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Evidence from a National Census

Christopher S. Carpenter
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Christopher S. Carpenter
Vanderbilt University, National Bureau of Economic Research and IZA

Donn Feir
University of Victoria, National Bureau of Economic Research and IZA

Krishna Pendakur
Simon Fraser University

Casey Warman
Dalhousie University and National Bureau of Economic Research

ABSTRACT

Nonbinary Gender Identities and Earnings:
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The social and legal recognition of nonbinary people—those who do not exclusively identify with traditionally male or female genders—is growing. Yet, we know little about their economic realities. We offer the first nationally representative evidence on the earnings of nonbinary people using restricted-access 2021 Canadian Census data linked to tax records. We find that, although nonbinary individuals tend to be more educated than their peers, they have significantly lower earnings, especially at the bottom of the income distribution, even after adjusting for various demographic and socioeconomic factors.

Corresponding author:
Donn L. Feir
Department of Economics
Business and Economics Building, room 360
University of Victoria
Victoria BC V8P 5C2
Canada

E-mail: dfeir@uvic.ca

1 Introduction

Societies that acknowledge a spectrum of genders that may not align with an individual's sex at birth have long existed (Herdt, 2020; Wiesner-Hanks, 2021). However, the formal recognition by some high-income nations of gender identities that do not conform to binary gender norms is relatively recent but represents a significant cultural and social development. In this article, we present the first nationally representative Census-based evidence on the labor market experiences of people with diverse genders in North America.

Economic research on gender identity has grown significantly in the past three decades (Badgett et al., 2024), especially studies of transgender people. Transgender people are those whose gender identity does not align with their sex assigned at birth. Specifically, transgender women are individuals assigned male at birth who identify as women. Transgender men are individuals assigned female at birth who identify as men. This contrasts with cisgender people, individuals whose gender identity aligns with their sex at birth. Studies of transgender people broadly show that they earn less than similarly situated cisgender men (Geijtenbeek and Plug, 2018; Carpenter et al., 2020, 2022, 2024).

In contrast to the growing number of studies on transgender people, there is to our knowledge no large-scale research on another fast-growing gender minority group: nonbinary people (Brown, 2022). Nonbinary people are those whose gender identity is neither exclusively male nor exclusively female.[1] Coffman et al. (2024) study 455 nonbinary people in a non-representative online sample from Prolific, finding that nonbinary people report more discrimination than cisgender men and women.

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[1]Many transgender people embrace the notion of binary gender, so it is not the case that all transgender people are also nonbinary. Some – but not all – nonbinary people also identify as transgender in the sense that their gender deviates from their sex assigned at birth. Notably, some large surveys allow identification of a 'nonbinary/genderqueer' group that is conditional on first identifying as transgender (e.g., the Gallup National Health and Well-Being Index used by Stacey et al. (2022)) or a 'gender non-conforming' group that is also conditional on first identifying as transgender (e.g., the Centers for Disease Control and Prevention's Behavioral Risk Factor Surveillance System Sexual Orientation and Gender Identity Module used by Carpenter et al. (2020)). Below, we show that the sample of nonbinary people we identify in the 2021 Canadian Census is a demographically distinct population not only from cisgender people but also from transgender men and women.

The broad omission of nonbinary people from the economics literature is problematic. First, recent surveys suggest that nonbinary people are a nontrivial share of the population and the fastest growing gender minority group: a 2022 Pew Research Center survey indicated that 1 percent of adults in the United States identified as nonbinary compared to only 0.6 percent identifying as transgender (Brown, 2022). Among younger adults at 18-29, 3 percent identified as nonbinary versus 2 percent identifying as transgender. Second, there are unique policy issues relevant to nonbinary people as distinct from transgender people, such as allowing for third-gender options on official documents, as many governments have done. Third, understanding patterns in the demographic and economic outcomes of nonbinary people can contribute to innovation in the economics of identity, gender, and discrimination (Akerlof and Kranton, 2000; Blau and Kahn, 2017; Blau and Lynch, 2024; Kline et al., 2022). This paper provides the first evidence from a population-level census on the demographics and labor market outcomes of nonbinary people.

To study nonbinary adults, we use confidential data from the 2021 Canadian Census long form. This is a 25 percent sample of all Canadian households, and these data have several critical advantages relative to other datasets. First, because the Canadian Census is mandatory, it has a response rate of 98 percent which is very high compared to sample surveys. For comparison, the only nationally representative dataset in the United States with information on nonbinary status, the Census Bureau's Household Pulse, has a six to ten percent response rate. Although the Household Pulse is weighted to be nationally representative, the variables used for adjustment do not include nonbinary status or gender identity (because it is not measured in administrative data systems). Related to this, the sample size of nonbinary people in the Canadian Census is larger than any other existing survey-based studies, allowing us precision to investigate differences throughout the earnings distribution and control for detailed differences in demographics. Second, our Canadian Census data includes high-quality annual earnings data from 2019 and 2020 tax records and employment information. US datasets that include nonbinary and transgender identities,

such as the Household Pulse and the Center for Disease Control and Prevention's Behavioral Risk Factor Surveillance System (BRFSS) data, do not include information on individual labor market earnings. Third, in our data we can identify nonbinary people that would be missed in existing administrative data. Existing research on transgender people has relied on data that identify transgender people based on specific medical diagnoses (see, for example, Geijtenbeek and Plug (2018) in the Netherlands and Kolk et al. (2023) in Sweden) or changes to binary sex markers in government documents (see Carpenter et al. (2024) for the United States). In practice, most nonbinary people will be missed with these approaches.

We report several key findings. First, nonbinary people are a distinct demographic group from both cisgender people and transgender people. They are younger, more likely to be Indigenous, possess higher levels of educated, and more prone to report a mental health condition, learning disability or physical disability compared to cisgender people and compared to transgender people with the same sex at birth. When we examine economic outcomes, despite having relatively high levels of education, we find that nonbinary individuals assigned female at birth have substantially lower earnings than otherwise similar cisgender men and cisgender women. Nonbinary individuals assigned male at birth also experience lower earnings and employment than cisgender men but not compared to cisgender women. These results are highly robust to controlling for detailed demographic, job, and health characteristics. Because we have a large sample of nonbinary people, we also investigate how earnings disparities vary across the conditional earnings distribution. We find that nonbinary earnings gaps are much larger at the bottom of the earnings distribution than at the top. Even conditional on time worked, nonbinary people who were assigned female at birth earn significantly less than cisgender women across the distribution and again, these differences are largest at the bottom on the income distribution. Our results are the first to document significant economic precarity of nonbinary people using a large population Census.

2 Data and Descriptive Statistics

Our primary data come from the restricted-use version of the 2021 Canadian Census long form, administered to 25 percent of all households. The 2021 Census, which was mandatory, was the first in the country (and one of the first in the world, along with the United Kingdom and New Zealand) to allow for the identification of nonbinary people. Previous censuses in Canada asked only about sex but not gender. In 2021, a question on gender was added that asks: 'What is this person's gender?' and includes a note that gender 'refers to current gender, which may be different from sex assigned at birth and may be different from what is indicated on legal documents.' The three response options to the gender question are male, female, and a write-in option that reads: 'or please specify this person's gender.'[2] We identify nonbinary people based on their text responses to this question about their current gender.[3] Together with information on sex at birth, we separate nonbinary people into nonbinary people assigned male at birth and nonbinary people assigned female at birth. We identify 25,000 population-weighted nonbinary individuals aged 25 to 59 in our data.

The 2021 Canadian Census also includes very detailed demographic characteristics, including information on age, visible minority status, Indigenous status, household structure, marital status, immigration status, educational attainment, geographic location, mobility, industry, occupation, and health. Regarding economic outcomes, the 2021 Census provides employment and earnings information for 2020 and 2019. Given the potential distortions beginning in March 2020 due to the COVID-19 pandemic (Jones et al., 2023), we focus on

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[2]We provide a visual representation of the 2016 and 2021 Canadian Census Forms in Online Appendix Figures A1 and A2, respectively. We note that in 2016 people were asked about 'sex', while in 2021 people were asked about 'sex at birth', and the 2021 form includes an additional note next to the sex at birth question that reads: 'Sex refers to sex assigned at birth.' In 2021, as in 2016 and earlier, there are only two response options to the sex question: male and female.

[3]We provide further details in the Online Appendix regarding how Statistics Canada identified nonbinary people through write-in text responses. About two-thirds of people we identify as nonbinary explicitly wrote 'nonbinary' into the text box. Other terms, such as 'gender fluid' or 'gender non-conforming,' were also coded as nonbinary. The process outlined by Statistics Canada accounts for misspellings and protest responses. Appendix Figure A3 shows a word cloud provided by Statistics Canada that indicates the most common write-in responses to the question about gender.

2019 earnings in our regression analysis but present summary statistics for 2019 and 2020. The primary drawback of focusing on 2019 is that certain characteristics (e.g., occupation, industry) refer to the reference week in May 2021.[4] Those demographics might be mismeasured for 2019 earnings. However, results using income data from 2020 return qualitatively identical patterns and are presented in the Online Appendix.

