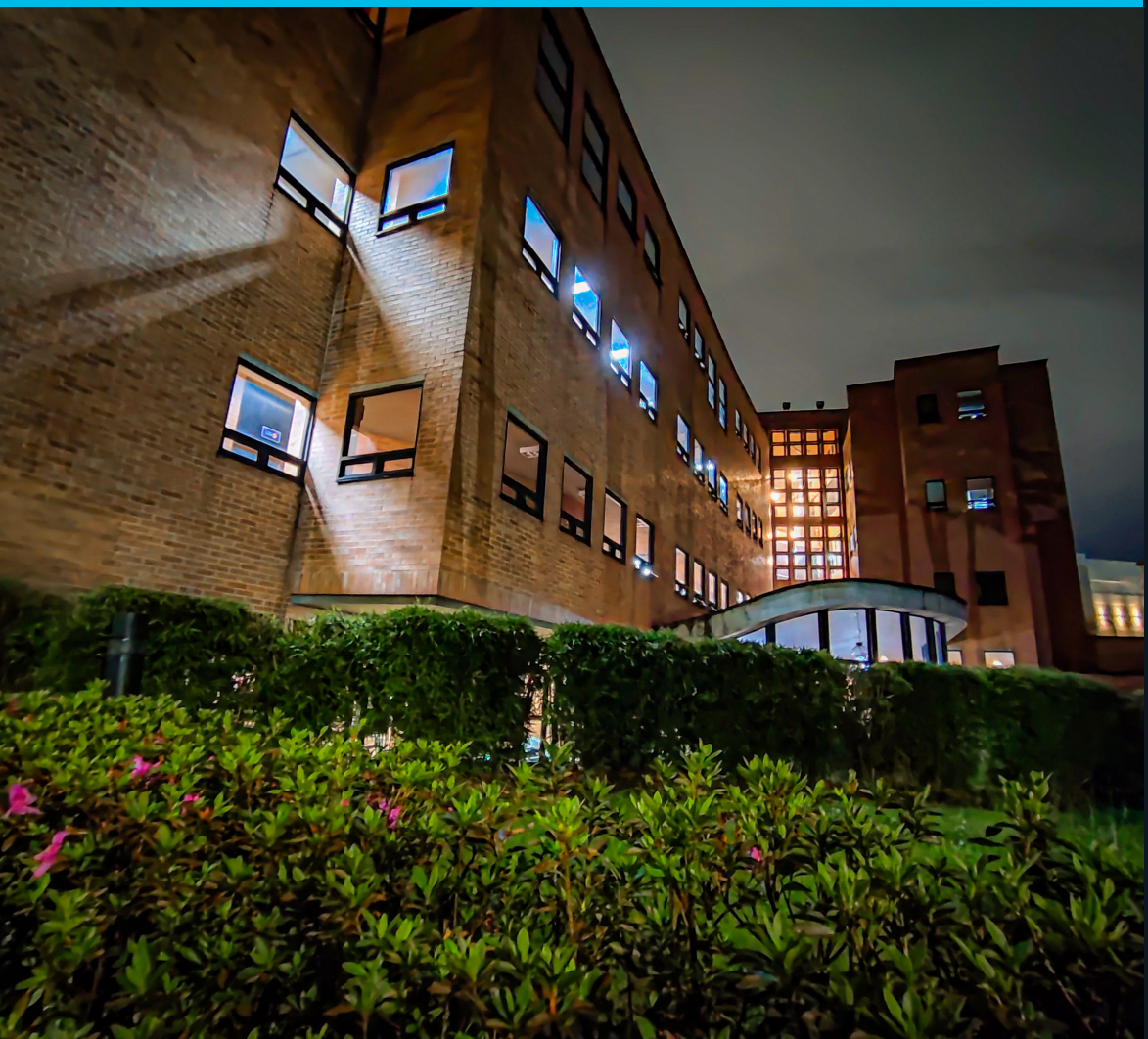




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SURVIVAL IN THE ARTS OCCUPATIONS: THE CASE OF BRAZILIAN STATE CAPITALS

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Machado, A. F., Furlan, M., Demattos, A., Sulurico, J., Cariêlo, F. U., & Guimarães, M. E. (2026). Survival in art occupations: The case of Brazilian state capitals. *Cuadernos de Economía*, 45(97), 203-229.

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Este artículo fue recibido el 9 de mayo 2024, ajustado el 24 de julio de 2025 y su publicación aprobada el 5 de agosto de 2025.

Artists' careers, whether pursued individually or collectively, are a vulnerable occupational choice. This susceptibility translates into significant intra-occupational earnings inequality and a shorter duration of occupational stability. Factors such as precarious job linkages, freelancing, and low income contribute to discouraging individuals from pursuing a career as an artist. To a considerable extent, young artists embark on this career path with the intention of showcasing and honing their creativity, talent, and abilities. Consequently, numerous authors emphasise the prevalence of an oversupply of artists, particularly amongst the youth, juxtaposed with lower demand for art due to consumers' income, education, and cultural preferences. To address this issue, the paper employs Kaplan-Meier's non-parametric survival models and Cox's semi-parametric model, comparing artists, those engaged in science professions, and the entire occupied workforce for comparison purposes. For Cox's model, standard control variables were established using the PNAD-Continuous, a household survey conducted between 2012 and 2022 in the capital cities of Brazilian states. The main findings reveal that the stability of art occupations in Brazil is more vulnerable when compared to occupations belonging to the group of Science Professionals and Intellectuals.

Keywords: Artist; Brazil; labour; survival.

JEL: Z1, J44, J64, E24.

Machado, A. F., Furlan, M., Demattos, A., Sulturico, J., Cariêlo, F. U., & Guimarães, M. E. (2026). Supervivencia en las ocupaciones artísticas: el caso de las capitales de los estados brasileños. *Cuadernos de Economía*, 45(97), 203-229.

Las carreras artísticas, emprendidas de manera individual o colectiva, constituyen una elección ocupacional vulnerable. Esta susceptibilidad se traduce en una significativa desigualdad de ingresos dentro de la propia ocupación y en una menor duración de la estabilidad laboral. Factores como los vínculos laborales precarios, el trabajo independiente y los bajos ingresos contribuyen a desalentar a las personas de seguir una carrera como artistas. En gran medida, los jóvenes artistas inician este camino con la intención de mostrar y perfeccionar su creatividad, talento y habilidades. En consecuencia, numerosos autores destacan la prevalencia de una sobreoferta de artistas, particularmente entre los jóvenes, en contraste con una menor demanda de artes condicionada por el ingreso, la educación y las preferencias culturales de los consumidores. Para abordar esta cuestión, el artículo emplea el modelo de supervivencia no paramétrico de Kaplan-Meier y el modelo semiparamétrico de Cox, comparando a los artistas con los profesionales de las ciencias y con el conjunto de la fuerza de trabajo ocupada. Para el modelo de Cox, se establecieron variables de control estándar utilizando la PNAD-Continua, una encuesta de hogares realizada entre 2012 y 2022 en las capitales de los estados brasileños. Los principales hallazgos revelan que la estabilidad de las ocupaciones artísticas en Brasil es más vulnerable en comparación con las ocupaciones pertenecientes al grupo de profesionales e intelectuales de las ciencias.

