

# Effect of commute mode on workplace arrival alertness and satisfaction: a pilot study

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## Objectives

- To access the methods and procedure for large scale feasibility.
- To determine the best commute mode for optimal alertness upon arrival to work.
- To determine the best measurements of alertness.

## Rationale

- According to statscan<sup>1</sup> 82% of commuters travelled by car, 12% by public transit and 6% used active transit (walking or biking).
- Toronto gives it's citizen many options in terms of commute type.
- 63% of Students work as means to funding their post secondary education<sup>2</sup>.
- Studies show that using either active transit or public transit has health benefits<sup>3,4</sup> unlike driving which is associated with negative health effects<sup>5</sup>.
- There is a gap in the literature in understanding how a person's commute mode affects their workplace arrival alertness.

## Methods

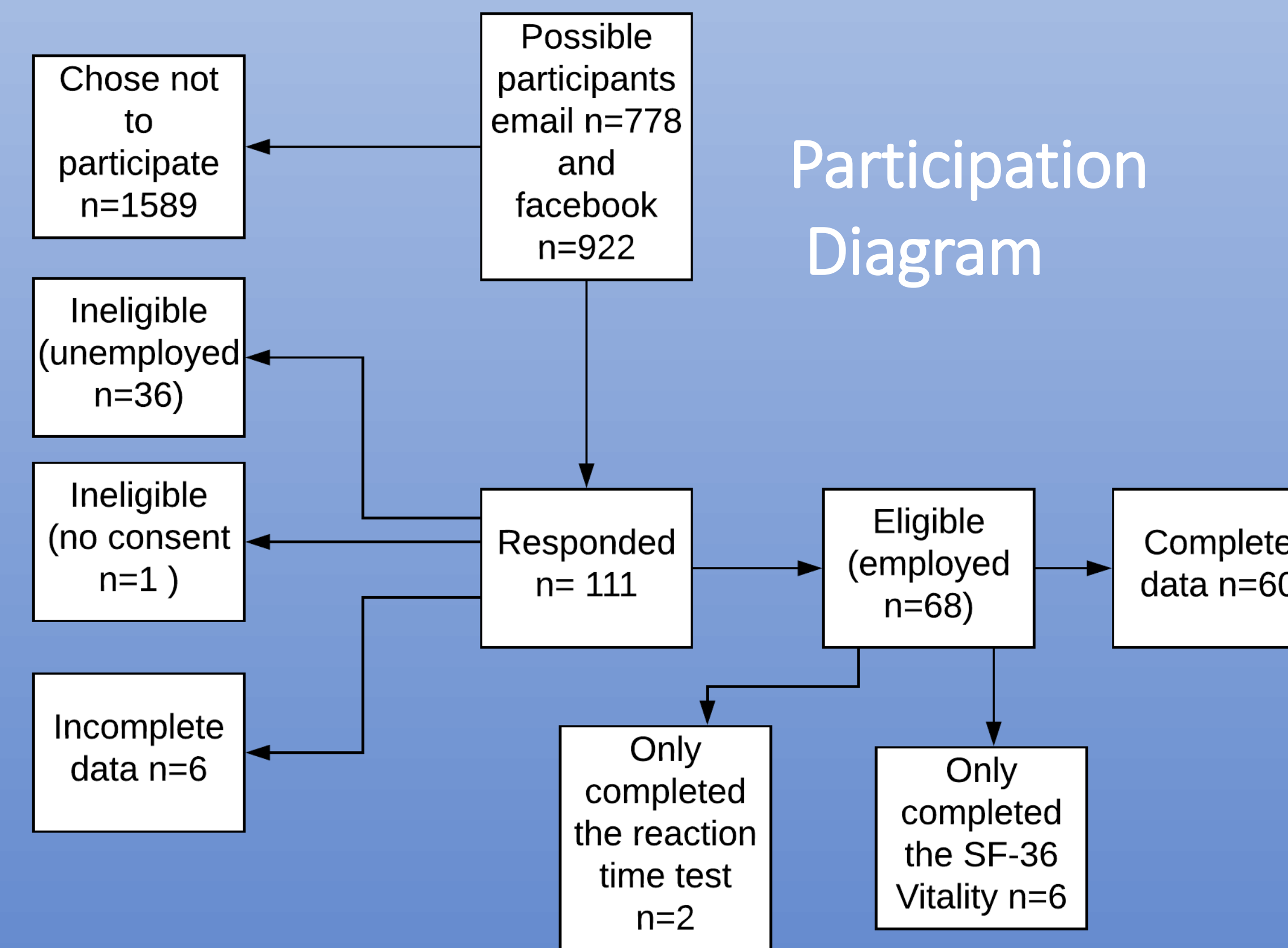
### Participants and Recruitment

- Participants in this study included 111 Ryerson University students from the School of Occupation and Public Health who were recruited using email and Facebook.
- 68 out of the 111 participants were eligible to complete the survey.
- The survey was open between January 26th, 2018 and February 20th, 2018.

### Design

- A 17 question survey was used to collect data and included a consent form.
- The survey was optimized to be completed by smartphone.
- The survey included questions regarding demographics, commute mode, average commute time, how long since they have arrived at work.
- The survey also included two tests of alertness, a reaction time test and the vitality portion of short form 36 by Rand.

## Results



Variable	Frequency (%) or Mean ±SD
<b>Employment status</b>	
Full time	9(8.18)
Part time	65(59.09)
No job	36(32.72)
<b>Gender</b>	
Male	17(22.97)
Female	57(77.02)
<b>Age</b>	23.36 ±4.44
<b>Job Sector</b>	
Arts and Entertainment	3(4.12)
Health Care	4(5.48)
Educational Services	5(6.85)
Retail	28(38.36)
Food Service	13(17.81)
Other Services	20(27.4)
<b>Average Commute Time</b>	45.29±31.1
<b>Time Since Arrival at Work</b>	
15 minutes or less	31(44.29)
30 minutes	14(20)
1 hour or more	25(35.71)