Table 1 provides descriptive statistics from the Canadian Census for the entire population. To our knowledge, these descriptive statistics are the first such evidence from a national census on individuals are identified as nonbinary. We present means for people assigned female at birth in columns 1-3 and for people assigned male at birth in columns 4-6. Specifically, we present means for nonbinary people assigned female at birth in column 1, transgender men in column 2, cisgender women in column 3, nonbinary people assigned male at birth in column 4, transgender women in column 5, and cisgender men in column 6. We observe several patterns in Table 1. First, nonbinary people are significantly younger than transgender or cisgender people. Second, nonbinary people are much more likely than transgender or cisgender people to be White, more likely to be Indigenous, and less likely to be a visible minority (a policy category in Canadian law that roughly means "not Indigenous and not White"). Third, there is a complicated education gradient: transgender people are less educated than cisgender people, while nonbinary people are much more highly educated than cisgender people. Fourth, nonbinary people are less likely to be married (although more likely to be married to someone with the same sex at birth) and less likely to have children present in the household than transgender or cisgender people. Additionally, nonbinary people are more likely to be in households in central cities and more likely to have moved in the past five years.

Fifth, there are enormous health differences: nonbinary people are six to eight times more likely than cisgender people, and two times more likely than transgender people, to report at least one mental health condition (such as depression or anxiety). In fact, 58 percent

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[4]If a person did not work that week, responses refer to the longest job held between January 2020 and April 2021.

of nonbinary people who were assigned female at birth reported such a condition. While these rates are extremely high, they align with the recent findings in the United States of nonbinary individuals having higher rates of chronic depression or anxiety than both transgender and cisgender individuals (Feir and Mann, 2024). One in five nonbinary people assigned male at birth and one quarter of nonbinary people assigned female at birth also report difficulty concentrating, learning or remembering, which could be due to higher rates of reported mental health conditions. We also find notable differences that follow the same general pattern for physical conditions, though the overall prevalence rates are lower.[5] Since in Canada gender dysphoria is a diagnosed condition, some of the differences we observe between gender minority people and cisgender people may be mechanical.

The bottom section of Table 1 examines labor market outcomes. Full-time employment is defined based on weeks worked for all jobs for pay or in self-employment in 2020. In 2019, our analysis focuses on the labor income of people who reported positive earnings, as the Census lacks information regarding the number of weeks they worked that year. We find that nonbinary people assigned female at birth are less likely to be full-time workers in 2020 than either transgender men or cisgender women, while nonbinary people assigned male at birth are more likely to be full-time workers in 2020 than transgender women but less likely to be full-time workers than cisgender men. We also find that nonbinary people assigned female at birth are more likely than either transgender or cisgender people to be self-employed.

Regarding earnings, we observe that nonbinary people assigned female at birth have lower earnings than either transgender men or cisgender women in both years, while nonbinary people assigned male at birth have lower earnings than cisgender men but higher earnings than transgender women in both years. Nonbinary people assigned female at birth have lower average hours of work than cisgender women or transgender men, while nonbinary people assigned male at birth work fewer hours than cisgender men but more hours than transgender

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[5]The question requests individuals only report "difficulties or long-term conditions that have lasted or are expected to last for six months or more."

women. The pattern of earnings and employment is particularly striking given the notably higher level of education of nonbinary people on average, particularly among those assigned female at birth. The earnings difference between cisgender women and cisgender men are comparable to those reported in Fortin (2019).

3 Empirical Approach

Our objective in this section is to explore the correlation of nonbinary status with earnings. We focus on earnings in regression analyses since labor market earnings are the primary way people can provide for themselves independently. Several interesting patterns were observed in the sample means of key variables in our discussion of the data in Table 1. A stark feature is that the age distribution of nonbinary people differs from that of the population as a whole, even among 25-59-year-olds. This suggests that we should investigate correlations of socioeconomic outcomes that are conditional on covariates like age.

We estimate linear regression models of the following form for log-earnings y and covariate matrix, X:

$$y_i = \alpha + \gamma_1 \text{cisgender woman}_i + \gamma_2 \text{transgender woman}_i + \gamma_3 \text{transgender man}_i$$
$$+ \gamma_4 \text{nb person afab}_i + \gamma_5 \text{nb person amab}_i + X_i \beta + u_i, \tag{1}$$

for each observation $i = 1, \ldots N$. We also estimate quantile regressions for quantiles $k = 0.1, 0.2, \ldots 0.9$ of the form:

$$P[y_i > \alpha_k + \gamma_{1k} \text{cisgender woman}_i + \gamma_{2k} \text{transgender woman}_i + \gamma_{3k} \text{transgender man}_i$$
$$+ \gamma_{4k} \text{nb person afab}_i + \gamma_{5k} \text{nb person amab}_i + X_i \beta_k + u_i] = q_k \tag{2}$$

Each equation contains an indicator for people with our two nonbinary statuses: nb person afab indicates being a nonbinary person assigned female at birth and nb person afab indicates being a nonbinary person assigned male at birth. We also include separate indicators for being a cisgender woman, a transgender man or transgender woman with the excluded

category being cisgender men. We include different sets of controls described below summarized in a vector of demographic controls X. The covariate list varies across columns and includes some or all of the following controls: nine age group dummies; five marital status dummies including whether the partner is common law and whether the partner is same-sex; six household type/size dummies; an indicator that the household maintainer reports an Abrahamic religion (either Christian, Muslim, or Jewish), visible minority and Indigenous indicators, and immigration generation status interacted with visible minority status; a vector of census subdivision fixed effects that capture spatial variation (that is, roughly 4,700 location fixed effects for local political units such as cities and towns); health status variables; and 3-digit occupation and industry dummies. The Online Appendix details the full list of controls in Table A1.

For all coefficients, we present weighted least squares estimates using Canadian Census survey weights to make the results representative of the Canadian population. Linear regression coefficients and quantile regression coefficients are presented along with heteroskedasticity robust standard errors. Many estimated coefficients are large, so although we present coefficient estimates in the main tables, we mainly discuss percent differences in the main text. These are computed as $exp(\gamma) - 1$ for any coefficient γ in a log-earnings regression. The analog to Table 2 with percent differences and associated standard errors of percent differences is in the Online Appendix, Table A2.

4 Results

We present results for log earnings in Table 2. Column 1 presents results from the specification controlling only for purely exogenous characteristics (age group in five-year age bins, visible minority status, and Indigenous status); column 2 adds controls for educational attainment; column 3 adds household structure and immigration controls; column 4 adds census subdivision (equivalent to a municipality or local political unit) fixed effects; column 5 adds health controls; column 6 restricts the sample to those that indicated they had an

industry and occupation of employment; and column 7 adds industry and occupation fixed effects.

The results in Table 2 provide clear evidence that nonbinary people assigned female at birth earn less than all other groups, while nonbinary people assigned male at birth earn about the same as similarly situated cisgender women. All coefficients and p-values for tests of gender group effect differences are reported in the Online Appendix. We are also interested in the estimates for transgender men and women to the extent they confirm or deviate from the findings of prior research in North America. In column 1, we have an estimated coefficient for transgender men of -0.307, indicating that transgender men earn about 26 percent less ($exp(-0.307) - 1$) than cisgender men with the same age and ethnic minority status. For transgender women, the estimated coefficient is -0.437, indicating that transgender women earn about 35 percent less than similar cisgender men. These numbers are broadly consistent with prior findings on transgender income disparities (see e.g., Carpenter et al. (2020), and Carpenter et al. (2022)).

Turning to nonbinary people, we see in column 1 an estimated coefficient of -0.360 for nonbinary people assigned male at birth, indicating earnings about 30 percent less than those of similar cisgender men. In contrast, the estimated coefficient for nonbinary people assigned female at birth is -0.604, indicating earnings about 45 percent less than those of similar cisgender men. This is an enormous earnings gap. It is significantly larger than that faced by nonbinary people assigned male at birth and significantly larger than that faced by transgender people and cisgender women. It is also much larger than the earnings gaps faced by Black men in the United States but comparable to the earnings gaps faced by Indigenous men in Canada in the 1990s (Pendakur and Pendakur, 2011a,b; Feir, 2013, 2024).

In column 2, we add education controls. One reason to exclude education controls is that we may be opening the door to collider bias (controlling for a variable whose causal channel is actually part of what we are interested in). However, given the ubiquity of the Mincer

regression in labor economics, it may nonetheless be appropriate, and we use these as our headline results. Given that we observe in the summary statistics that nonbinary people are more educated than other people, it is not surprising that the estimated coefficients are larger in column 2. The estimated coefficient for nonbinary people assigned male at birth is -0.397, implying an earnings gap of 33 percent compared to cisgender men. The estimated coefficient for nonbinary people assigned female at birth is -0.690, implying an earnings gap of 50 percent compared to cisgender men.

Moving across the columns 3 through 7, adding covariates, we do not see any change in the general pattern that nonbinary people face significant earnings disparities and that nonbinary people assigned female at birth face especially severe earnings gaps relative to cisgender women. Controlling for health status in column 5 does decrease estimated earnings differences between nonbinary people and other groups since nonbinary people report much worse health status on average. The results in column 6 suggest there are very little differences between the sample that reports an occupation and industry and the full sample. Controlling for industry and occupation of work in column 7 reduces estimated differences, but they are still economically large. Across specifications, nonbinary people earn much less than cisgender men, especially nonbinary people assigned female at birth.