Palabras clave: artista; Brasil; trabajo; supervivencia.

JEL: Z1; J44; J64; E24.

INTRODUCTION

The unpredictability of public reception towards artists' work, whether such work is pursued individually or collectively, renders arts occupations highly vulnerable. This vulnerability, in turn, leads to shorter tenures in the profession. Precarious work arrangements, project-based engagements, and low income are contributing factors that discourage individuals from choosing a career in the arts. To a significant extent, young artists invest in this path with the intention of showcasing and validating their creativity, talent, abilities, and vocation. Consequently, numerous scholars have highlighted the surplus supply of artists, particularly among the youth, juxtaposed with a declining demand for artwork (Coulangeon et al., 2005; Bille & Jansen, 2018; Da Silva Henrique et al., 2023; Rosen, 1972).

In the context of Brazil, despite its diversity and cultural richness, this situation tends to be even more severe due to the unequal distribution of income and leisure time, coupled with low levels of education and the lack of robust public policies promoting culture. The situation worsened in the last six years, exacerbated by the effects of the pandemic that virtually halted in-person activities in 2020 and 2021 (Machado et al., 2022a).

Based on these circumstances, this article aims to analyse the occupational longevity of artists in Brazil's arts sector, focusing on those residing in state capitals and aged between 18 and 65 years old. The data source utilized for this analysis is the Continuous National Household Sample Survey (PNADC), a rotating panel survey conducted by the Brazilian Institute of Geography and Statistics (IBGE) with five household visits. As artists are more subject to career volatility, it is relevant to analyse the Brazilian case due to the importance of the sector in the country as well as the fact of this worldwide evidence (Eikhof & Warhurst, 2013; Hennekam & Bennett, 2017; Lindström, 2016) be possibly reflected in Brazil. For the purposes of analysing the volatility in the employment of artists, the study compares it with other groups of workers in Brazil, making a contribution to the analysis of the labour market for artists.

To compare the permanence of artists' occupations, the study applies Kaplan-Meier's non-parametric model and Cox's semi-parametric model to arts occupations, Science Professionals and Intellectuals (a category that encompasses a significant portion of arts occupations in Brazil), as well as all occupations in the country's labour market. Both models are usually used in studies of survival in the labour market, as they have the advantage of measuring the average length of permanence and the factors associated with a possible career interruption.

Bearing in mind all these issues, the article is divided into five sections, including this introduction. In the second section, an empirical and theoretical review of studies on the permanence of artists in their occupation is carried out. Next, the data source and econometric strategy are presented in the methodological section. The results of the descriptive analysis and the application of survival models are found in the fourth section and, finally, some considerations are pinpointed.

BRIEF THEORETICAL AND EMPIRICAL REVIEW OF ARTISTS' SURVIVAL IN THE LABOUR MARKET

Since the 1980s, artistic occupations have witnessed growth in Western economies (Menger, 2006). This trend, with its unique nuances and proportions, has also been observed in Brazil during the same period (Durand, 1989)¹. Menger (2006) attributes this expansion to the rise in the population's income and government support for the non-profit sectors. Similarly, as Durand (1989) suggests, Brazil has also developed the capacity to commercialize goods and services previously imported, which encouraged the professionalization of intermediaries and aspiring artists. However, the increase in the number of artists did not necessarily lead to a corresponding increase in job opportunities. The art labour market has shifted from offering stable contracts to short-term agreements and self-employment. It has become increasingly uncertain, forcing artists to navigate between periods of employment, unemployment, job seeking, and juggling multiple concurrent jobs (Eikhof & Warhurst, 2013; Hennekam & Bennett, 2017; Lindström, 2016).

Moreover, Menger (2006) argues that intercurrences do not guarantee success and career advancement. Artists must cultivate the ability to produce valuable outcomes, balance high productivity with professional autonomy, and take risks. Nonetheless, professional independence may be elusive since artists who fail to establish networks often face precarious circumstances. Therefore, it has long been recognized that each artist must manage their career as if it were their own business — this means that despite having creative talent, a lack of business acumen can hinder their success (Cauquelin, 2005; Moulin, 2007; Thornton, 2010, 2015). Furthermore, Menger (2006) characterizes the artistic occupational group as younger and more educated compared to the general workforce, with a tendency to concentrate in metropolitan areas with higher population densities, leading to a greater number of consumers and higher availability of cultural spaces.

Mathieu (2012) is at the forefront of research on artists' careers in creative industries and the cultural economy, incorporating both subjective and objective dimensions. The author's work delves into factors influencing horizontal and vertical mobility, drawing from diverse case studies spanning theatre, music, film, TV, visual arts, fashion design, and architecture across Asia, Europe, and North America². In short, this approach enables a comparative analysis of career-making within

¹ Following the IBGE occupational census data, the occupations are categorized based on hours worked and earnings. Durand demonstrates the expansion of activities such as decorators, architects, photographers, artisans, videographers, and visual artists under the headings sculptors and painters.

² Social mobility occurs through the transition of an individual from one social position to another in terms of occupation, prestige or income. There is both horizontal and vertical mobility. Horizontal mobility occurs through the transition from one social group to another located at the same level, while vertical mobility occurs through the transition from one social stratum to another.

specific industries and across different national contexts, examining aspects such as “boundarylessness boundedness” and “good and bad work”. Mathieu (2012) offers empirical and theoretical insights into various issues, such as career management, temporality, location, recognition processes, competition, uncertainty, gender dynamics, chance events, education-to-work transitions, mediators, the “individualization” of careers, and collaborative partnerships. They shed light on the trade-offs involved in art careers, underscoring both the positive and negative aspects of various phenomena.

