do Trabalho**. 2010.

MONTE, P. A.; ARAÚJO, T. P.; LIMA, R. A. Primeiro Emprego e Reemprego: Análise de Inserção Ocupacional e Duração do Desemprego no Brasil Metropolitano. **Economia e Desenvolvimento**, Recife (PE), v. 7, n. 1, p. 139-177, 2007.

ORGANIZAÇÃO INTERNACIONAL DO TRABALHO – OIT. **Emprego Juvenil**. Disponível em: <http://www.ilo.org/brasilia/temas/emprego/lang--pt/index.htm>. Acesso em junho de 2018.

REIS, M. Uma Análise da Transição dos Jovens Para o Primeiro Emprego no Brasil. **Revista Brasileira de Economia**, v. 69 n. 1 / p. 125–143, Jan-Mar 2015.

REIS, M; ÁGUAS, M. Duração do Desemprego e Transições Para o Emprego Formal, a Inatividade e a Informalidade. **Economia Aplicada**, v.18, n.1. 2014.

REIS, M. Overeducation, undereducation and labor earnings in Brazil: a panel data analysis, Rede de Economia Aplicada, **Instituto de Pesquisa Economica Aplicada**, Working Paper 87, 2015.

Serviço Brasileiro de Apoio às Micro e Pequenas Empresas - SEBRAE. **Anuário do Trabalho na Micro e**

Pequena **Empresa,** **2013**. Dispoível em: <http://www.sebrae.com.br/Sebrae/Portal%20Sebrae/Anexos/Anuario%20do%20Trabalho%20Na%20Micro%20e%20Pequena%20Empresa_2013.pdf>. Accessed November 2018.

VERHOFSTADT, E.; OMEY, E. The impact of education on job satisfaction in the first job, Faculteit Economie em Bedrijfskunde, Universiteit Gent, Working Paper, 2003.