In the Online Appendix, we explore the robustness of the finding that nonbinary people earn less than otherwise similar cisgender people. First, we address a potential concern related to knowledge of nonbinary status of people filling out the 2021 Canadian Census form. Specifically, one household respondent, typically the person in whose name the house or apartment is owned or rented, reports information for all other household members. The nonbinary status of a household member may not be known or accepted by the person filling out the Census form, particularly given that nonbinary status may face stigma, possibly being more pronounced in conservative regions (Sears et al., 2024).[6] To address this challenge,

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[6]Statistics Canada instructs 2021 Census respondents who are filling out the form for another household member to answer "to the best of their knowledge ... the gender they think the other household member would choose."

in Online Appendix Table A3 we show that results are robust to restricting the sample to observations for 'person 1'; i.e., the person who most likely filled out the form for the household. Since people know their own nonbinary status, we do not expect misreporting for this group. Reassuringly, we obtain very similar patterns with this restricted sample: nonbinary people assigned female at birth still experience the largest earnings penalties compared to otherwise similar cisgender people.

Second, we address the possibility that the lower earnings of nonbinary people reflects the fact that they may still be in school and not working as much as cisgender people who have completed schooling. The patterns in Table 2 that nonbinary people are much more likely to have a college degree than both cisgender and transgender people highlight this possibility. That our main analysis sample restricts attention to people at least 25 years of age helps mitigate this concern, though nonbinary people may be disproportionately likely to engage in graduate or professional school degrees. To address this, we report results from a model that restricts attention to adults aged 30-59 (as opposed to age 25-59). Online Appendix Table A4 presents these results and returns patterns that are very similar to our baseline estimates in Table 2, reducing concern that differential higher education rates drive our finding that nonbinary people assigned female at birth earn much less than similarly situated cisgender people.

Third, we address the issue that the characteristics in the 2021 Canadian Census measure 2020 variables, while our earnings outcome is measured in 2019 to avoid disruptions associated with the COVID-19 pandemic. In Online Appendix Table A5, we show results using earnings data from 2020 that more closely match the measurement timing of the key demographic variables, including nonbinary status. We find very similar results regardless of whether we use 2020 earnings data or 2019 earnings data, suggesting that the COVID-19 pandemic, while an important disruption to earnings, does not materially affect our core finding that nonbinary people, especially those assigned female at birth, experience much lower earnings relative to similarly situated cisgender men.

Having documented the first evidence that nonbinary people have lower earnings than otherwise similar cisgender men, we next explore whether there is meaningful heterogeneity across the earnings distribution. We estimate conditional quantile regressions as in (2) at each decile of the earnings distribution, and we display the results graphically in Figure 1 for the specification with the controls corresponding to column 2 in Table 2. Here, we see a robust pattern: nonbinary earnings disparities are larger at lower quantiles than at upper quantiles, and this pattern is much steeper than for cisgender women. Specifically, we find that at the bottom decile nonbinary people assigned male at birth face an earnings gap of 54 percent, adjusting for observable differences, but at the top decile, the earnings gap falls to 18 percent. For nonbinary people assigned female at birth, the pattern is also evident: they face an earnings gap of 65 percent at the bottom decile and 39 percent at the top decile. We see the same pattern of earnings gaps – larger at the bottom of the conditional earnings distribution than at the top – for transgender men and women compared to cisgender men in Figure 1, which has not previously been documented in the literature to our knowledge.

To understand the extent to which weeks and hours worked may be driving the patterns we observe, and having shown that our 2019 finding holds in 2020, we present results for full-time workers' weekly wages and hourly wages. We present both since weekly wages are measured over the same period as earnings, but hours are all jobs held during the week of Sunday, May 2 to Saturday, May 8, 2021. Given that the Canadian economy had largely rebounded by this point (see Jones et al. (2023)), the hours estimated may be much higher than in 2020. If nonbinary people were more affected during the pandemic than other groups (which is plausible given what we are finding on earnings), this may mean their hours would be potentially over-estimated relative to other groups and thus result in *smaller* wage differences than exist. Thus, the hourly wage results should be interpreted with a reasonable degree of caution.

We present the regression results for the log of weekly wages in Table A6 and conditional quantile results in Figure A4. In both cases, we find slightly reduced differences (by about

0.1 log points for most groups), but still largely comparable patterns as already described. While, again, these results should be interpreted with caution, we present the results for hourly earnings in Table A7 and Figure A5.[7] The mean differences between all groups and cisgender men are much smaller on average, but the ranking patterns discussed still hold. The one exception is that health differences matter less for nonbinary people in explaining differences in hourly wages, and at the mean, occupation and industry or work controls result in all groups being relatively comparable with cisgender women. However, for nonbinary individuals assigned female at birth, while the point estimate for the differential at the 10th percentile at the bottom of the distribution is slightly smaller than the differential at other quantiles, the weekly wage gap is consistently larger than the one observed for cisgender women and is relatively flat across quantiles. This evidence suggests that differences in hours worked may be an important source of the nonbinary assigned female at birth earnings penalty, but it is not the full story. Regardless, given that hours worked can be an important source of lifetime earnings inequality, the differences in hours worked may have important log run implications for gender diverse people (Bick et al., 2024).

5 Discussion and Conclusion

We provide the first evidence on nonbinary earnings gaps from a large population representative sample using newly available confidential data from the 2021 Canadian Census, which had a 98 percent response rate and, for the first time, included separate questions on sex at birth and current gender. We identify over 25,000 population-weighted nonbinary people aged 25 to 59 based on a free-response gender question, and we provide the literature's first description of these people from a sociodemographic and economic perspective. We find that nonbinary people are a distinct group demographically and economically, not only from cisgender people, but also from transgender people with a binary gender identity. Relative to both groups, nonbinary people are much younger while at the same time much more highly

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[7]We report the probability of being employed in the census reference week in Table A8.

educated. Nonbinary people are also more likely to be Indigenous, more likely to live in central cities, and more mobile. We also are the first to document with a population-wide census that nonbinary people are much more likely to report a broad range of physical and mental health conditions.

When we look at economic outcomes we find that nonbinary people have much lower earnings than cisgender men. But, given their quite different demographic characteristics as outlined above, we also consider earnings conditional on observed covariates. Standard log earnings regressions show that, conditional on covariates like age and education, nonbinary people assigned male at birth earn 33 percent less than cisgender men, and roughly the same as cisgender women and transgender men and women. Nonbinary people assigned female at birth face much larger earnings differences, earning about 50 percent less than cisgender men and significantly less than cisgender women and transgender men and women. Quantile regressions reveal that nonbinary earnings gaps, conditional on observed characteristics, are much larger at the bottom of the earnings distribution than at the top of the earnings distribution. We present evidence that these differences may in part be due differences in labor hours, but it is not the full story.

While observational data do not allow us to identify discrimination, there is evidence that nonbinary people experience employment discrimination in the literature. For example, there is evidence of call-back discrimination related to gender-neutral pronoun use in resume correspondence studies (Kline et al., 2022; Eames, 2024). In addition, Sears et al. (2024) found in the United States that approximately 59 percent of nonbinary employees experienced discrimination or harassment at work due to their sexual orientation or gender identity, and 16 percent reported being fired, not hired or not promoted for the same reason. Our results complement this literature using representative, large-scale, high quality data on realized labor market outcomes of nonbinary people.

The concept of gender, an individual's experience of it, and society's reactions to when gender deviates from sex assigned at birth shape the human experience globally. Here we

have offered the first nationally representative evidence of nonbinary people's experiences in the labor market and additional evidence on the experiences of transgender people. We have also presented notable differences in demographic characteristics among gender identities and how they interact with sex at birth. There is still much to understand regarding what forces shape individual choices regarding gender identity, including and especially nonbinary concepts of gender, and how society reacts to it. Our findings here represent an important first step towards greater understanding.

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Tables and Figures

Table 1: Summary statistics on demographic and economic outcomes by sex at birth and gender identity

	Assigned Female at Birth			Assigned Male at Birth		
	Nonbinary people	Transgender men	Cisgender women	Nonbinary people	Transgender women	Cisgender men
Panel A: Demographic Characteristics						
Number of children 0 to 5	0.09	0.11	0.24	0.06	0.13	0.23
Indigenous	10.7	7.3	4.9	9.4	5.4	4.5
Visible minority	14.0	23	28.3	14.0	25.4	26.2
First generation	13.4	22.9	31	13.5	26.7	28.7
HH Abrahamic religion	13.1	30.7	49.3	14.9	32.9	48.0
BA or more	46.0	25.7	37.7	37.6	29.3	29.7
Married	17.5	28.9	49.9	18.1	38.1	47.1
Living common law	23.2	16.9	17.6	19.1	13.6	18.1
Same-gender married spouse	3.1	3.6	0.4	1.3	2.5	0.3
Large city	78.5	67.1	63.5	78.7	70.1	62.9
Moved within 5 years ago	33.4	25.3	20.7	29.8	22.1	20.8
Mental health condition	58.0	26.3	9.0	41.5	21.6	5.7
At least one physical difficulty	20.8	13.2	7.1	15.9	11.0	6.2
Difficulties Learning	24.0	10.7	2.6	18.1	8.5	2.6
Other health problems	33.9	17.8	10.6	21.4	13.8	8.8
Panel B: Labor Market Outcomes						
Earnings in 2020, > 0	42,400	57,000	58,500	58,100	53,400	82,600
Earnings in 2020, full-time	53,200	64,200	68,200	69,200	62,900	89,200
Earnings in 2019, > 0	41,100	56,400	58,000	56,600	53,700	82,600
Fraction with zero hours	22.2	35.3	39.9	34.8	35.1	31.5
Employed	69.1	69.1	73.6	68.7	64.3	80.8
Full-time employed 2020	53.9	62.9	64.3	63.1	55.4	79.1
Self-employed	14.6	11.6	9.8	13.1	11.6	15
Weighted N	17,145	12,890	8,358,860	8,280	17,670	8,065,705

Notes: HH Abrahamic religion is an indicator for whether the person who filled out the survey for the household was Christian, Jewish or Muslim. For the variables on health conditions, they are always reported as a binary indicator that equals one when a condition is reported to be often or always. Physical difficulty includes seeing, walking or hearing. "Large" city is a large Canadian urban population center of 100,000 or more. "Moved" refers to moved within Canada in the same census subdivision. Difficulties learning, concentrating or remembering is all included under "Difficulties learning".