In further empirical analysis, some studies probe the reasons behind artists’ decisions to stay (or not) in the job market. For instance, Coulangeon et al. (2005) investigated potential gender differences in career paths and professional recognition within the performing arts field in France from 1980 to the years 2000s, focusing on musicians, actors, and dancers. The authors tested the hypothesis that, in general, women take longer to reach certain career milestones than men, while controlling for other factors. The data used in this study originated from a workers’ association in France that conducted an annual survey of performing arts workers, creating a longitudinal database for each profession. To evaluate the impact of gender and the interaction between age and gender on permanence, survival functions for male and female workers in each of the three professions were employed, followed by multivariate analysis based on the Cox model. The results showed that musicians were the only category in which a purely gender-related discrimination effect could be observed. However, among actors and dancers, when controlling for working conditions (such as work sector and home life characteristics), no gender-specific effects could be found. Nevertheless, the authors stressed that similar to other occupations, in the three analysed professions, men and women did not experience the same working conditions, received unequal pay, or had different career trajectories.

Through an empirical study of German theater productions, Eikhof et al. (2012) demonstrate the positive and negative effects of two main career characteristics in the creative industries: “project-focused” and “boundaryless.” The authors argue that artistic careers are marked by flexibility but also insecurity, as work contracts are temporary and depend on an individual’s reputation within the sector, as well as on personal networks. Analysing interviews with members of various German theater companies between 2000 and 2003, in addition to secondary data, Eikhof et al. (2012) reveal that while the flexibility in the German theater career offers “freedom”, it also has many limitations. Supporting the authors’ hypothesis, careers in the German theater sector are individualized: a lack of traditional organizational procedures for human resources, job positions are temporary, and recruitment relies heavily on personal contacts and individual reputation. Consequently, each artist bears the responsibility of planning, developing, and managing their own career in the German theater sector. To achieve success, artists must adapt to the mobility and flexibility requirements and always be available to meet the sector’s demands.

Applying non-parametric and semi-parametric survival models to secondary data from Denmark (Statistics Denmark) spanning 1996 to 2012, Bille and Jensen (2018) assess the impact of formal artistic education on artists' survival in the art world. As noted, artistic work tends to attract mainly young individuals, with only a few remaining in their careers for over ten years. The results from the Kaplan-Meier non-parametric model reveal that, on average, only 20% of artists remain active in their artistic occupation after a decade of professional activity. Among the different occupations analysed, actors and directors have the highest exit rates, with 40% leaving their careers within a year. On the other hand, journalists, writers, and authors tend to stay longer, as only 20% leave after a year, and more than 30% survive in their respective art occupations after ten years (Bille & Jensen, 2018).

When examining the factors associated with leaving, as per the Cox model, Bille and Jensen demonstrate that arts education is not a significant factor for dancers and visual artists to persist in their occupations. On the other hand, high income encourages artists to continue with their careers, and as experience grows, the risk of leaving decreases. Visual artists and writers face an accelerated exit when they have a second job, and high unemployment in the economy impacts the likelihood of visual artists, musicians, and writers leaving their artistic occupations. Gender also plays a role, affecting the tenure of visual artists and writers. Being a woman influences the likelihood of surviving as a visual artist while being a man affects the tenure of journalists. Overall, among older people, the exit rate is higher for journalists and writers, and lower for visual artists (Bille & Jensen, 2018).

In a study conducted by Da Silva Henrique et al. (2023) examining the survival of musicians in the city of Belo Horizonte, in Brazil, through a survey in 2020, personal characteristics such as gender and race were found to have no effect on musicians' longevity in the occupation. However, the COVID-19 pandemic has reduced the probability of remaining in the occupation, especially during the first 120 days of analysis. In the univariate analysis using the Kaplan-Meier non-parametric model, higher education, specifically in music, emerged as a fundamental factor for artists' continuity in their occupation. Additionally, in line with Bille and Jensen (2018), the results from the Cox model indicate that higher income contributes to career continuity. Conversely, factors such as being over 40 years old, being self-employed, not contributing to social security, and holding other jobs decrease the length of one's musical career (Da Silva Henrique et al., 2023).

In another methodological strategy, Guadarrama et al. (2021) analyses the effects of the COVID-19 pandemic on the complex manifestations of labour precariousness in the responses of creative and cultural workers. Five selected case studies from Latin America are examined using a range of predominantly qualitative perspectives. Precarity — previously normalized — emerged as a deeply rooted condition, especially among those whose work depends on live public engagement. Despite the severity of the crisis, many CCWs demonstrated both adaptive and

transformative resilience. They employed digital platforms, social media, and technological innovation to maintain connections with their audiences and generate income. However, the outcomes of these strategies were uneven, often constrained by limited access to technical and financial resources, and by the commercial logic of dominant digital platforms that favor larger producers.

The theoretical and empirical evidence presented in this section demonstrates that artists' careers are susceptible to interruptions and early terminations, both in developed and developing countries. In light of this, our study focuses on examining arts occupations in Brazil in comparison with other occupational groups. Our research mainly aims to understand whether a higher likelihood of career abbreviation can be found in the art labour market and, if so, to identify the contributing factors responsible for this situation.

METHODOLOGY

The article utilizes non-parametric Kaplan-Meier and Cox semi-parametric survival models with data from PNAD-Continuous, specifically two interviews conducted within the year. The analysis considers three groups: artists, professionals in Science and Intellectual fields (which includes artists), and the overall occupied population, allowing for meaningful comparisons. This section presents the database, econometric models employed, as well as the sample and selected variables for the study.

Database

The PNAD-Continuous is a sampling research initiative that conducts a monthly household survey, yielding quarterly results. This survey encompasses various aspects, including detailed records and figures related to the labour market in Brazil and other subnational entities. Commencing in 2012, the survey ensures statistical representation at the level of capital cities. According to the IBGE (2016), the survey generates indicators related to the labour force and this sample to provide results for various geographic areas in Brazil, including Municipalities of Capitals.

One of the main advantages of the survey's database generated is the possibility to monitor individuals every three months for up to a year. For the purposes of this study, the panel formed by the first and second interviews from the PNADC/T data is considered, allowing individuals to be monitored for a quarter semester. To pair the interviews, the following PNADC/T variables were used: Federation Unit (UF), Primary Sampling Unit (UPA), Stratum, Household Number, Panel, Sex, Year of Birth, Month of Birth, and Day of Birth.

Artistic occupations are categorized based on the mix of occupations from the Brazilian Classification of Occupations for Household Survey (COD) from IBGE and

the National Classification of Economic Activities (CNAE)³. Artists are considered to be individuals in occupations listed in Chart 1 who are inserted in the sectors of activity listed in Chart 2. The specific details can be found in Charts 1 and 2 below.

Chart 1.

Brazilian occupational classification for household survey

Base Groups	Description
2641	Writers
2651	Visual artists
2652	Musicians, singers, and composers
2653	Dancers, and choreographers
2654	Cinema, theater, and performance directors
2655	Actors
2656	Radio, television, and other media presenters
2659	Creative and interpretative artists not classified previously

Source: Prepared by the authors based on Brazilian Classification of Occupations for Household Survey (COD) from IBGE.