<b>Commute Mode</b>	
Active Transit	6(8.7)
Public Transit	40(57.97)
Car transit	23(33.33)
<b>For Commute by Car...</b>	
<b>Type of Roadway</b>	
Mostly Highways	9(39.13)
Mostly City Streets	12(52.17)
Both Highways and City Streets Equally	2(8.7)
<b>For Commute by Public Transit...</b>	
Bus	8(20)
Subway	1(2.5)
Streetcar	0(0)
Train	0(0)
Multiple public transit types	31(77.5)
<b>For Active Transit....</b>	
Walking	3
Walking and Biking	1

## ANOVA Results

- The results for active transit vs. car vs. public transit and the short form 36 vitality portion were not statistically significant and the differences between group means as determined by one-way ANOVA (F ratio= 2.9251, p = 0.0610) not statistically significant.
- The results for active transit vs. car vs. public transit and the reaction time test were not statistically significant and the differences between group means as determined by one-way ANOVA (F ratio= 0.8261, p = 0.4427) not statistically significant.

## Discussion

- Participation in the survey was the highest on the day when the survey started (Friday Jan 26<sup>th</sup> 44 responses) where we sent a reminder (Tuesday Feb 6<sup>th</sup> 22 responses).
  - To improve survey responses there are specific days which garner a better response rate. According to a study<sup>6</sup> based on survey distribution timing, responses were more likely on Mondays, Tuesdays and Wednesdays. With a peak number of responses on Wednesdays.
- ~33% of the respondents were not eligible to complete the survey as there were not employed at the time of the survey.
  - Distribute the survey either during the Christmas break as there is an increase in seasonal contracts or during the summer.
  - According to Statscan<sup>7</sup> 59.1% of students have summer jobs.
- It was difficult to get the students to do the survey upon arrival to work and instead it was often completed 30 minutes (20%) or an hour after arrival (35.71%) to the workplace even though the survey was optimized for completion on a smart phone.

## Acknowledgements

- The study participants
- Ryerson's School of Occupational and Public Health
- Ryerson's School of Occupational and Public Health (SOPHe) Facebook group

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