Table 2: Nonbinary and transgender log 2019 earnings relative to cisgender men

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Cisgender woman	-0.363	-0.418	-0.419	-0.415	-0.401	-0.382	-0.252
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Trangender man	-0.307	-0.281	-0.275	-0.281	-0.211	-0.245	-0.140
	(0.023)	(0.023)	(0.023)	(0.023)	(0.022)	(0.022)	(0.021)
Transgender woman	-0.437	-0.433	-0.427	-0.435	-0.383	-0.377	-0.248
	(0.021)	(0.021)	(0.021)	(0.021)	(0.021)	(0.020)	(0.019)
Nb person, afab	-0.604	-0.690	-0.702	-0.702	-0.497	-0.544	-0.328
	(0.022)	(0.022)	(0.022)	(0.022)	(0.022)	(0.021)	(0.021)
Nb person, afab	-0.360	-0.397	-0.403	-0.409	-0.281	-0.312	-0.206
	(0.030)	(0.030)	(0.030)	(0.030)	(0.030)	(0.029)	(0.027)
Six age group FE	x	x	x	x	x	x	x
Visible minority	x	x	x	x	x	x	x
Indigenous	x	x	x	x	x	x	x
Three educ FE		x	x	x	x	x	x
Six relationship FE			x	x	x	x	x
Four child controls			x	x	x	x	x
Abrahamic household			x	x	x	x	x
Four immigrant FE			x	x	x	x	x
Census Subdivision FE				x	x	x	x
Six health FE					x	x	x
Ind/occ sample						x	x
Industry/occ FE							x
Observations	3,312,030	3,312,030	3,312,030	3,312,030	3,312,030	3,119,070	3,119,070
R-squared	0.065	0.109	0.121	0.136	0.146	0.149	0.258

Notes: Nb person, afab indicates a nonbinary person assigned female at birth and nb person, amab a nonbinary person assigned male at birth. See data section for the description of the control sets, as well as Online Appendix Table A1. Robust standard errors in parentheses.

Figure 1: Conditional Quantile Percent Differences for 2019 Earnings
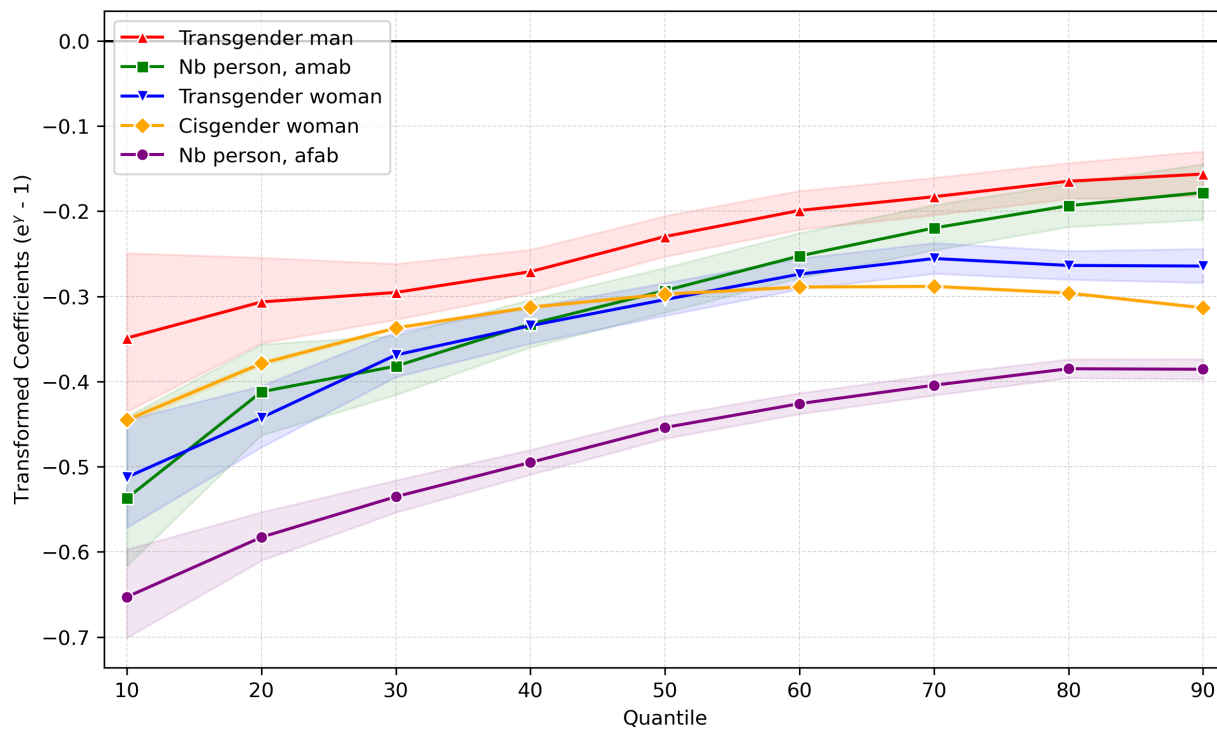
Notes: All specifications adjust for the independent variables in the full specification included in Table 2, Column 2. Nb person, afab indicates a nonbinary person assigned female at birth and nb person, amab a nonbinary person assigned male at birth. Shading represents 95 percent confidence intervals around each point estimate.

A Appendix

A1 Coding of Nonbinary by Statistics Canada

The separate sex and gender questions implemented by Statistics Canada were spurred by the Treasury Board of Canada's Secretariat's policy direction to modernize the federal government's broader administrative practices around sex and gender in 2018 and were conducted in alignment with the standards for such questions to identify transgender and other gender minorities in population surveys and those implemented by New Zealand (Statistics Canada, 2024). The census defines a transgender person as a person whose reported gender corresponds to a binary gender that differs from their sex assigned at birth. People are identified as nonbinary whose self-reported gender includes persons who wrote in agender, pangender, genderqueer, genderfluid, gender-nonconforming, questioning, or Two-Spirit (Statistics Canada, 2021). To code the write-in responses for the third gender category, Statistics Canada underwent a multi-step process (Statistics Canada, 2022b). First, a pre-processing step prepared the write-in responses for automatic coding. The text strings were compared against a reference file of actual responses created by subject matter experts based on other write-in survey responses to similar questions. Write-in with an exact match to one of these terms was auto-coded. The remaining uncoded responses were then processed using a machine-learning model built by subject matter experts. This assigned a code and confidence score associated with the code. Codes with a confidence score above a certain threshold were assigned to the code identified. The remaining uncoded responses were sent to specially trained coding operators and subject matter experts, and codes were assigned and again reviewed by subject matter experts before receiving their final code.

Note that in 2021, the Census form was submitted online by 84.1% of private dwellings and in this form, individuals could only select one gender option (the write-in or male or female) (Statistics Canada, 2022a). When a paper copy of the form was submitted, if an individual selected either one male or female in the gender option *and* wrote a valid response in the gender write-in option, the write-in response was prioritized.

A2 Figures and Tables

Figure A1: 2016 Canadian Census Form Sex and Gender Questions

Source: Statistics Canada. https://www23.statcan.gc.ca/imdb/p3Instr.pl?Function=getInstrumentList&Item_Id=1285254&UL=1V. Last accessed September 24, 2024.

Figure A2: 2021 Canadian Census Form Sex and Gender Questions

Source: Statistics Canada. https://www23.statcan.gc.ca/imdb/p3Instr.pl?Function=getInstrumentList&Item_Id=295122&UL=1V&. Last accessed September 24, 2024.