Chart 2.

Segments: National classification of economic activities 2.0

Base Groups	Description
59000	Cinematographic activities, video & TV production, and sound & music recording
60001	Radio activities
60002	Television activities
90000	Artistic, creative, and entertainment activities

Source: Prepared by the authors based on National Classification of Economic Activities (CNAE) from IBGE.

Kaplan-Meier and Cox models

The representation and organization of data for analysing individual survival denoted as i ($i = 1, \dots, n$) is presented as (t_i, δ_i) , where t_i represents the time of

³ Available at:

https://ftp.ibge.gov.br/Trabalho_e_Rendimento/Pesquisa_Nacional_por_Amostra_de_Domicilios_continua/Trimestral/Microdados/Documentacao/Estrutura_Ocupacao_COD.xls
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failure or censorship and δ_i is the variable indicating the failure or censorship status. To clarify:

$$\delta_i = 1 \text{ if } t_i \text{ is a time of failure } 0 \text{ if } t_i \text{ is a time of censorship}$$

The transition from an active state to an inactive state at the workstation is represented by a non-negative random variable T , which is integrated into the survival function (also known as failure rate) denoted as $S(t)$ for individuals who continue to be engaged in the occupation over time t . This function is given by:

$$S(t) = P(T \geq t)$$

The risk function $h(t)$ encompasses the probability of the transition (failure) occurring within a particular time interval $[t_1 + t_2]$, which is represented in the survival function as $S(t_1) - S(t_2)$. The risk function can be understood as the expectation of transitioning out of the respective occupation within the interval $[t_1 + t_2]$. This is mathematically expressed as follows:

$$\frac{S(t_1) - S(t_2)}{(t_2 - t_1)S(t_1)}$$

By integrating the interval as $[t, t + \Delta t]$, we find:

$$h(t) = \frac{S(t) - S(t + \Delta t)}{\Delta t S(t)}$$

In which at $\Delta t h(t)$, the lowest value $h(t)$ represents the failure rate (transition) at the exact moment of time t concerning the continuation in the occupation up to time t . Consequently:

$$h(t) = \frac{P\left(t \leq T < t + \frac{\Delta t}{T} \geq t\right)}{\Delta t}$$

If Δt approaches zero, the risk function signifies the limit of the ratio between the likelihood of the event occurring between t and Δt , given that the individual remained in the occupation from time T until the time of occurrence. Upon leaving the occupation, it is possible to calculate both the survival function and the probability of the individual remaining in the occupation throughout the entire period t .

In contrast, the risk function represents the probability of leaving, considering that the individual has stayed in the occupation up to that specific moment.

The estimator introduced by Kaplan and Meier (1958) assumes the independence of events and conditional probability while investigating the time t of active permanence in the occupation among a series of independent elements that characterize the active situation in the occupation during each time interval before t . The probability is conditioned on the individuals who are at risk during each follow-up period. This approach is appropriate since it considers the information gathered from different survival periods (t_1, t_2, \dots, t_n) to be independent and identically distributed. This statistical formalization can be understood as follows:

$$\hat{S}(t) = \prod_{i/t_i < t} \left(1 - \frac{d_i}{n_i}\right)$$

Where d_i represents the number of failures that occur at time t_i , n_i is the number of observations at risk (those that neither failed nor were censored) up to time t_i , and d_i/n_i represents the risk function. The *chosen* endogenous variable is the time until failure occurs, which indicates the transition of leaving the occupation. This estimator can thus provide the probability of an individual remaining in the occupation during a specific period.

Additionally, the Cox proportional hazards model is employed to estimate the factors associated with the risk event, i.e., leaving the occupation due to unemployment or inactivity. The Cox model is a semi-parametric model that does not specify the risk function. According to Cameron and Trivedi (2005), the conditional risk rate $\lambda(t|x)$ is determined by the product of two factors:

$$\lambda(t|x, \beta) = \lambda_0(t)\varphi(x, \beta)$$

Where $\lambda_0(t)$ denotes the baseline hazard function, which is not specified, and $\varphi(x, \beta)$ represents the covariates x . Consequently, a semi-parametric model is employed, featuring an unspecified functional form for $\lambda_0(t)$ and a specific functional form for $\varphi(x, \beta)$. Assuming the exponential form for $\varphi(x, \beta)$, we have that:

$$\varphi(x, \beta) = \exp(x'\beta)$$

Suppose, for instance, that the j th regressor x_j increases by one unit while the other regressors remain unchanged. In such a scenario:

$$\lambda(t|x_{new}, \beta) = \lambda_0(t) \exp(x'\beta + \beta_j) = \exp(\beta_j) \lambda(t|x, \beta)$$

The updated risk is determined by multiplying the original risk by $exp(\beta_j)$. Consequently, changes in the regressors can be interpreted as having an exerting a multiplicative impact on the original risk.

Sample and selected variables

In this study, we consider individuals between 18 and 65 years-old residing in the state capitals of Brazil over a ten-year period (2012 to 2022). The analysis focuses on three groups: artists (Charts 1 and 2), and two comparison groups. Group 1 is formed by Science Professionals and Intellectuals (an occupational group in which artists are included, but, in this study, they are excluded) according to the IBGE’s COD. This group encompasses jobs in which activities need to be performed by qualified professionals with a high level of competence. In turn, Group 2 is formed by all those occupied in the labour market, excluding artists.

Table 1 presents the number of individuals in each of the three groups for each year of the series, both in the sample and the expanded sample⁴ within the state capitals of Brazil. In 2012, artists accounted for 0.38% of the total employed population in the sample and 0.46% in the expanded sample. As for Group 1, their share was 3.1% and 3.3%, respectively. However, in 2022, the proportion of artists decreased to 0.30% in the sample and 0.37% in the expanded sample. In comparison, Group 1 accounted for 1.6% and 1.7% of the respective samples.

These changes might be attributed to alterations in the sampling process due to a possible sub-representation of artists in the PNAD-Continuous, but they also might indicate a potential reduction in the number of individuals employed in the artistic sector in Brazil due to economic crises and the impact of the pandemic.

Table 1.

Sample dimension, artists and comparison groups, 2012-2022

	Sample			Expanded sample		
	Artists	Group 1	Group 2	Artists	Group 1	Group 2
2012	104	3286	26896	56404	1694824	12164182
2013	104	3661	27342	56632	1888378	12365882
2014	86	3997	28590	46696	2061839	12930388
2015	99	4188	29184	53622	2160236	13199004
2016	92	4248	28299	50045	2191357	12798641
2017	126	4245	29105	68737	2189592	13163365

(Continued)

⁴ The expanded sample was estimated according to the sampling weights provided by IBGE, using Stata svy.

