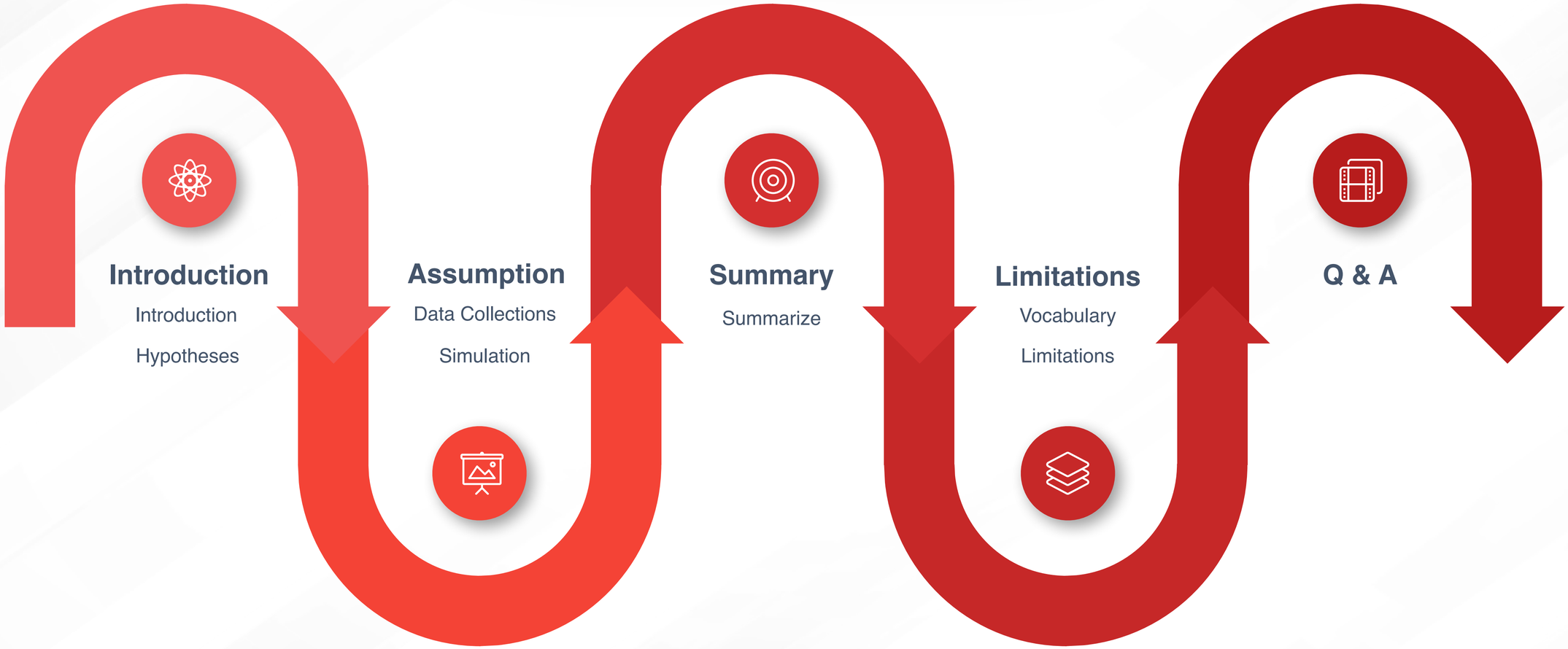
# STA130 Presentation

## Millennial's Housing Affordability in Toronto

Xuanqi Henry Wei, Yuehe Leon Zhang, Shujun Chloe Yang, Mujtaba Rahman
Group 4

# Statistical Inference



# Introduction

Millennial’s Housing Affordability in Toronto

A team of researchers were interested in understanding millennial’s views regarding housing affordability in Toronto. The team interviewed 850 millennials currently living in Toronto. 84% reported that they felt housing prices were unaffordable in the city. Suppose the researchers were interested in testing whether this proportion was different from a study published last year, which found that 92% of millennials reported that housing costs were unaffordable. The researchers reported a p-value of 0.023.

1. Topic: Millennial’s views regarding housing affordability in Toronto.

2. Interviewee: 850 millennials currently living in Toronto.

3. Purpose: whether the proportion of feeling the housing prices were unaffordable was different from a study published last year

4. P-value: 0.023

# Objectives

/ Millennial’s Housing Affordability in Toronto /

Null Hypothesis: The proportion of millennials who think housing costs unaffordable was not different from a study published last year

Alternative Hypothesis: The proportion of millennials who think housing costs unaffordable was different from a study published last year

Significant Level = 0.05

# Test Statistics & Simulation

**Assumption:**
There are no general housing policies (e.g., price ceiling) in Toronto implemented between 2022 and 2023. No intended treatment difference between the two populations.