Figure A3: Classification of Nonbinary
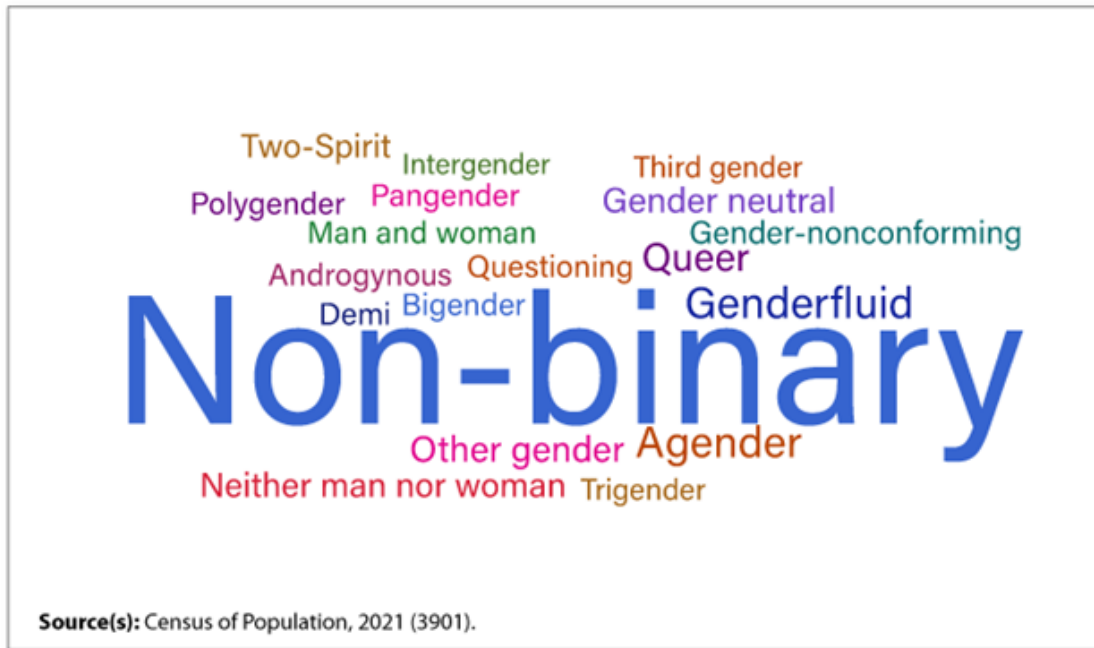
Source: Statistics Canada. https://www150.statcan.gc.ca/n1/daily-quotidien/220427/g-b002-eng.htm. Last accessed September 24, 2024.

Figure A4: Conditional Quantile Percent Differences for 2020 Log of Weekly Wages of Full-time Workers
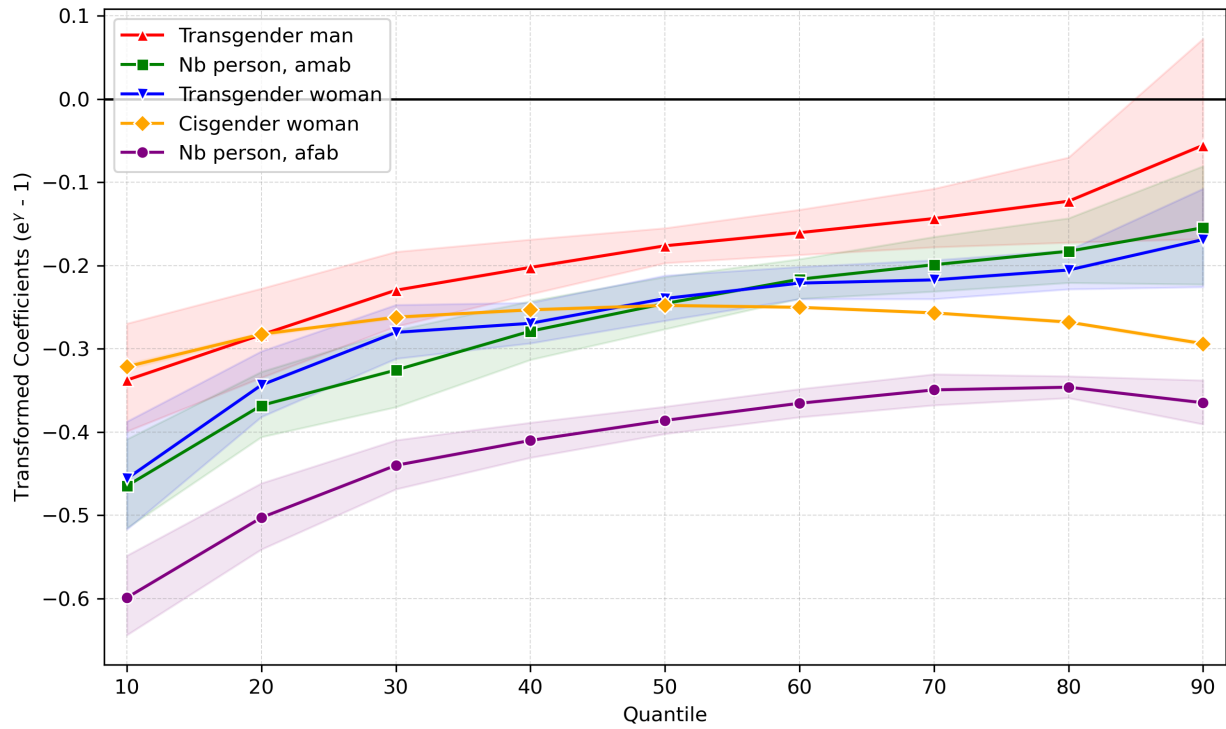
Notes: All specifications adjust for the independent variables in the full specification included in Table 2, Column 2. Nb person, afab indicates a nonbinary person assigned female at birth and nb person, amab a nonbinary person assigned male at birth. Shading represents 95 percent confidence intervals around each point estimate.

Figure A5: Conditional Quantile Percent Differences for 2019 Log of Hourly Wages of Full-time Workers
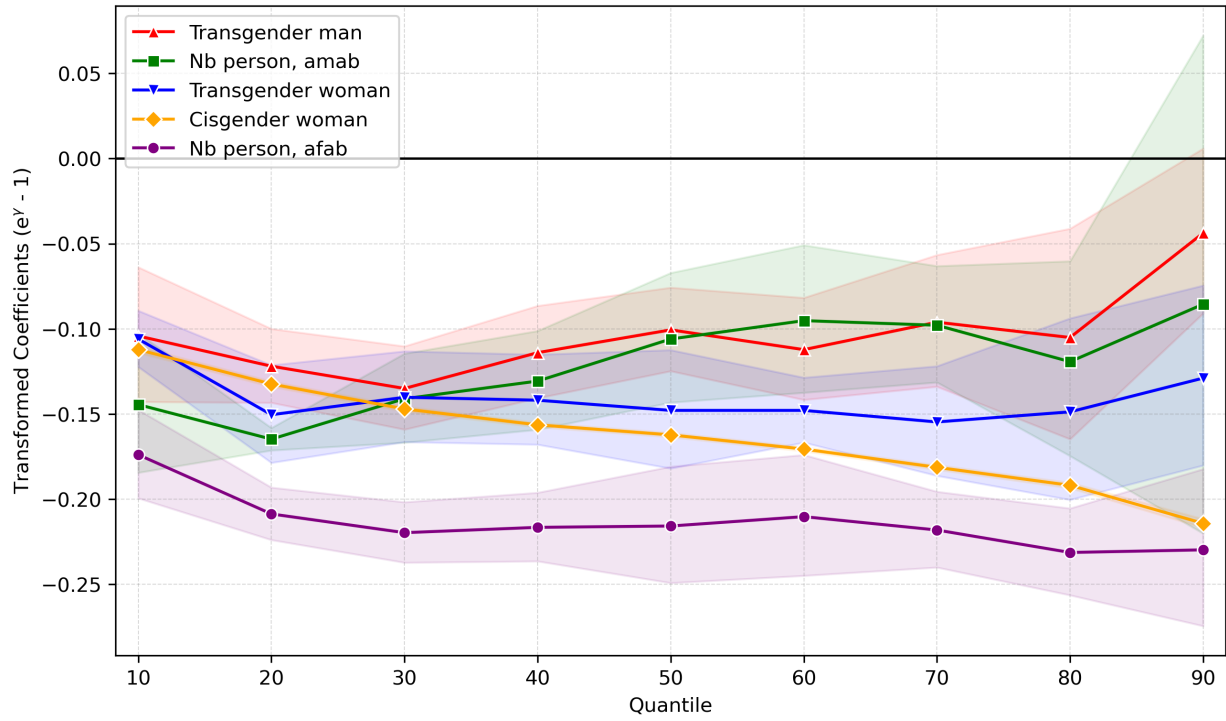
Notes: All specifications adjust for the independent variables in the full specification included in Table 2, Column 2. Nb person, afab indicates a nonbinary person assigned female at birth and nb person, amab a nonbinary person assigned male at birth. Shading represents 95 percent confidence intervals around each point estimate.

Table A1: Nonbinary and transgender log 2019 earnings relative to cisgender men: Full specifications