	Sample			Expanded sample		
	Artists	Group 1	Group 2	Artists	Group 1	Group 2
2018	107	4715	30142	58156	2432289	13632287
2019	99	4901	31148	54106	2527963	14087374
2020	53	4433	25060	28905	2286624	11333766
2021	57	5437	27632	31018	2804599	12496953
2022	67	4141	21919	36548	2136084	9913120

Source: Prepared by the authors based on microdata collected from the Quarterly PNAD-Continuous, 2012-2022.

The estimation process incorporates the following control variables: year, region (Southeast, Northeast, North, South, and Central West), gender, age, self-declared race/ethnicity, education, income according to minimum wage ranges, tenure, and position (classified as a registered salaried employee, unregistered salaried employee, self-employed with social security contribution, self-employed without contribution, civil servant, and employer). Additionally, working hours are categorized into ranges (as specified in Chart 3).

Among the variables presented, two stand out: tenure and position. The inclusion of tenure allows for the construction of time survival in occupation, providing valuable insights into career duration and longevity within specific job roles. Regarding position, a distinction is made between the formal and informal sectors. The formal sector comprises positions such as registered salaried employees, civil servants, and employers. In contrast, the informal sector encompasses unregistered salaried employees, self-employed individuals with social security contributions, and those without contributions.

Chart 3.

Variables selected from PNADC

Variable	PNADC Code	Variable description	Type
Year	Year	Reference year	Dummy
Region	FU	Federative unit/State	Categorical
Gender	V2007	Gender	Dummy
Age	V2009	Age	Continuous
Self-declared race/ethnicity	V2010	Race/Ethnicity	Categorical
Education	VD3004	Highest level of education achieved (people aged five years or older)	Categorical

(Continued)

Variable	PNADC Code	Variable description	Type
Income according to minimum wage ranges	V403311	Total earnings according to minimum wage ranges	Categorical
Tenure	V4040	How long have you been on this job, up to [last day of the reference week]?	Categorical
Tenure	V40401	How long have you been on this job? (From one month to less than a year)	Continuous
Tenure	V40402	How long have you been on this job? (From one year to less than two years)	Continuous
Tenure	V40403	How long have you been on this job? (Two years or more)	Continuous
Position	VD4009	Occupational position and job category of the main job of the reference week for individuals aged 14 or older	Categorical
Working hours	VD4036	Range of hours usually worked per week in the main job for persons aged 14 or older	Categorical

Source: Prepared by the authors based on microdata collected from the Quarterly PNAD-Continuous, 2012-2022.

Table 2 displays that, among the artists in the period from 2012 to 2022, the predominance was: males (around 70%), self-declared white (around 59%), with complete secondary/incomplete higher education (around 48%), residing in the Southeast region of Brazil, receiving 1 to 3 minimum wages, and inserted in the informal sector. When comparing artists to the first group “Science Professionals and Intellectuals”, it appears that the second has a high participation of females (around 57%), with more self-declared white (around 67%), as well as more educated — more than 90% have completed higher education, with higher remuneration and greater insertion in the rather formal sector. In relation to comparison group 2 “All those employed”, there is a greater participation of women (around 46%) compared to artists, a greater number of black and brown people (53%) and a greater insertion in the formal sector (around 66%). In short, artists are closer to higher levels of education and income in terms of minimum wage.

Table 2.

Individual and jobs characteristics (%), artists and groups of comparison, Brazil, 2012-2022

	Artists	Group 1	Group 2
Women	30,62	56,68	46,56

(Continued)

	Artists	Group 1	Group 2
Men	69,38	43,32	53,44
Black workers	41,02	32,46	53,21
White workers	58,98	67,54	46,79
Unifinished primary school	5,70	0,26	13,99
Concluded primary/unfinished high school	7,17	0,47	12,37
Concluded high school/unifinished higher education	48,19	8,19	42,47
University degree	38,94	91,08	31,17
Informal sector	81,64	28,44	34,33
Formal sector	18,36	71,56	65,67
Up to half a minimum wage	5,04	1,23	4,71
Half a minimum wage	12,44	3,99	16,15
1 to 2 minimum wages	25,62	13,28	36,34
2 to 3 minimum wages	20,92	16,65	15,00
3 to 5 minimum wages	17,25	24,41	12,62
Five or more minimum wages	18,73	40,44	15,18
North	5,88	6,67	10,01
Northeast	20,57	17,22	22,25
Southeast	58,75	53,58	46,84
South	6,75	11,03	8,74
Central West	8,06	11,49	12,17

Source: Prepared by the authors based on microdata collected from the Quarterly PNAD-Continuous, 2012-2022.

JOB SURVIVAL AND ASSOCIATED FACTORS

Based on the analysis variables in this paper, Table 3 presents the job survival duration in months for artists and the two comparison groups between 2012 and 2022. The average length of time in the occupation is calculated for individuals employed in the first PNADC interview between the 2012 and 2022 based on information on the time in the occupation until the first interview measured in months. For the specific case of artists, the permanence (or not) in the occupation is considered based in the combination of occupations (Chart 1) with the sectors of activities in which they are inserted (Chart 2). The average survival time for artists in their occupation is 101 months, which is higher compared to Group 1 (86 months) and Group 2 (73 months). This pattern is observed across all selected variables, except for individuals earning more than five (5) minimum wages and those residing in capitals in the North region. For the higher-income range, all

individuals occupied in this category have a longer survival time, approximately 113 months, while artists remain for 108 months. Similarly, in the North region capitals of Brazil, employed individuals in Group 1 (Science Professionals and Intellectuals) have a survival time of 89 months, and artists have 86 months.

Focusing solely on artists, those who are male, white, have incomplete primary school or complete secondary school education, work in the informal sector, earn within the income range of three (3) to five (5) minimum wages, or earn more than five (5) minimum wages, tend to have longer tenure in artistic occupations. Rengers (2002) shows that for Dutch visual artists the artistic professional experience is positively related to their career development. More experienced artists, in general, perform better than artists in the beginning of their career. Additionally, in the specific case of this work, artists residing in the capitals of Southeast, South, and Central West Brazil also demonstrate longer tenures, exceeding the overall average of 101 months.

Table 3.

Average tenure in months according to individual and job attributes, artists and comparison groups, 2012-2022⁵

	Artists	Group 1	Group 2
Total	101	86	73
Women	86	86	69
Men	107	87	76
Black workers	99	83	68
White workers	102	88	78
Unfinished primary school	127	100	80
Concluded primary/unfinished high school	86	74	64
Concluded high school/unfinished higher education	102	60	62
University degree	98	89	87
Informal sector	102	78	71
Formal sector	94	90	74
Up to half a minimum wage	74	45	46
Half a minimum wage	103	49	51
1 to 2 minimum wages	89	59	59
2 to 3 minimum wages	100	72	80

(Continued)

⁵ Maximum occupation time considered: 300 months at the first interview.

