reports

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Table of contents

Preface

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1 Planned Analysis

```
library(censuspumf)
library(tidyverse)
```

```
Warning: package 'ggplot2' was built under R version 4.3.3
```

```
-- Attaching core tidyverse packages ------------------------ tidyverse 2.0.0 --
v dplyr     1.1.4     v readr     2.1.4
v forcats   1.0.0     v stringr   1.5.1
v ggplot2   3.5.0     v tibble    3.2.1
v lubridate 1.9.3     v tidyr     1.3.0
v purrr     1.0.2
-- Conflicts ------------------------------------------ tidyverse_conflicts() --
x dplyr::filter() masks stats::filter()
x dplyr::lag()    masks stats::lag()
i Use the conflicted package (<http://conflicted.r-lib.org/>) to force all conflicts to becom
```

```
library(gt)
```

```
Warning: package 'gt' was built under R version 4.3.3
```

```
d0 <- censuspumf::records |>
  censuspumf::encode_labels()

d <- d0 |>
  mutate(
    is_working_age_lgl = as.integer(AGEGRP) |> between(7, 16),
    is_youth_lgl = as.integer(AGEGRP) |> between(7, 9),
    is_youth_fct = factor(is_youth_lgl * -1 + 2, labels = c("Youth (18-29)", "Not Youth (30-6
    lf_status = LFACT |> str_extract("Employed|Unemployed|Not in the labour force") |> fct_re
    lf_status_neet = case_when(
      lf_status %in% c("Unemployed", "Not in the labour force") & ATTSCH == "Did not attend s
```

```
      TRUE ~ as.character(lf_status)
    ) |>
    fct_relevel("Employed", "Unemployed", "Not in the labour force", "Not in Employment, Edu
  )
```

1.1 Youth Representation in the Canadian Population

- In this analysis, Youth are defined as individuals aged 18 to 29. We care about this group because they are old enough that most of them have a relationship to the labour market, but young enough that they are still in the process of forming their careers and lives.
- Youth, as defined, comprise roughly 15% of the Canadian population and 24% of the working-age population.

```
t_rep_pop <- d |>
  filter(!is.na(AGEGRP)) |>
  group_by(AGEGRP, is_youth_lgl, is_working_age_lgl) |>
  summarize(n = sum(WEIGHT), .groups = "drop") |>
  mutate(
    rep_pop = n / sum(n), cumulative_pop = cumsum(rep_pop * is_youth_lgl),
    rep_working_age = (n * is_working_age_lgl) / sum(n * is_working_age_lgl),
    cumulative_working_age = cumsum(rep_working_age * is_youth_lgl)
  )

t_rep_pop |>
  gt() |>
  fmt_percent(columns = c(rep_pop:cumulative_working_age), decimals = 0)
```

AGEGRP	is_youth_lgl	is_working_age_lgl	n	rep_pop	cumulative_pop	rep_work
0 to 4 years	FALSE	FALSE	1817305.3	5%	0%	
5 to 6 years	FALSE	FALSE	810764.1	2%	0%	
7 to 9 years	FALSE	FALSE	1240983.0	3%	0%	
10 to 11 years	FALSE	FALSE	848919.1	2%	0%	
12 to 14 years	FALSE	FALSE	1277171.4	4%	0%	
15 to 17 years	FALSE	FALSE	1195913.2	3%	0%	
18 to 19 years	TRUE	TRUE	773961.0	2%	2%	
20 to 24 years	TRUE	TRUE	2166090.1	6%	8%	
25 to 29 years	TRUE	TRUE	2398480.2	7%	15%	
30 to 34 years	FALSE	TRUE	2495961.1	7%	15%	

35 to 39 years	FALSE	TRUE	2503889.7	7%	15%
40 to 44 years	FALSE	TRUE	2379916.9	7%	15%
45 to 49 years	FALSE	TRUE	2269550.1	6%	15%
50 to 54 years	FALSE	TRUE	2338141.9	6%	15%
55 to 59 years	FALSE	TRUE	2625887.2	7%	15%
60 to 64 years	FALSE	TRUE	2525859.1	7%	15%
65 to 69 years	FALSE	FALSE	2160082.5	6%	15%
70 to 74 years	FALSE	FALSE	1786901.5	5%	15%
75 to 79 years	FALSE	FALSE	1203562.3	3%	15%
80 to 84 years	FALSE	FALSE	741917.0	2%	15%
85 years and over	FALSE	FALSE	613097.2	2%	15%