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Cisgender woman	-0.363	-0.418	-0.419	-0.415	-0.401	-0.382	-0.252
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Transgender man	-0.307	-0.281	-0.275	-0.281	-0.211	-0.245	-0.140
	(0.023)	(0.023)	(0.023)	(0.023)	(0.022)	(0.022)	(0.021)
Transgender woman	-0.437	-0.433	-0.427	-0.435	-0.383	-0.377	-0.248
	(0.021)	(0.021)	(0.021)	(0.021)	(0.021)	(0.020)	(0.019)
Nb person, afab	-0.604	-0.690	-0.702	-0.702	-0.497	-0.544	-0.328
	(0.022)	(0.022)	(0.022)	(0.022)	(0.022)	(0.021)	(0.021)
Nb person, amab	-0.360	-0.397	-0.403	-0.409	-0.281	-0.312	-0.206
	(0.030)	(0.030)	(0.030)	(0.030)	(0.030)	(0.029)	(0.027)
Age 30 to 34	0.288	0.273	0.247	0.248	0.248	0.248	0.210
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
Age 35 to 39	0.428	0.418	0.374	0.377	0.380	0.381	0.326
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
Age 40 to 44	0.536	0.537	0.459	0.466	0.470	0.472	0.414
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
Age 45 to 49	0.599	0.609	0.503	0.513	0.518	0.524	0.464
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
Age 50 to 54	0.582	0.614	0.496	0.508	0.515	0.533	0.475
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
Age 55 to 59	0.450	0.514	0.387	0.404	0.413	0.485	0.442
	(0.002)	(0.002)	(0.003)	(0.003)	(0.003)	(0.002)	(0.002)
Visible minority	-0.192	-0.254	-0.083	-0.122	-0.121	-0.126	-0.086
	(0.001)	(0.001)	(0.009)	(0.009)	(0.009)	(0.008)	(0.008)
Indigenous	-0.322	-0.211	-0.196	-0.155	-0.133	-0.107	-0.088
	(0.003)	(0.003)	(0.003)	(0.004)	(0.004)	(0.003)	(0.003)
High school grad		0.280	0.261	0.232	0.218	0.198	0.105
		(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.002)
Less than BA		0.472	0.442	0.419	0.404	0.366	0.162
		(0.003)	(0.003)	(0.003)	(0.003)	(0.002)	(0.002)
BA or higher		0.786	0.753	0.712	0.687	0.638	0.249
		(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
Married			0.354	0.329	0.320	0.275	0.190
			(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
Common law			0.309	0.319	0.314	0.266	0.195
			(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
Once married			0.165	0.151	0.158	0.136	0.091
			(0.003)	(0.003)	(0.003)	(0.002)	(0.002)
Married X same sex			-0.021	-0.002	0.016	0.015	0.031
			(0.011)	(0.010)	(0.010)	(0.010)	(0.009)
Common law x same sex			-0.034	-0.038	-0.021	-0.021	-0.002
			(0.007)	(0.007)	(0.007)	(0.007)	(0.007)
Not in a census family			0.129	0.133	0.143	0.119	0.095
			(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
Number of kids 0 to 5			-0.122	-0.118	-0.120	-0.094	-0.096
			(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
Any kids 0 to 5			0.012	0.014	0.013	0.006	0.002
			(0.004)	(0.004)	(0.004)	(0.004)	(0.004)
Number of kids 6 to 17			-0.049	-0.045	-0.046	-0.038	-0.035
			(0.002)	(0.002)	(0.002)	(0.001)	(0.001)
Any kids 6 to 17			0.075	0.071	0.072	0.061	0.052
			(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
Abrahamic household			0.018	0.033	0.030	0.026	0.023
			(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
First generation			-0.117	-0.155	-0.168	-0.169	-0.124
			(0.003)	(0.003)	(0.003)	(0.002)	(0.002)
1< parents born outside Can			0.029	-0.017	-0.020	-0.020	-0.014
			(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
1st gen x visible minority			-0.121	-0.112	-0.124	-0.112	-0.071
			(0.009)	(0.009)	(0.009)	(0.009)	(0.008)

Continued on next page

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Parent Born outside Can x vis. min.			0.035	0.049	0.035	0.049	0.006
			(0.009)	(0.009)	(0.009)	(0.009)	(0.008)
Mental health condition					-0.217	-0.180	-0.137
					(0.003)	(0.003)	(0.003)
Difficulty hearing					0.014	-0.012	-0.014
					(0.006)	(0.006)	(0.005)
Difficulties seeing					-0.025	-0.029	-0.018
					(0.004)	(0.003)	(0.003)
Difficulties with mobility					-0.379	-0.210	-0.173
					(0.006)	(0.006)	(0.005)
Difficulties learning					-0.225	-0.176	-0.127
					(0.006)	(0.005)	(0.005)
Other health problems					-0.139	-0.084	-0.078
					(0.003)	(0.002)	(0.002)
Missing mental health					-0.075	-0.082	-0.062
					(0.030)	(0.030)	(0.028)
Missing difficulty hearing					0.035	0.037	0.041
					(0.037)	(0.036)	(0.034)
Missing difficulty seeing					-0.008	-0.046	-0.049
					(0.036)	(0.036)	(0.034)
Missing difficulty mobility					-0.015	-0.023	-0.019
					(0.035)	(0.034)	(0.033)
Missing difficulties learning					-0.064	-0.019	-0.004
					(0.032)	(0.030)	(0.029)
Missing other					-0.130	-0.138	-0.101
					(0.027)	(0.027)	(0.026)
Constant	10.58	10.10	9.959	10.00	10.06	10.15	10.71
	(0.002)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.010)
Ind/occ sample						x	x
Ind/Occ dummies							x
Observations	3,312,030	3,312,030	3,312,030	3,312,030	3,312,030	3,119,070	3,119,070
R-squared	0.065	0.109	0.121	0.136	0.146	0.149	0.258

P-value testing two coefficients being equal

$\beta_{cw} = \beta_{tm}$	0.015	0.000	0.000	0.000	0.000	0.000	0.000
$\beta_{cw} = \beta_{bnafab}$	0.000	0.000	0.000	0.000	0.000	0.000	0.000
$\beta_{cw} = \beta_{tw}$	0.001	0.470	0.688	0.349	0.381	0.814	0.841
$\beta_{cw} = \beta_{nbamab}$	0.895	0.478	0.590	0.832	0.000	0.016	0.087
$\beta_{tm} = \beta_{tw}$	0.000	0.000	0.000	0.000	0.000	0.000	0.000
$\beta_{tm} = \beta_{bnafab}$	0.000	0.000	0.000	0.000	0.000	0.000	0.000
$\beta_{tm} = \beta_{nbamab}$	0.163	0.002	0.001	0.001	0.058	0.063	0.052
$\beta_{tw} = \beta_{bnafab}$	0.000	0.000	0.000	0.000	0.000	0.000	0.004
$\beta_{tw} = \beta_{nbamab}$	0.034	0.319	0.501	0.476	0.005	0.064	0.197
$\beta_{bnafab} = \beta_{nbamab}$	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Notes: Nb person, afab indicates a nonbinary person assigned female at birth and nb person, amab indicates a nonbinary person assigned male at birth. For the p-value tests: cw = cisgender woman, cm = cisgender man, tw = transgender woman, tm = transgender man, nbafab = nonbinary person assigned female at birth, nbamab = nonbinary person assigned male at birth. Robust standard errors in parentheses.

Table A2: Nonbinary and transgender log 2019 earnings relative to cisgender men: Transformed Coefficient and Standard Error to Percentages

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Cisgender woman	-0.304	-0.342	-0.342	-0.340	-0.330	-0.318	-0.223
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Trangender man	-0.264	-0.245	-0.240	-0.245	-0.190	-0.217	-0.131
	(0.017)	(0.017)	(0.017)	(0.017)	(0.018)	(0.017)	(0.018)
Transgender woman	-0.354	-0.351	-0.348	-0.353	-0.318	-0.314	-0.220
	(0.014)	(0.014)	(0.014)	(0.013)	(0.014)	(0.014)	(0.015)
Nb person, afab	-0.453	-0.498	-0.504	-0.504	-0.392	-0.420	-0.280
	(0.012)	(0.011)	(0.011)	(0.011)	(0.013)	(0.012)	(0.015)
Nb person, amb	-0.302	-0.328	-0.332	-0.336	-0.245	-0.268	-0.186
	(0.021)	(0.020)	(0.020)	(0.020)	(0.022)	(0.021)	(0.022)
Six age group FE	x	x	x	x	x	x	x
Visible minority	x	x	x	x	x	x	x
Indigenous	x	x	x	x	x	x	x
Three educ FE		x	x	x	x	x	x
Six relationship FE			x	x	x	x	x
Four child controls			x	x	x	x	x
Abrahamic household			x	x	x	x	x
Four immigrant FE			x	x	x	x	x
Census Subdivision FE				x	x	x	x
Six health FE					x	x	x
Ind/occ sample						x	x
Industry/occ FE							x
Observations	3,312,030	3,312,030	3,312,030	3,312,030	3,312,030	3,119,070	3,119,070
R-squared	0.065	0.109	0.121	0.136	0.146	0.149	0.258

Notes: Nb person, afab indicates a nonbinary person assigned female at birth and nb person, amab indicates a nonbinary person assigned male at birth. See data section for the description of the control sets, as well as Online Appendix Table A1. Robust standard errors in parentheses.