	Artists	Group 1	Group 2
3 to 5 minimum wages	116	85	93
Five or more minimum wages	108	108	113
North	86	89	68
Northeast	96	84	69
Southeast	103	86	75
South	102	88	76
Central West	103	90	73

Source: Prepared by the authors based on microdata collected from the Quarterly PNAD-Continuous, 2012-2022.

Although artists exhibit a longer average survival time compared to other groups, their exit rate is higher than that of the other groups. This difference can be attributed to two key factors: the greater standard deviation of artists' survival time and, more importantly, the fact that those who manage to stay in the occupation have significantly longer tenures than individuals in Groups 1 and 2.

These findings are supported by the results of the Kaplan-Meier model. The survival analysis conducted through this model indicates that in a three-month interval (from the first to the second interview), the average time spent in an artist's career is lower than that of Science and Intellectual Professionals overall between 2012 and 2022 (Figure 1). By the second interview, approximately 85% of the comparison group remained employed, while only 70% of artists were still occupied. Despite both groups having similar levels of education, the artists' lower survival can be attributed to their precarious working conditions. Unlike Science Professionals and Intellectuals, who often have formal work contracts such as civil servants and formally registered employees, artists tend to face less secure employment conditions⁶.

When comparing the average tenure of artists with the broader group of workers, it appears to be quite similar. Approximately 70% of artists remain in their occupation between 2012 and 2022 (Figure 2).

In our analysis of the survival function of artists with respect to regional variables, personal attributes, and job positions, we have discovered some intriguing results. When considering all Brazilian regions, including the North, Northeast, Southeast, South, and Central West, a notable finding emerges: artists residing in the less developed regions, specifically the North and Northeast, tend to have a shorter survival time in their occupation. It is evident that the local market in these regions might not be as capable of absorbing job opportunities compared to regions with

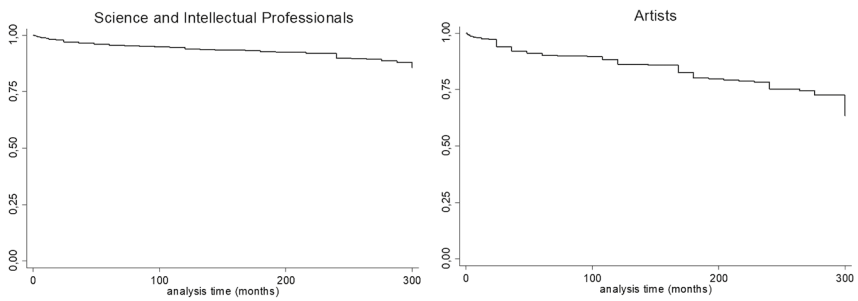
⁶ For more information on the different positions in occupation in the Brazilian labour market, see Maciel and Hermeto (2018).

higher levels of education and greater consumer income, as observed in the Southeast and South regions (Figure 3).

Figure 4 illustrates that approximately 75% of men continue in the occupation between 2012 and 2022, whereas this is the case for less than 55% of women. These findings align with the observations made by Coulangeon et al. (2005) regarding musicians, actors, and dancers, as well as by Da Silva Henrique et al. (2023) in the context of musicians, and by Bille and Jensen (2018) for the categories of artists under analysis.

Figure 1.

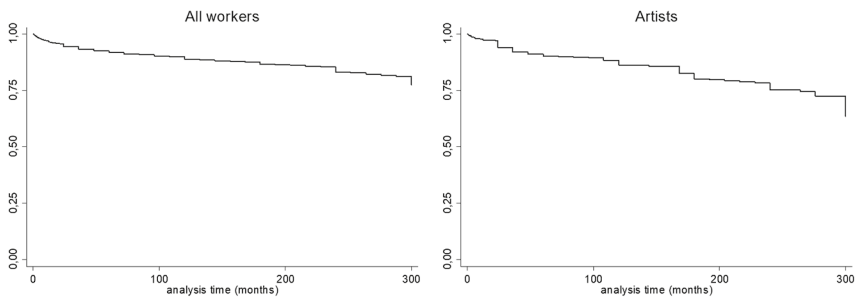
Survival function (Kaplan-Meier): Artists and Science and Intellectual Professionals



Source: Prepared by the authors based on microdata collected from the Quarterly PNAD-Continuous, 2012-2022.

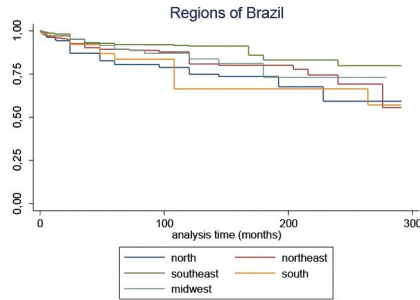
Figure 2.

Survival function (Kaplan-Meier): Artists and all occupied workers



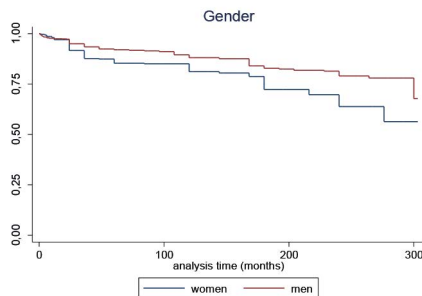
Source: Prepared by the authors based on microdata collected from the Quarterly PNAD-Continuous, 2012-2022.

Figure 3.
Survival function (Kaplan-Meier): Artist by region



Source: Prepared by the authors based on microdata collected from the Quarterly PNAD-Continuous, 2012-2022.

Figure 4.
Survival function (Kaplan-Meier): Artists by gender



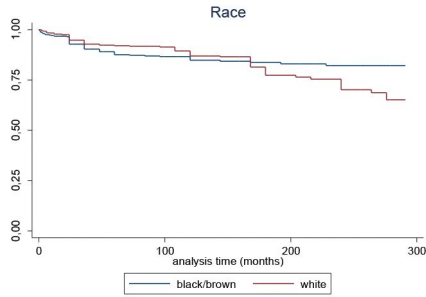
Source: Prepared by the authors based on microdata collected from the Quarterly PNAD-Continuous, 2012-2022.

Regarding race/ethnicity, the survival function portrayed in Figure 5 reveals that approximately 90% of artists who self-identify as white remain in their occupation for more than five years, while among black and brown workers this figure is 85%. However, black workers have a higher permanence in the occupation after fifteen years.

