Delivering Change: The Educational and Labor Market Effects of Gig Work

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Introduction

There has been a rise in work mediated by platforms worldwide, with individuals performing "gig work" such as driving and delivering food. While this has been documented in developed and low- and middle-income countries alike, the evidence on the effect of the take-up of gig work is mostly centered on developed contexts and on the benefit of increased flexibility for workers (Chen et al., 2019; Fisher, 2023). However, it is unclear how spells of full-time gig work impact individuals in less privileged settings or in the long term. The absence of career progression, skill accumulation, and networking on the job can likely have negative effects. On the other hand, part-time gig work can alleviate budget constraints and allow students to fund their educations (Aucejo et al., 2024). In less educated populations, the availability of these informal work arrangements might appeal to marginal students and alter their schooling attainment. This paper attempts to measure the effects of the take-up of gig work by young workers on education and long-term labor market outcomes.

A key challenge in estimating the effects of gig take-up by students is selection bias: students who are at risk of dropping out of school because of the entry of a delivery platform are expected to be negatively selected compared to those who would nevertheless stay in school. Additionally, there are many measurement issues. First, since these occupations are not registered as formal work contracts - which would be cataloged in individual-level employment data - their prevalence must be approximated using representative survey data, which limits the scope for following an individual over time. Second, even survey data might capture gig work noisily, as questionnaires have not everywhere been adapted to ask about these alternative work arrangements.

In this paper, I attempt to address these issues by leveraging the staggered entry of the leading delivery platform in Brazil across municipalities using an event study approach. This geographic and temporal variation provides identification to compare high school students in treated versus later-treated cities.

Empirical Strategy

I use the date of entry of iFood, the leading delivery platform in Brazil, extracted from changes to a list of municipalities on the company's website. I measure schooling by municipality with yearly dropout rates from high school in the public education system, published by the Education Ministry. Educational attainment by

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Figure 1: iFood Presence and Expansion in Brazil

Figure 2: iFood's Geographical Presence

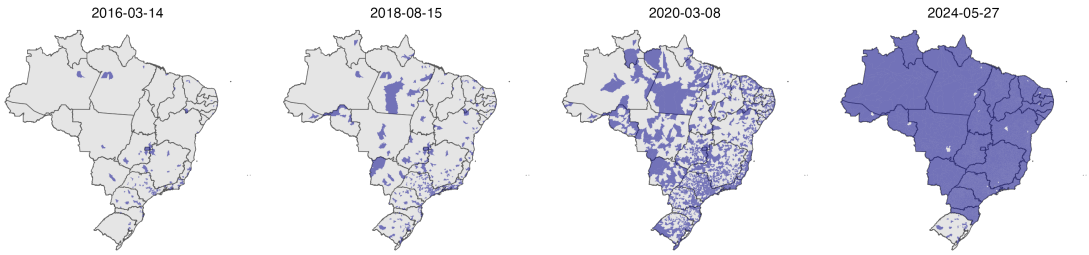
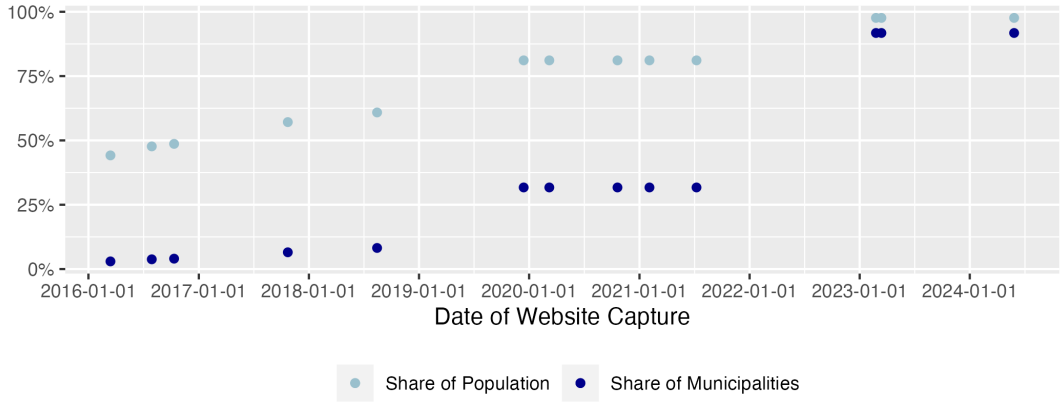


Figure 3: iFood Presence as a Share of Population and Municipalities



Source: iFood.com.br/cidades-atendidas, accessed through web.archive.org.
Note: This figure shows iFood's presence across municipalities between March 2016 and May 2024.

cohort will be obtained from Census data by municipality. iFood began its operations in 2011 and has since expanded to over 5,000 municipalities across the country, shown in Figure 1. It dominates the delivery market, with over 80% of market share. The second leading company, Rappi, is only present in 140 municipalities and started operations in the country later, in 2018. Technically, both platforms only allow individuals 18 years or older to register as independent delivery workers on the platforms, although infringements happen in practice.