Table A3: Nonbinary and transgender log 2019 earnings relative to cisgender men: Sample restricted to person 1 (survey respondent)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Cisgender woman	-0.385	-0.426	-0.411	-0.406	-0.384	-0.367	-0.244
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
Transgender man	-0.408	-0.386	-0.372	-0.375	-0.267	-0.321	-0.201
	(0.040)	(0.041)	(0.040)	(0.040)	(0.040)	(0.039)	(0.037)
Transgender woman	-0.530	-0.490	-0.448	-0.439	-0.332	-0.331	-0.208
	(0.043)	(0.043)	(0.043)	(0.042)	(0.042)	(0.040)	(0.039)
Nb person, afab	-0.694	-0.772	-0.767	-0.765	-0.550	-0.598	-0.379
	(0.027)	(0.027)	(0.027)	(0.027)	(0.027)	(0.027)	(0.025)
Nb person, amab	-0.337	-0.360	-0.354	-0.363	-0.232	-0.264	-0.170
	(0.034)	(0.034)	(0.034)	(0.034)	(0.034)	(0.033)	(0.030)
Six age group FE	x	x	x	x	x	x	x
Visible minority	x	x	x	x	x	x	x
Indigenous	x	x	x	x	x	x	x
Three educ FE		x	x	x	x	x	x
Six relationship FE			x	x	x	x	x
Four child controls			x	x	x	x	x
Abrahamic household			x	x	x	x	x
Four immigrant FE			x	x	x	x	x
Census Subdivision FE				x	x	x	x
Six health FE					x	x	x
Ind/occ sample						x	x
Industry/occ FE							x
Observations	1,761,245	1,761,245	1,761,245	1,761,245	1,761,245	1,675,285	1,675,285
R-squared	0.056	0.102	0.113	0.134	0.147	0.148	0.260

P-value testing two coefficients being equal

$\beta_{cw} = \beta_{tm}$	0.570	0.325	0.327	0.438	0.003	0.245	0.250
$\beta_{cw} = \beta_{bnafab}$	0.000	0.000	0.000	0.000	0.000	0.000	0.000
$\beta_{cw} = \beta_{tw}$	0.001	0.133	0.387	0.430	0.210	0.364	0.362
$\beta_{cw} = \beta_{nbamab}$	0.152	0.056	0.098	0.209	0.000	0.002	0.015
$\beta_{tm} = \beta_{tw}$	0.036	0.077	0.193	0.268	0.264	0.869	0.891
$\beta_{tm} = \beta_{bnafab}$	0.000	0.000	0.000	0.000	0.000	0.000	0.000
$\beta_{tm} = \beta_{nbamab}$	0.174	0.631	0.742	0.826	0.492	0.262	0.519
$\beta_{tw} = \beta_{bnafab}$	0.001	0.000	0.000	0.000	0.000	0.000	0.000
$\beta_{tw} = \beta_{nbamab}$	0.000	0.018	0.087	0.161	0.063	0.199	0.436
$\beta_{bnafab} = \beta_{nbamab}$	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Notes: Nb person, afab indicates a nonbinary person assigned female at birth and nb person, amab indicates a nonbinary person assigned male at birth. See Online Appendix Table A1 for full variable list. Robust standard errors in parentheses. For the p-value tests: cw = cisgender woman, cm = cisgender man, tw = transgender woman, tm = transgender man, nbafab = nonbinary person assigned female at birth, nbamab = nonbinary person assigned male at birth.

Table A4: Nonbinary and transgender log 2019 earnings relative to cisgender men: Sample restricted Ages 30 to 59

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Cisgender woman	-0.385	-0.437	-0.438	-0.434	-0.422	-0.401	-0.274
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Transgender man	-0.292	-0.268	-0.262	-0.268	-0.209	-0.248	-0.152
	(0.028)	(0.028)	(0.027)	(0.027)	(0.027)	(0.027)	(0.025)
Transgender woman	-0.448	-0.453	-0.448	-0.458	-0.414	-0.404	-0.278
	(0.024)	(0.024)	(0.024)	(0.024)	(0.023)	(0.022)	(0.021)
Nb person, afab	-0.575	-0.683	-0.678	-0.684	-0.496	-0.549	-0.339
	(0.029)	(0.027)	(0.027)	(0.028)	(0.029)	(0.029)	(0.027)
Nb person, amab	-0.316	-0.358	-0.347	-0.360	-0.231	-0.282	-0.189
	(0.036)	(0.037)	(0.037)	(0.036)	(0.037)	(0.036)	(0.033)
Six age group FE	x	x	x	x	x	x	x
Visible minority	x	x	x	x	x	x	x
Indigenous	x	x	x	x	x	x	x
Three educ FE		x	x	x	x	x	x
Six relationship FE			x	x	x	x	x
Four child controls			x	x	x	x	x
Abrahamic household			x	x	x	x	x
Four immigrant FE			x	x	x	x	x
Census Subdivion FE				x	x	x	x
Six health FE					x	x	x
Ind/occ sample						x	x
Industry/occ FE							x
Observations	2,850,955	2,850,955	2,850,955	2,850,955	2,850,955	2,687,055	2,687,055
R-squared	0.048	0.097	0.108	0.125	0.136	0.137	0.255

	P-value testing two coefficients being equal						
$\beta_{cw} = \beta_{tm}$	0.001	0.000	0.000	0.000	0.000	0.000	0.000
$\beta_{cw} = \beta_{bnafab}$	0.000	0.000	0.000	0.000	0.010	0.000	0.018
$\beta_{cw} = \beta_{tw}$	0.009	0.492	0.688	0.310	0.739	0.910	0.842
$\beta_{cw} = \beta_{nbamab}$	0.058	0.033	0.013	0.041	0.000	0.001	0.009
$\beta_{tm} = \beta_{tw}$	0.000	0.000	0.000	0.000	0.000	0.000	0.000
$\beta_{tm} = \beta_{bnafab}$	0.000	0.000	0.000	0.000	0.000	0.000	0.000
$\beta_{tm} = \beta_{nbamab}$	0.602	0.050	0.063	0.042	0.624	0.443	0.363
$\beta_{tw} = \beta_{bnafab}$	0.001	0.000	0.000	0.000	0.027	0.000	0.079
$\beta_{tw} = \beta_{nbamab}$	0.002	0.030	0.021	0.023	0.000	0.004	0.021
$\beta_{bnafab} = \beta_{nbamab}$	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Notes: Nb person, afab indicates a nonbinary person assigned female at birth and nb person, amab indicates a nonbinary person assigned male at birth. See Online Appendix Table A1 for full variable list. Robust standard errors in parentheses. For the p-value tests: cw = cisgender woman, cm = cisgender man, tw = transgender woman, tm = transgender man, nbafab = nonbinary person assigned female at birth, nbamab = nonbinary person assigned male at birth.

Table A5: Nonbinary and transgender log earnings relative to cisgender men: Earnings from 2020

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Cisgender woman	-0.366	-0.429	-0.431	-0.427	-0.413	-0.398	-0.263
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Transgender man	-0.326	-0.292	-0.285	-0.288	-0.213	-0.231	-0.120
	(0.026)	(0.026)	(0.026)	(0.025)	(0.025)	(0.024)	(0.023)
Transgender woman	-0.476	-0.472	-0.466	-0.473	-0.419	-0.422	-0.283
	(0.023)	(0.023)	(0.023)	(0.023)	(0.023)	(0.022)	(0.021)
Nb person, afab	-0.644	-0.747	-0.759	-0.756	-0.537	-0.588	-0.345
	(0.025)	(0.024)	(0.024)	(0.024)	(0.024)	(0.024)	(0.022)
Nb person, amab	-0.418	-0.462	-0.468	-0.472	-0.336	-0.374	-0.249
	(0.034)	(0.034)	(0.034)	(0.034)	(0.034)	(0.033)	(0.030)
Six age group FE	x	x	x	x	x	x	x
Visible minority	x	x	x	x	x	x	x
Indigenous	x	x	x	x	x	x	x
Three educ FE		x	x	x	x	x	x
Six relationship FE			x	x	x	x	x
Four child controls			x	x	x	x	x
Abrahamic household			x	x	x	x	x
Four immigrant FE			x	x	x	x	x
Census Subdivion FE				x	x	x	x
Six health FE					x	x	x
Ind/occ sample						x	x
Industry/occ FE							x
Observations	3,269,520	3,269,520	3,269,520	3,269,520	3,269,520	3,135,995	3,135,995
R-squared	0.055	0.107	0.119	0.132	0.142	0.148	0.286

P-value testing two coefficients being equal

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
$\beta_{cw} = \beta_{transman}$	0.119	0.000	0.000	0.000	0.000	0.000	0.000
$\beta_{cw} = \beta_{nbafab}$	0.000	0.000	0.000	0.000	0.000	0.000	0.000
$\beta_{cw} = \beta_{transwoman}$	0.000	0.063	0.122	0.045	0.784	0.280	0.353
$\beta_{cw} = \beta_{nbamab}$	0.120	0.335	0.269	0.181	0.025	0.484	0.633
$\beta_{tm} = \beta_{transwoman}$	0.000	0.000	0.000	0.000	0.000	0.000	0.000
$\beta_{tm} = \beta_{nbafab}$	0.000	0.000	0.000	0.000	0.000	0.000	0.000
$\beta_{tm} = \beta_{nbamab}$	0.029	0.000	0.000	0.000	0.003	0.001	0.001
$\beta_{tw} = \beta_{nbafab}$	0.000	0.000	0.000	0.000	0.000	0.000	0.042
$\beta_{tw} = \beta_{nbamab}$	0.156	0.808	0.958	0.989	0.043	0.237	0.356
$\beta_{nbfab} = \beta_{nbamab}$	0.000	0.000	0.000	0.000	0.000	0.000	0.010

Notes: Nb person, afab indicates a nonbinary person assigned female at birth and nb person, amab indicates a nonbinary person assigned male at birth. See Online Appendix Table A1 for full variable list. Robust standard errors in parentheses. For the p-value tests: cw = cisgender woman, cm = cisgender man, tw = transgender woman, tm = transgender man, nbafab = nonbinary person assigned female at birth, nbamab = nonbinary person assigned male at birth.