Workers with higher education are more likely to have longer tenures in art occupations, which is supported by the literature (Bille & Jensen, 2018; Da Silva Henrique et al., 2023). Additionally, it is worth noting the relatively lower exit rates of artists who completed secondary education. The demand for artistic works is closely tied to the specialized context of art and its research, resulting in markets that may be less extensive compared to those linked to media, naïve, and popular works. The latter are more adaptable to the context of general consumption

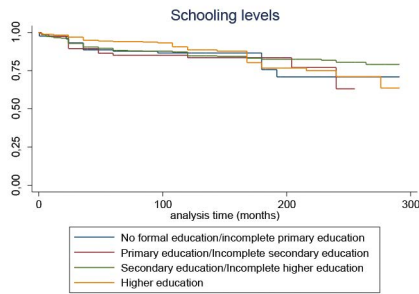
and may have a greater appeal to individuals with lower levels of education, both among producers and consumers (Abbing, 2002; Bourdieu, 1996). Consequently, this situation can potentially create more opportunities for survival among producers associated with these genres within the Brazilian context.

Figure 5.
Survival function (Kaplan-Meier): Artists by race/ethnicity



Source: Prepared by the authors based on microdata collected from the Quarterly PNAD-Continuous, 2012-2022.

Figure 6.
Survival function (Kaplan-Meier): Artists by educational level

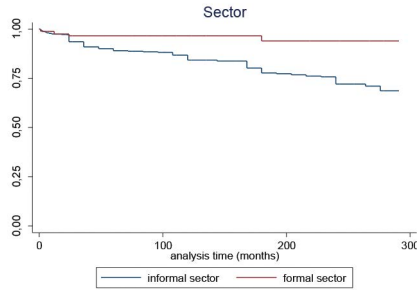


Source: Prepared by the authors based on microdata from the Quarterly PNAD-Continuous, 2012-2022.

Regarding job characteristics, it is evident that artists in informal occupations experience less job permanence, which aligns with the findings in the literature and indicates increased vulnerability (Figure 7). Additionally, unregistered and self-employed workers who do not contribute to social security are also less likely to remain in the occupation, as evidenced by both Bille and Jensen (2018), and Da Silva Henrique et al. (2023). However, Bille et al. (2013) indicate that artists give

less importance to other aspects, i.e., job security, when referring to their level of satisfaction with their work position.

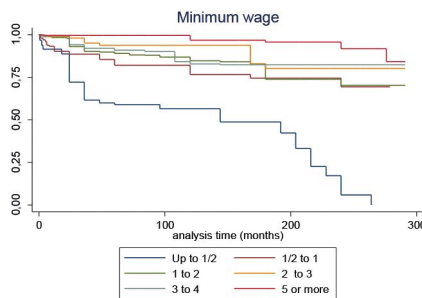
Figure 7.
Survival function (Kaplan-Meier): Artists by position



Source: Prepared by the authors based on microdata collected from the Quarterly PNAD-Continuous, 2012-2022.

As depicted in Figure 8, in the case of income, it is evident that the survival rate in the occupation of artists is higher for the highest income ranges (2 to 3 minimum wage and five or more). On the other hand, Steiner and Schneider (2013) — using the German Socioeconomic Panel Study (SOEP) — test if artists derive less utility from income than other workers. As for the artists, the effect is negative.

Figure 8.
Survival function (Kaplan-Meier): Artists by minimum wage ranges



Source: Prepared by the authors based on microdata collected from the Quarterly PNAD-Continuous, 2012-2022.

Moving on to a multivariate analysis of the factors associated with staying in artistic occupations, we present the results of the Cox model in two ways (Tables 4 and 5). As education is closely related to income, the first model includes education

and other variables (Table 4), while the second model replaces education with income (Table 5). For reasons of statistical significance, only the factors with a z statistic greater than 1.6 are analysed.

Upon analysing Table 4, it becomes evident that among artists, those with complete high school education, complete higher education, male individuals, residents of the Southeast region, and those in formal employment, tend to have higher chances of remaining employed in artistic occupations. Additionally, as individuals advance in their lifecycles, their chances of staying employed as artists also increase. Rengers (2002), aforementioned, shows that the work experience — more than formal education — is a pivotal factor to define artists’ income, hence, indirectly, their permanence. In the case of the year dummies, which indicate the effects of the economic situation on survival in the occupation, only the years 2017 and 2022 were statistically significant, suggesting a higher rate of leaving the occupation during those periods. It is worth noting the adverse effect of the economic situation in the most recent period.

For Group 1 (Science Professionals and Intellectuals), factors other than those affecting artists are noticeable. Workers with a workload of over 40 hours per week tend to have higher survival rates in their occupations; 2016 was the worst year in terms of job exit rate for Group 1 workers. As for all those employed in the capitals, the significant difference between the two previous groups is associated with the economic situation, as the exit rate was high between 2016 and 2022. This group experienced the adverse effects of the economic crisis on their job survival the most, likely because it comprises manual workers and individuals with lower levels of education compared to artists and those in Group 1.

Table 4.

Cox model estimation, artists and comparison groups

	Artists		Group 1		Group 2	
	Risk ratio	Z Statistic	Risk ratio	Z Statistic	Risk ratio	Z Statistic
Schooling (unfinished primary school)						
Concluded primary school/unfinished high school	0,772	-0,49	1,076	0,23	1,000	0,00
Concluded high school/unfinished higher education	0,556	-1,68	0,702	-1,25	0,784	-9,01
University degree	0,503	-1,70	0,237	-5,22	0,360	-27,42
Gender (male)	0,513	-2,56	0,785	-3,32	0,596	-25,93

(Continued)

	Artists		Group 1		Group 2	
	Risk ratio	Z Statistic	Risk ratio	Z Statistic	Risk ratio	Z Statistic
Race/Ethnicity (white)	1,544	1,45	0,974	-0,39	0,944	-2,42
Age	0,970	-1,72	0,950	-11,18	0,955	-37,51
Region (Southeast)						
North	2,587	2,56	1,628	4,80	1,374	10,08
Northeast	1,686	1,56	1,431	4,01	1,273	8,03
South	2,163	2,06	1,030	0,31	1,150	3,27
Midwest	1,696	1,40	1,148	1,48	1,114	3,22
Position (formal occupation)	0,232	-2,77	0,415	-11,85	0,476	-31,99
Hours worked (over 40)	0,756	-0,76	0,632	-6,92	0,547	-27,28
Year (2012)						
2013	1,091	0,15	1,315	1,77	1,097	1,93
2014	0,805	-0,41	1,181	0,91	0,986	-0,29
2015	1,246	0,45	1,137	0,72	1,007	0,14
2016	1,219	0,42	1,580	3,05	1,233	4,48
2017	2,248	1,65	1,571	3,00	1,271	5,00
2018	1,310	0,54	1,136	0,83	1,174	3,45
2019	0,936	-0,11	1,439	2,43	1,136	2,52
2020	1,666	0,80	1,130	0,70	1,260	4,04
2021	0,415	-1,02	0,368	-4,44	0,740	-2,83
2022	2,783	1,68	1,381	2,07	1,342	5,89

Source: Prepared by the authors based on microdata collected from the Quarterly PNAD-Continuous, 2012-2022.