I analyze the effects on iFood availability on high school dropout rates using an event study approach following Callaway and Sant'Anna (2021), using the not-yet-treated units as controls. I estimate the model for overall dropout rates, by high school grade, and separately for municipalities with higher than median restaurant density in the baseline (where I expect the effect to be concentrated) and below median.

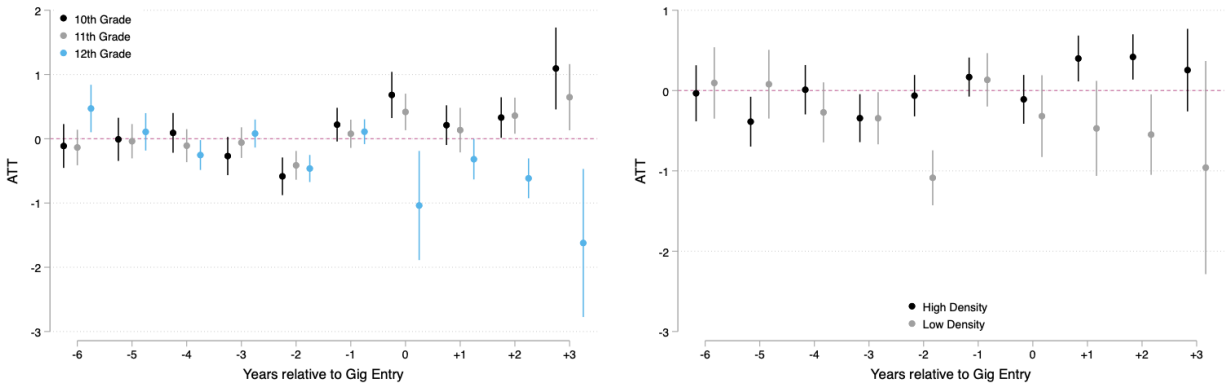
Results

As shown in Figure 4a, the availability of gig work in a municipality leads to a significant increase in high school dropout rates in 10th grade, while dropout rates decline in 12th grade. These effects are economically meaningful, given the average dropout rate of 10% in 2011, and persist for three years. Moreover, the impact is concentrated in municipalities with higher baseline restaurant density (see Figure 4b), reinforcing the

Figure 4: Effect of Delivery Platform Entry on High School Dropout Rates

(a) By Grade

(b) By Restaurant Density



Source: Educational Indicators, INEP (2007-2022).
Note: This figure shows the dynamic reduced form estimates of the treatment effect of delivery platform entry on high school dropout rates, by years since the delivery platform entered the municipality.

hypothesis that the mechanism driving these changes is the availability of delivery work.

Conclusion

In this project, I examine how the availability of gig work affects schooling decisions and labor market outcomes. The results indicate that 10th-grade students, despite being below the legal working age for the platform, experience higher dropout rates after the platform becomes available in their municipalities. This pattern is consistent with two possible mechanisms: students may either perform deliveries using another person's account or anticipate future earnings from the platform, shaping their decision to drop out. In contrast, students in 12th grade at the time of the platform's arrival face the lowest marginal cost of completing high school and exhibit lower dropout rates. This suggests that part-time gig work may help alleviate financial constraints, enabling them to stay in school. Additionally, higher dropout rates among 10th-grade students in earlier years might decrease dropout rates in later grades in subsequent years, as the remaining student population becomes less "at-risk." The concentration of these effects in municipalities with higher restaurant density in 2011 further supports the hypothesis that gig work availability is driving the observed educational outcomes.

I plan to perform a cohort analysis when the 2022 Demographic Census microdata becomes available. Following Atkin (2016), I will estimate the average schooling level obtained by 2022 for cohorts who were still in high school when the delivery platform arrived in their municipality, compared with slightly older cohorts. I will also analyze labor market outcomes, such as earnings and employment in the formal and informal sectors. Recent studies point to possibly opposing directions for formal employment: via an "outsourcing" effect, gig work might diminish formal employment in the restaurant industry (Plotkin, 2024). In the future, it can also increase employment in new businesses, as gig work provides a safety net for entrepreneurship and business creation (Barrios et al., 2022).

References

Atkin, D. (2016). Endogenous Skill Acquisition and Export Manufacturing in Mexico. *American Economic Review*, 106(8):2046–2085.

Aucejo, E. M., Perry, A. S., and Zafar, B. (2024). Assessing the Costs of Balancing College and Work Activities: The Gig Economy Meets Online Education. Working Paper 32357.

Barrios, J. M., Hochberg, Y. V., and Yi, H. (2022). Launching with a parachute: The gig economy and new business formation. *Journal of Financial Economics*, 144(1):22–43.

Callaway, B. and Sant'Anna, P. H. C. (2021). Difference-in-Differences with multiple time periods. *Journal of Econometrics*, 225(2):200–230.

Chen, M. K., Chevalier, J. A., Rossi, P. E., and Oehlsen, E. (2019). The Value of Flexible Work: Evidence from Uber Drivers. *Journal of Political Economy*, 127(6):2735–2794.

Fisher (2023). "Worker Welfare in the Gig Economy".

Plotkin, P. (2024). Dinner at Your Door: How Delivery Platforms Affect Workers and Firms.