Total Employment in Toronto

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This paper investigates the employment landscape in Toronto municipalities for the year 2020, focusing on the employed population. Utilizing data normalization techniques, we explore the relative distribution of employment across various regions. Our findings reveal insights into the employment dynamics, highlighting key trends and disparities among different municipalities. By examining the normalized data, this study provides a nuanced understanding of the employment structure within Toronto, contributing valuable perspectives for policymakers and urban planners aiming to address regional employment challenges.

```
#### Preamble ####
# Purpose: Read in data from the 2020 Toronto Municipalities
# employment rates and make a graph.
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```

Acquiring the Data

```
# Download and Read the data
#### Read in the data ####
raw_emp_data <-
  read_csv(
    file =
      "Emp2020.csv",
    show_col_types = FALSE,
  )
```

```
New names:
* `` -> `...1`
```

```r
# Make the names easier to type by adjusting the name of the variable
cleaned_emp_data <-
  clean_names(raw_emp_data)

# First six rows of cleaned data
head(cleaned_emp_data)
```

```
# A tibble: 6 x 11
  x1        x2015_total_employment x2016_total_employment x2017_total_employment
  <chr>                      <dbl>                  <dbl>                  <dbl>
1 Downtown                  508640                 511370                 543530
2 North Yo~                  35000                  34090                  33900
3 Yonge-Eg~                  17390                  17540                  18780
4 Scarboro~                  16690                  16350                  17210
5 Etobicok~                   9770                   9490                  10850
6 Downtown~                 587490                 588840                 624270
# i 7 more variables: x2018_total_employment <dbl>,
#   x2019_total_employment <dbl>, x2020_total_employment <dbl>,
#   x2015_2020_net_change <dbl>, x2015_2020_growth_rate_percent <chr>,
#   x2019_2020_net_change <dbl>, x2019_2020_growth_rate_percent <chr>
```

```r
# Renaming the variables of interest to English
cleaned_emp_data <- cleaned_emp_data |>
  select(
    x1,
    x2020_total_employment
  )

cleaned_emp_data <-
  cleaned_emp_data |>
  rename(
    municipalities = x1,
    total_employment = x2020_total_employment
  )

head(cleaned_emp_data)
```

```
# A tibble: 6 x 2
  municipalities          total_employment
  <chr>                              <dbl>
```

```
1 Downtown                          537310
2 North York Centre                  34920
3 Yonge-Eglinton                     17500
4 Scarborough Centre                 15250
5 Etobicoke Centre                    9960
6 Downtown and the Centres          614940
```

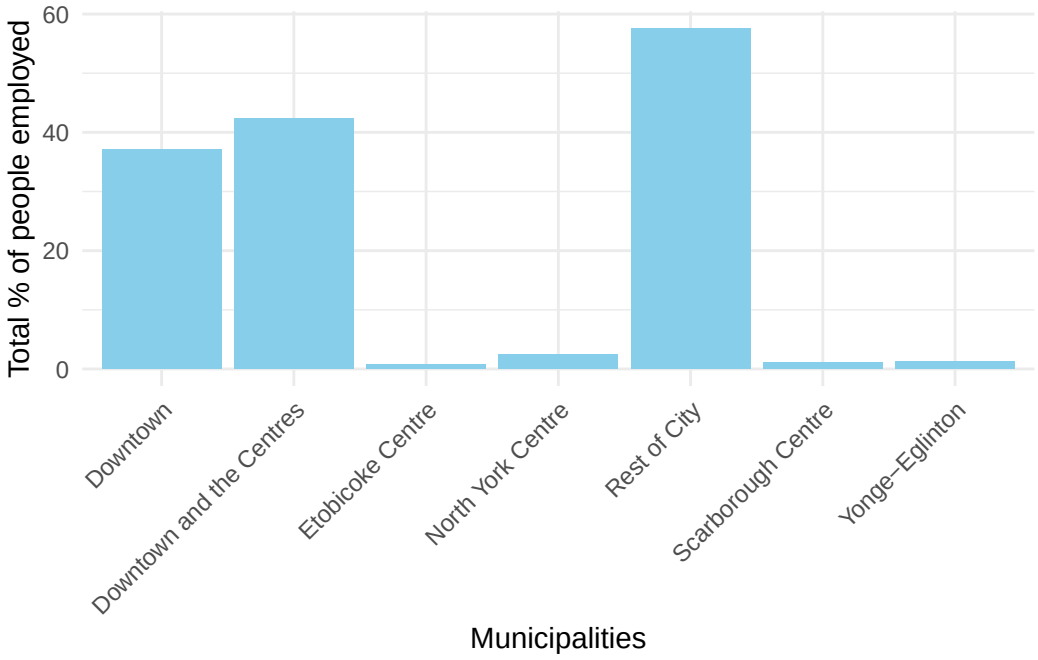
Explore

```
# Assuming your data is stored in a dataframe named 'table4_data'

# Extract the 'total_employment' and 'municipalities' columns
cleaned_emp_data <- cleaned_emp_data |>
  mutate(normalized_data = (total_employment / total_employment[which(municipalities == "C
  filter(municipalities != "City Total")

write_csv(
  x = cleaned_emp_data,
  file = "cleaned_emp_data.csv"
)

head(cleaned_emp_data)
```

```
# A tibble: 6 x 3
  municipalities           total_employment normalized_data
  <chr>                               <dbl>           <dbl>
1 Downtown                           537310          37.1
2 North York Centre                   34920           2.41
3 Yonge-Eglinton                      17500           1.21
4 Scarborough Centre                  15250           1.05
5 Etobicoke Centre                     9960           0.687
6 Downtown and the Centres           614940          42.4
```

```
# Building the graph of interest using ggplot2, from the planning stage
#| eval: true
#| warning: false
#| label: fig-employment
cleaned_emp_data |>
  ggplot(aes(x = municipalities, y = normalized_data)) +
  geom_bar(stat = "identity", fill = "skyblue") +
```

```r
theme_minimal() +
theme(axis.text.x = element_text(angle = 45, hjust = 1)) +
labs(x = "Municipalities", y = "Total % of people employed")
```



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The dataset provides insights into the employment landscape across different municipalities in Toronto, including total employment numbers for each municiplaities The analysis highlights key findings:

- Downtown and the Centres Dominates Employment: Downtown and the Centres stand out with the highest total employment of 614,940, constituting approximately 42.41% of the total employment in the dataset. The normalized data further emphasizes the significant contribution of Downtown and the Centres to the overall employment scenario.
- Varied Employment Levels in Different Municipalities: Municipalities like North York Centre, Yonge-Eglinton, Scarborough Centre, and Etobicoke Centre exhibit lower total employment but still play crucial roles in the city's employment landscape.

In conclusion, the analysis sheds light on the varying employment levels and distributions across Toronto's municipalities. The concentration of employment in Downtown and the Centres suggests a centralization of economic activity, however much focus are needed to create more jobs in other municipalities.

References

(R Core Team 2022) (Wickham et al. 2019) (City of Toronto 2021)

City of Toronto. 2021. "Toronto Employment Survey Summary Tables." 2021. https://open.toronto.ca/dataset/toronto-employment-survey-summary-tables/.

R Core Team. 2022. *R: A Language and Environment for Statistical Computing*. Vienna, Austria: R Foundation for Statistical Computing. https://www.R-project.org/.

Wickham, Hadley, Mara Averick, Jennifer Bryan, Winston Chang, Lucy D'Agostino McGowan, Romain François, Garrett Grolemund, et al. 2019. "Welcome to the tidyverse." *Journal of Open Source Software* 4 (43): 1686. https://doi.org/10.21105/joss.01686.