Table 5 shows that artists with income in all ranges of minimum wages tend to stay longer than those who earn up to half a minimum wage. Contrary to the model with education, white artists remain less than black and brown artists, with 2017 as the year in which most artists left their occupation. For the other two groups, it is evident that workers who earn more tend to stay longer in the occupation.

Table 5.
Cox’s model estimation, artists, and comparison groups

	Artists		Group 1		Group 2	
	Risk ratio	Z Statistic	Risk ratio	Z Statistic	Risk ratio	Z Statistic
Minimum Wage (up to 1/2)						
1/2 to 1	0,328	-2,96	0,531	-4,89	0,580	-15,79
1 to 2	0,215	-3,84	0,346	-8,45	0,342	-30,37
2 to 3	0,107	-5,05	0,200	-11,92	0,184	-38,43
3 to 4	0,146	-3,35	0,114	-16,09	0,113	-40,66
5 or more	0,055	-4,53	0,063	-18,65	0,073	-41,89
Gender (male)	0,553	-2,41	0,969	-0,44	0,760	-13,41
Race/Ethnicity (white)	1,569	1,65	1,074	1,01	1,027	1,11
Age	0,978	-1,41	0,956	-10,39	0,962	-33,72
Great regions (Southeast)						
North	1,709	1,49	1,448	3,66	1,142	4,11
Northeast	1,080	0,22	1,138	1,43	0,997	-0,08
South	1,865	1,46	1,010	0,11	1,199	4,31
Midwest	1,629	1,26	1,230	2,27	1,147	4,16
Position (formal occupation)	0,355	-1,87	0,502	-9,37	0,592	-21,99
Hours worked (over 40)	0,851	-0,43	0,862	-2,17	0,726	-13,42
Year (2012)						
2013	1,635	0,86	1,434	2,26	1,121	2,35
2014	1,052	0,10	1,271	1,32	1,033	0,65
2015	1,343	0,58	1,224	1,12	1,051	1,02
2016	1,236	0,44	1,678	3,41	1,200	3,88
2017	3,225	2,37	1,621	3,16	1,202	3,79
2018	1,591	0,88	1,166	0,98	1,118	2,40
2019	1,116	0,20	1,451	2,44	1,099	1,84
2020	1,241	0,28	1,004	0,02	1,117	1,95
2021	0,301	-1,30	0,315	-5,13	0,624	-4,44
2022	2,465	1,35	1,191	1,10	1,132	2,49

Source: Prepared by the authors based on microdata collected from the Quarterly PNAD-Continuous, 2012-2022.

FINAL REMARKS

Deviating from the usual research agenda in Brazil, this paper compares artists with two other labour market groups in terms of the length of time such artists remain in their careers, and the contributing factors to this situation.

The main findings reveal that the permanence in arts occupations in Brazil is more vulnerable when compared to occupations belonging to the Science Professionals and Intellectuals group. While those who remain working as artists tend to have longer careers than workers in the two comparison groups, by the second interview about 85% of the Science Professionals and Intellectuals group remained occupied, compared to 70% of artists. Although artists have a longer average survival time in the occupation compared to the other groups, their exit rate is higher. This difference can be attributed to two main factors: a higher standard deviation of artists' survival time and, more importantly, the fact that those who manage to remain in the occupation have a significantly longer tenure than the comparison groups. This result suggests that many young individuals are interested in launching careers in the arts, seeking to showcase their creativity and talent. However, faced with numerous challenges in finding an audience and ensuring economic sustainability, they eventually leave the occupation (Menger, 2006; Rosen, 1972). Moreover, the univariate analysis by Kaplan Meier for the group of artists aligns with the findings from existing literature on the topic (Bille & Jensen, 2018; Da Silva Henrique et al., 2023).

When control variables are incorporated into the semi-parametric analysis, it becomes evident that individuals who are male, older, have higher education and higher income, reside in the country's most developed regions, and work formally, are the artists who spend the most time working in their artistic careers. These findings largely reflect the inequalities seen in Brazil, as these demographic groups are among the most privileged in the Brazilian society. In terms of public policies, due to the fact that most vulnerable groups of artists are precisely those associated with the greatest vulnerability of the population, e.g., as women, black people, residents of capitals in the North and Northeast, the preparation of grants and public calls must create mechanisms for quotas for such groups in order to strengthen their permanence in the artistic profession.

Regarding the effects of circumstances on survival in arts occupations, it becomes apparent that the absence or extinction of public policies in the cultural field adversely affects the longevity of artistic careers. The adverse impact of the conjuncture was evident in 2017, the year following President Dilma's impeachment, and it further worsened in 2022, following years of dismantling cultural affirmative policies in Brazil. Additionally, like the rest of the world, the Brazilian artistic and cultural sector was significantly affected by health prevention measures. According to the IBGE, the job losses in this sector were 11.2% in 2020, while the rest of the economy experienced a contraction of 8.7%.

The results presented in this paper make a significant contribution to advancing discussions on the artists' labour market in Brazil, particularly considering that this paper stands among the pioneers in this subject. However, our future research agenda aims to conduct two additional investigations; the first to analyse the paths taken by those who leave the artistic career, investigating whether they transition into related careers such as art teachers, managers, and cultural producers, or if they entirely leave the sector and move on to other occupations. Another potential outcome in transition studies is the possibility of becoming unemployed or inactive.

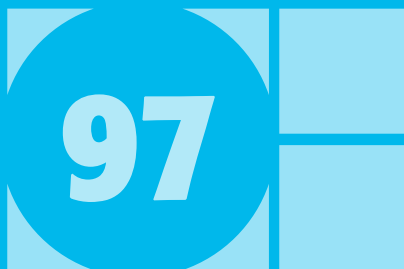
The second investigation should aim at examining specific categories of artists, such as musicians, actors, dancers, and others, with the goal of identifying whether their professional trajectories are influenced by local particularities. To this end, primary research will be required, as the PNAD sample is relatively small when considering all artists, and even more limited for the subgroups that constitute the aforementioned group.

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