1.2 Youth Distribution Across Provinces

The distribution of youth across provinces is very similar to the distribution of the general population.

```
t_prov_youth <- d |>
  filter(!is.na(PR), is_youth_lgl) |>
  group_by(PR) |>
  summarize(n = sum(WEIGHT), .groups = "drop") |>
  mutate(`Youth 18-29 (%)` = n / sum(n)) |>
  rename(`Youth 18-29 (n)` = n)

t_prov_all <- d |>
  filter(!is.na(PR)) |>
  group_by(PR) |>
  summarize(n = sum(WEIGHT), .groups = "drop") |>
  mutate(`All Ages (%)` = n / sum(n)) |>
  rename(`All Ages (n)` = n)


t_prov_youth |>
  left_join(t_prov_all, by = "PR") |>
  gt(rowname_col = "PR") |>
  fmt_number(columns = c(2, 4), decimals = 0) |>
  fmt_percent(columns = c(3, 5), decimals = 0)
```

	Youth 18-29 (n)	Youth 18-29 (%)	All Ages (n)	All Ages (%)

Newfoundland and Labrador	59,502	1%	502,098	1%
Prince Edward Island	21,450	0%	150,482	0%
Nova Scotia	137,986	3%	955,820	3%
New Brunswick	96,491	2%	759,158	2%
Quebec	1,141,846	21%	8,308,479	23%
Ontario	2,169,233	41%	14,031,754	39%
Manitoba	205,087	4%	1,307,187	4%
Saskatchewan	155,646	3%	1,103,275	3%
Alberta	611,346	11%	4,177,717	11%
British Columbia	723,060	14%	4,915,941	14%
Northern Canada	16,885	0%	116,566	0%

1.3 Youth Demographics

- Compared to other Canadians of working age, higher proportions of youth are:
  - Indigenous (6% vs 4%)
  - Non-immigrants (75% vs 69%)
  - Non-white (41% vs 31%), particularly South Asian (11% vs 7%) and Black (5% vs 3%)

```
t_demos <- d |>
  pivot_longer(
    cols = c(IMMSTAT, Gender, ABOID, DPGRSUM),
    names_to = "var", values_to = "value"
  ) |>
  filter(!is.na(AGEGRP), is_working_age_lgl, !is.na(value)) |>
  group_by(is_youth_fct, var, value) |>
  summarize(n = sum(WEIGHT), .groups = "drop_last") |>
  mutate(
    p = n / sum(n)
  )  |>
  select(-n) |>
  pivot_wider(names_from = is_youth_fct, values_from = p)

t_demos |>
  left_join(
    censuspumf::var_labels
  ) |>
  group_by(lab) |>
  select(-var) |>
```

```
  gt(groupname_col = "lab", rowname_col = "value") |>
  fmt_percent(columns = c(2, 3), decimals = 0)
```

```
Joining with `by = join_by(var)`
```

	Youth (18-29)	Not Youth (30-64)
Indigenous: Indigenous identity - Detailed		
First Nations (North American Indian)	4%	2%
Métis	2%	2%
Inuk (Inuit)	0%	0%
Multiple Indigenous responses	0%	0%
Indigenous responses not included elsewhere	0%	0%
Non-Indigenous identity	94%	96%
Population group		
White	59%	69%
South Asian	11%	7%
Chinese	5%	5%
Black	5%	3%
Filipino	3%	3%
Arab	2%	2%
Latin American	2%	2%
Southeast Asian	1%	1%
West Asian	1%	1%
Korean	1%	1%
Japanese	0%	0%
Other population groups, n.i.e.	1%	1%
Other multiple population groups	4%	2%
Indigenous peoples	6%	4%
Gender of person (binary)		
Woman+	49%	51%
Man+	51%	49%
Immigration: Immigrant status		
Non-immigrants	75%	69%
Immigrants	16%	29%
Non-permanent residents	9%	2%

1.4 Youth Education and Labour Force Status

Compared to the working-age population aged 30 or older, youth are: - More likely to be unemployed (12% vs 7%) - More likely to be attending school (41% vs 5%), especially at the university level (22% vs 2%) - Less likely to be "NEET" (15% vs 25%)

```
t_lfs <- d |>
  filter(is_working_age_lgl) |>
  pivot_longer(
    cols = c(ATTSCH, HDGREE, lf_status, lf_status_neet),
    names_to = "var", values_to = "value"
  ) |>
  filter(!is.na(value)) |>
  group_by(is_youth_fct, var, value) |>
  summarize(n = sum(WEIGHT), .groups = "drop_last") |>
  mutate(
    p = n / sum(n)
  ) |>
  select(-n) |>
  pivot_wider(names_from = is_youth_fct, values_from = p) |>
  left_join(
    censuspumf::var_labels |>
      filter(var != "ATTSCH") |>
      bind_rows(
        tibble(
          var = c("lf_status", "lf_status_neet", "ATTSCH"),
          lab = c("Labour Force Status", "Labour Force Status (NEET)", "Education: Ongoing S
        )
      )
  ) |>
  ungroup() |>
  arrange(lab) |>
  group_by(lab)
```

```
Joining with `by = join_by(var)`
```

```
t_lfs |>
  select(-var) |>
  gt(groupname_col = "lab", rowname_col = "value") |>
  fmt_percent(columns = c(2, 3), decimals = 0)
```