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Table A6: Nonbinary and transgender log weekly earnings in 2020 relative to cisgender men

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Cisgender woman	-0.271	-0.316	-0.316	-0.313	-0.307	-0.307	-0.188
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Transgender man	-0.206	-0.189	-0.180	-0.184	-0.154	-0.154	-0.0624
	(0.024)	(0.024)	(0.024)	(0.024)	(0.024)	(0.024)	(0.023)
Transgender woman	-0.302	-0.311	-0.303	-0.310	-0.290	-0.290	-0.174
	(0.021)	(0.021)	(0.021)	(0.021)	(0.021)	(0.021)	(0.020)
Nb person, afab	-0.477	-0.557	-0.554	-0.556	-0.460	-0.460	-0.265
	(0.020)	(0.020)	(0.020)	(0.020)	(0.020)	(0.020)	(0.020)
Nb person, amab	-0.284	-0.323	-0.318	-0.327	-0.267	-0.267	-0.162
	(0.028)	(0.029)	(0.029)	(0.028)	(0.028)	(0.028)	(0.026)
Six age group FE	x	x	x	x	x	x	x
Visible minority	x	x	x	x	x	x	x
Indigenous	x	x	x	x	x	x	x
Three educ FE		x	x	x	x	x	x
Six relationship FE			x	x	x	x	x
Four child controls			x	x	x	x	x
Abrahamic household			x	x	x	x	x
Four immigrant FE			x	x	x	x	x
Census Subdivision FE				x	x	x	x
Six health FE					x	x	x
Ind/occ sample						x	x
Industry/occ FE							x
Observations	3,021,625	3,021,625	3,021,625	3,021,625	3,021,625	3,021,625	3,021,625
R-squared	0.041	0.081	0.088	0.104	0.106	0.106	0.211

P-value testing two coefficients being equal

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
$\beta_{cw} = \beta_{transman}$	0.008	0.000	0.000	0.000	0.000	0.000	0.000
$\beta_{cw} = \beta_{nbafab}$	0.000	0.000	0.000	0.000	0.000	0.000	0.000
$\beta_{cw} = \beta_{transwoman}$	0.144	0.789	0.533	0.906	0.419	0.419	0.494
$\beta_{cw} = \beta_{nbamab}$	0.655	0.813	0.967	0.623	0.166	0.166	0.326
$\beta_{tm} = \beta_{transwoman}$	0.003	0.000	0.000	0.000	0.000	0.000	0.000
$\beta_{tm} = \beta_{nbafab}$	0.000	0.000	0.000	0.000	0.000	0.000	0.000
$\beta_{tm} = \beta_{nbamab}$	0.038	0.000	0.000	0.000	0.002	0.002	0.005
$\beta_{tw} = \beta_{nbafab}$	0.000	0.000	0.000	0.000	0.000	0.000	0.001
$\beta_{tw} = \beta_{nbamab}$	0.603	0.727	0.687	0.641	0.526	0.526	0.718
$\beta_{nbfab} = \beta_{nbamab}$	0.000	0.000	0.000	0.000	0.000	0.000	0.001

Notes: Nb person, afab indicates a nonbinary person assigned female at birth and nb person, amab indicates a nonbinary person assigned male at birth. See Online Appendix Table A1 for full variable list. Robust standard errors in parentheses. For the p-value tests: cw = cisgender woman, cm = cisgender man, tw = transgender woman, tm = transgender man, nbafab = nonbinary person assigned female at birth, nbamab = nonbinary person assigned male at birth.

Table A7: Nonbinary and transgender log hourly earnings in 2020 relative to cisgender men for full-time workers

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Cisgender woman	-0.129	-0.172	-0.166	-0.162	-0.160	-0.160	-0.111
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Transgender man	-0.103	-0.089	-0.078	-0.082	-0.073	-0.073	-0.025
	(0.018)	(0.018)	(0.017)	(0.017)	(0.017)	(0.017)	(0.016)
Transgender woman	-0.121	-0.135	-0.127	-0.131	-0.125	-0.125	-0.083
	(0.015)	(0.015)	(0.015)	(0.015)	(0.015)	(0.015)	(0.014)
Nb person, afab	-0.151	-0.228	-0.218	-0.229	-0.198	-0.198	-0.116
	(0.014)	(0.014)	(0.014)	(0.014)	(0.014)	(0.014)	(0.013)
Nb person, amab	-0.087	-0.118	-0.103	-0.116	-0.098	-0.098	-0.063
	(0.020)	(0.020)	(0.020)	(0.020)	(0.020)	(0.020)	(0.019)
Six age group FE	x	x	x	x	x	x	x
Visible minority	x	x	x	x	x	x	x
Indigenous	x	x	x	x	x	x	x
Three educ FE		x	x	x	x	x	x
Six relationship FE			x	x	x	x	x
Four child controls			x	x	x	x	x
Abrahamic household			x	x	x	x	x
Four immigrant FE			x	x	x	x	x
Census Subdivision FE				x	x	x	x
Six health FE					x	x	x
Ind/occ sample						x	x
Industry/occ FE							x
Observations	3,312,030	3,312,030	3,312,030	3,312,030	3,312,030	3,119,070	3,119,070
R-squared	0.065	0.109	0.121	0.136	0.146	0.149	0.258

P-value testing two coefficients being equal

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
$\beta_{cw} = \beta_{transman}$	0.145	0.000	0.000	0.000	0.000	0.000	0.000
$\beta_{cw} = \beta_{nbafab}$	0.120	0.000	0.000	0.000	0.007	0.007	0.704
$\beta_{cw} = \beta_{transwoman}$	0.623	0.012	0.009	0.034	0.017	0.017	0.044
$\beta_{cw} = \beta_{nbamab}$	0.036	0.008	0.002	0.022	0.002	0.002	0.011
$\beta_{tm} = \beta_{transwoman}$	0.433	0.046	0.031	0.029	0.020	0.020	0.007
$\beta_{tm} = \beta_{nbafab}$	0.035	0.000	0.000	0.000	0.000	0.000	0.000
$\beta_{tm} = \beta_{nbamab}$	0.538	0.275	0.347	0.186	0.346	0.346	0.123
$\beta_{tw} = \beta_{nbafab}$	0.157	0.000	0.000	0.000	0.000	0.000	0.084
$\beta_{tw} = \beta_{nbamab}$	0.168	0.506	0.331	0.558	0.263	0.263	0.403
$\beta_{nbfab} = \beta_{nbamab}$	0.009	0.000	0.000	0.000	0.000	0.000	0.021

Notes: Nb person, afab indicates a nonbinary person assigned female at birth and nb person, amab indicates a nonbinary person assigned male at birth. See Online Appendix Table A1 for full variable list. Robust standard errors in parentheses. For the p-value tests: cw = cisgender woman, cm = cisgender man, tw = transgender woman, tm = transgender man, nbafab = nonbinary person assigned female at birth, nbamab = nonbinary person assigned male at birth.

Table A8: Nonbinary and transgender employment in the census reference week relative to cisgender men

	(1)	(2)	(3)	(4)	(5)
Cisgender woman	-0.0701	-0.0873	-0.0889	-0.0888	-0.0795
	(0.0004)	(0.0004)	(0.0004)	(0.0004)	(0.0004)
Trangender man	-0.114	-0.102	-0.0942	-0.0932	-0.0507
	(0.0086)	(0.0083)	(0.0082)	(0.0082)	(0.0080)
Transgender woman	-0.166	-0.157	-0.150	-0.149	-0.120
	(0.0075)	(0.0072)	(0.0072)	(0.0071)	(0.0070)
Nb person, afab	-0.120	-0.146	-0.142	-0.137	-0.0170*
	(0.0076)	(0.0073)	(0.0073)	(0.0072)	(0.0071)
Nb person, amab	-0.130	-0.141	-0.134	-0.128	-0.0577
	(0.012)	(0.0105)	(0.0105)	(0.0105)	(0.0104)
Six age group FE	x	x	x	x	x
Visible minority	x	x	x	x	x
Indigenous	x	x	x	x	x
Three educ FE		x	x	x	x
Six relationship FE			X	x	x
Four child controls			x	x	x
Abrahamic household			x	x	x
Four immigrant FE			x	x	x
Census Subdivision FE				x	x
Six health FE					x
Observations	4,095,475	4,095,475	4,095,475	4,095,475	4,095,475
R-squared	0.025	0.074	0.091	0.102	0.135

P-value testing two coefficients being equal

$\beta_{cw} = \beta_{tm}$	0.000	0.078	0.524	0.586	0.000
$\beta_{cw} = \beta_{bnafab}$	0.000	0.000	0.000	0.000	0.000
$\beta_{cw} = \beta_{tw}$	0.000	0.000	0.000	0.000	0.000
$\beta_{cw} = \beta_{nbamab}$	0.000	0.000	0.000	0.000	0.036
$\beta_{tm} = \beta_{tw}$	0.000	0.000	0.000	0.000	0.000
$\beta_{tm} = \beta_{bnafab}$	0.589	0.000	0.000	0.000	0.002
$\beta_{tm} = \beta_{nbamab}$	0.258	0.004	0.003	0.008	0.594
$\beta_{tw} = \beta_{bnafab}$	0.000	0.258	0.474	0.233	0.000
$\beta_{tw} = \beta_{nbamab}$	0.006	0.196	0.210	0.104	0.000
$\beta_{bnafab} = \beta_{nbamab}$	0.474	0.698	0.498	0.502	0.001

Notes: The dependent variable equals one if an individual is employed in the Census reference week and zero otherwise. Nb person, afab indicates a nonbinary person assigned female at birth and nb amab person indicates a nonbinary person assigned male at birth. See Online Appendix Table A1 for full variable list. Robust standard errors in parentheses. For the p-value tests: cw = cisgender woman, cm = cisgender man, tw = transgender woman, tm = transgender man, nbafab = nonbinary person assigned female at birth, nbamab = nonbinary person assigned male at birth.