**Under the null hypotheses:**

1. Larger **population** than the study of this year (N = 850), take N' = 850.

2. Generate multiple **simulated** samples.

3. Calculate **test statistics** for each sample: fractions of millennial-unaffordable in simulation.

4. Calculate the p-value using the test statistics T, compare with a (0.05).

# Summarize



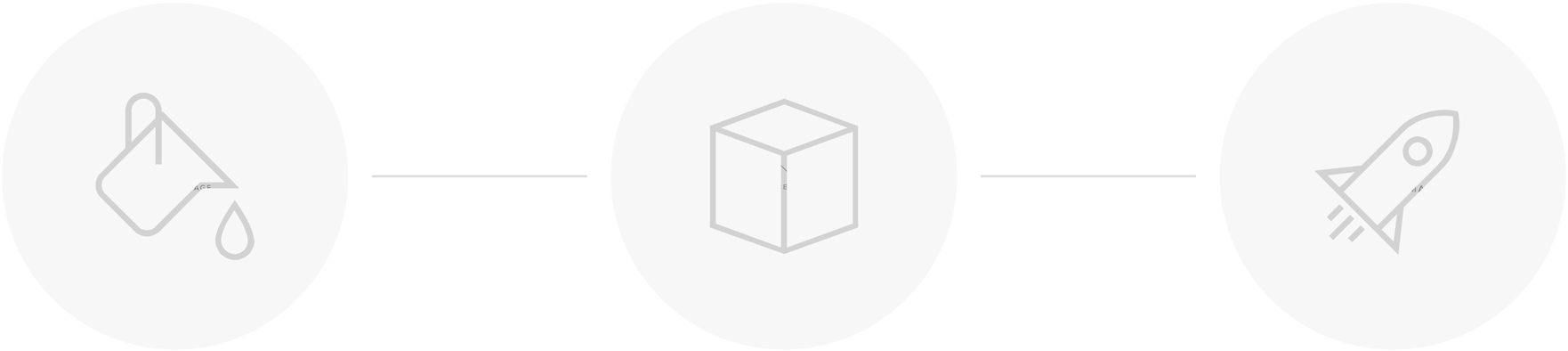
1. Have strong enough evidence to against H0. (p-value is 0.023 which is less than 0.05)

2. There are difference between the proportion of millennials who think housing price is unaffordable in Toronto in the last two years.

3. But because of the limitation, it is hard to make the conclusion now, but at least we can say  is so here we choose to reject H0, and claim that the different exist.

# Limitations





### SAMPLING

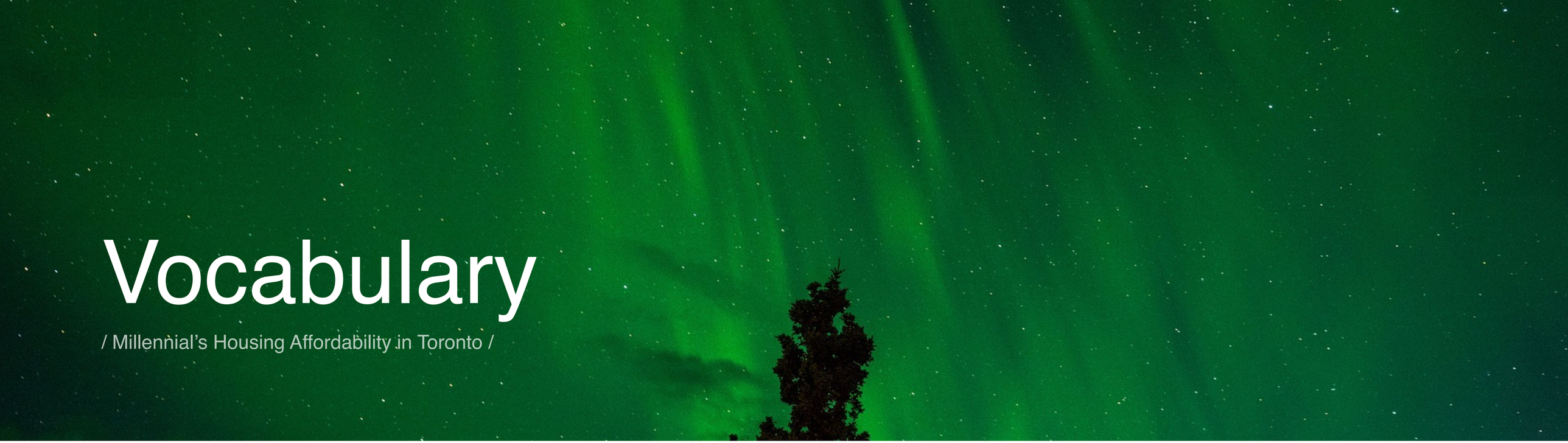
‘850’ is not such a great number which would aid in making any bias present in the population negligible. Moreover, there is a probability for the random sample to include millennials of certain socio-economic backgrounds more than that of others.

### P-VALUE

Significant and if the null-hypothesis were to be true, the samples from the current and the last year can be considered as nearly identical. However, we can still not neglect the possible difference in circumstances in studies which are a year apart as they have a direct affect on the view of millennials.

### REAL ESTATE VALUATION

inflation, depreciation, changes in; minimum wages, GDP (per capita as well) or the CPI index



# Vocabulary

/ Millennial's Housing Affordability in Toronto /

1

**STATISTICAL INFERENCE**

the process through which inferences about a population are made based on certain statistics calculated from a sample of data drawn from that population.

2

**TEST STATISTIC**

a number that describes the sample. The value can change each time we play different sample function in R.
(0.08)

3

**PARAMETER**

the number that can describes the population. It is the data that we can only try to get closer to by simulation if we use sample test.
(it is like a aliens, we know it is here, but it is almost impossible to find it.)

4

**P-VALUE**

P-value is the probability of observing data that are at least as extreme as the sample data, under the assumption that H0 is true.

# Member Contributions

Xuanqi Wei(Henry): Introduction, Hypotheses, Slides Making

Yuehe Zhang(Leon): Assumptions & Procedure(Data Collection & Simulation)

Shujun Yang(Chloe): Summarize, Vocabulary

Mujtaba Rahman: Vocabulary & Limitations

Thank you so much for listening!