Education: Highest certificate, diploma or degree
No certificate, diploma or degree
High (secondary) school diploma or equivalency certificate
Non-apprenticeship trades certificate or diploma
Apprenticeship certificate
Program of 3 months to less than 1 year (College, CEGEP and other non-university certificates or diplomas)
Program of 1 to 2 years (College, CEGEP and other non-university certificates or diplomas)
Program of more than 2 years (College, CEGEP and other non-university certificates or diplomas)
University certificate or diploma below bachelor level
Bachelor's degree
University certificate or diploma above bachelor level
Degree in medicine, dentistry, veterinary medicine or optometry
Master's degree
Earned doctorate
Education: Ongoing Schooling
Did not attend school
Elementary or secondary school
College, CEGEP, trade school or other non-university institution
University
Multiple responses
Labour Force Status
Employed
Unemployed
Not in the labour force
Labour Force Status (NEET)
Employed
Unemployed
Not in the labour force
Not in Employment, Education, or Training (NEET)

1.4.1 Employment Characteristics

```
t_work <- d |>
  filter(is_working_age_lgl) |>
  pivot_longer(
```

```
    cols = c(FPTWK, PWDUR, MODE, POWST),
    names_to = "var", values_to = "value"
  ) |>
  filter(!is.na(value)) |>
  group_by(is_youth_fct, var, value) |>
  summarize(n = sum(WEIGHT), .groups = "drop_last") |>
  mutate(
    p = n / sum(n)
  ) |>
  select(-n) |>
  pivot_wider(names_from = is_youth_fct, values_from = p) |>
  mutate(var = str_to_upper(var)) |>
  left_join(
    censuspumf::var_labels, by = "var"
  ) |>
  ungroup() |>
  arrange(lab) |>
  group_by(lab)

d |>
  select(where(~is.factor(.x) & any(str_detect(levels(.x), "\\$"))))
```

```
# A tibble: 980,868 x 8
   CFInc            CFInc_AT EFInc EFInc_AT EfDIMBM_2018 HHInc HHInc_AT HHMRKINC
   <fct>            <fct>    <fct> <fct>    <fct>        <fct> <fct>    <fct>
 1 $150,000 to $17~ $120,00~ $250~ $200,00~ $200,000 to~ $250~ $200,00~ $250,00~
 2 $65,000 to $69,~ $65,000~ $65,~ $65,000~ $65,000 to ~ $65,~ $65,000~ $45,000~
 3 $15,000 to $16,~ $15,000~ $15,~ $15,000~ $15,000 to ~ $15,~ $15,000~ Under $~
 4 $50,000 to $54,~ $50,000~ $110~ $100,00~ $100,000 to~ $110~ $100,00~ $70,000~
 5 $40,000 to $44,~ $40,000~ $40,~ $40,000~ $35,000 to ~ $40,~ $40,000~ $17,000~
 6 Under $2,000     Under $~ Unde~ Under $~ Under $2,000 $100~ $85,000~ $75,000~
 7 $25,000 to $29,~ $25,000~ $25,~ $25,000~ $30,000 to ~ $25,~ $25,000~ $2,000 ~
 8 $150,000 to $17~ $120,00~ $150~ $120,00~ $135,000 to~ $150~ $120,00~ $150,00~
 9 $100,000 to $10~ $95,000~ $100~ $95,000~ $95,000 to ~ $100~ $95,000~ $35,000~
10 $85,000 to $89,~ $85,000~ $85,~ $85,000~ $85,000 to ~ $85,~ $85,000~ $75,000~
# i 980,858 more rows
```

```
t_work |>
  select(-var) |>
  gt() |>
  fmt_percent(columns = c(2, 3), decimals = 0)
```

value	You
Commuting: Commuting duration	
Less than 15 minutes	
Between 15 and 29 minutes	
Between 30 and 44 minutes	
Between 45 and 59 minutes	
60 minutes and over	
Commuting: Main mode of commuting	
Bicycle	
Car, truck or van - as a driver	
Motorcycle, scooter or moped	
Other method	
Car, truck or van - as a passenger	
Public transit	
Walked	
Commuting: Place of work status	
Worked at home	
No fixed workplace	
Worked outside Canada	
Worked in census subdivision (municipality) of residence	
Worked in a different census subdivision (municipality) within the census division (county) of residence	
Worked in a different census division (county)	
Worked in a different province or territory	
Labour: Full-time or part-time weeks worked in 2020	
Worked mainly full-time weeks in 2020	
Worked mainly part-time weeks in 2020	

1.4.2 Income

Average total income for working-age youth is roughly half of that for the 30+ working-age population.

```
t_income <- d |>
  filter(is_working_age_lgl) |>
  pivot_longer(
    cols = c(EmpIn, Invst, GTRfs, TotInc),
    names_to = "var", values_to = "value"
```

```
  ) |>
  filter(!is.na(value)) |>
  group_by(is_youth_fct, var) |>
  summarize(n = sum(WEIGHT), mean = weighted.mean(value, WEIGHT), .groups = "drop") |>
  mutate(
    var = str_to_upper(var)
  ) |>
  left_join(var_labels) |>
  select(-var) |>
  group_by(lab)
```

```
Joining with `by = join_by(var)`
```

```
t_income |>
  gt(groupname_col = "lab", rowname_col = "is_youth_fct") |>
  fmt_number(columns = n, decimals = 0) |>
  fmt_currency(columns = "mean", decimals = 0)
```

	n	mean
Income: Employment income		
Youth (18-29)	4,414,787	$28,101
Not Youth (30-64)	14,229,005	$61,732
Income: Government transfers		
Youth (18-29)	4,850,715	$7,688
Not Youth (30-64)	13,837,543	$9,328
Income: Investment income		
Youth (18-29)	775,433	$2,034
Not Youth (30-64)	5,326,668	$10,312
Income: Total income		
Youth (18-29)	5,150,988	$32,908
Not Youth (30-64)	16,813,639	$65,992

1.4.3 Key Finding: The Canadian Labour Force is Growing More Educated

We observe a smaller proportion of youth who have attained a university degree (24%) compared to non-youth of working age (31%), but the much higher proportion of working-age youth in university suggests that this gap may invert in the future.

1.4.4 Key Finding: The NEET Youth Population is Too Large to Ignore

Of the working-age youth who are not employed, most are in school. A quarter of the 30+ working-age population is NEET, as compared to 15% of working-age youth. In absolute terms, however, the number of NEET youth is still substantial (809,115).

```
d |>
  filter(is_youth_lgl, !is.na(lf_status_neet)) |>
  group_by(lf_status_neet) |>
  summarize(
    n = sum(WEIGHT)
  ) |>
  gt() |>
  fmt_number(columns = "n", decimals = 0)
```

lf_status_neet	n
Employed	3,518,601
Unemployed	325,216
Not in the labour force	682,119
Not in Employment, Education, or Training (NEET)	809,115

1.5 Poverty and Hardship

According to all of the low-income measures provided in the Census PUMF, working-age youth are more likely than their older counterparts to be live in income poverty. According to the MBM poverty line (Canada's current official measure), 12% of working-age youth are in poverty, compared to 8% of the 30+ working-age population. In spite of this, working-age youth are no more likely to be in core housing need than their elders. Across both groups, the rate of core housing need is 7%.

```
d_pov <- d |>
  filter(is_working_age_lgl) |>
  pivot_longer(
    cols = c(matches("LICO|LIM|LoMBM"), HCORENEED_IND),
    names_to = "var", values_to = "value"
  ) |>
  mutate(
    var = str_to_upper(var)
  ) |>
```

```
  filter(!is.na(value)) |>
  group_by(is_youth_fct, var, value) |>
  summarize(
    n = sum(WEIGHT), .groups = "drop_last"
  ) |>
  mutate(
    p = n / sum(n)
  ) |>
  select(-n) |>
  pivot_wider(names_from = is_youth_fct, values_from = p) |>
  ungroup() |>
  left_join(
    censuspumf::var_labels
  ) |>
  group_by(lab)
```

```
Joining with `by = join_by(var)`
```

```
d_pov |>
  select(-var) |>
  gt(groupname_col = "lab", rowname_col = "value") |>
  fmt_percent(columns = c(2, 3), decimals = 0)
```

	Youth (18-29)	Not Youth (30-64)
Housing core need indicator		
Not in core need	93%	93%
In core need	7%	7%
Income: Low-income status based on LICO-AT		
Not in low income	91%	95%
In low income	9%	5%
Income: Low-income status based on LICO-BT		
Not in low income	89%	93%
In low income	11%	7%
Income: Low-income status based on LIM-AT		
Not in low income	90%	91%
In low income	10%	9%

Income: Low-income status based on LIM-BT		
Not in low income	88%	89%
In low income	12%	11%
Income: Poverty status based on 2018-base MBM		
Not in poverty	88%	92%
In poverty	12%	8%