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**Mining and Alcohol Consumption: New Evidence from Northern Canada**

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## Background

- Mines have been sources of wealth and economic development for thousands of years, but mineral output has drastically increased in the last 20 years.
- Mines can have both positive and negative effects on individuals living nearby, this includes:
  - Economic (Van der Ploeg., JEL 2011)
  - Environmental (Palmer et al., Science 2010)
  - Social (Phelan et al., Ecological Econ 2017)



Surface mine in Peru

## Objectives

- Estimate the effect the presence of a mine nearby has on the number of alcoholic drinks consumed by individuals living in Northern Canada

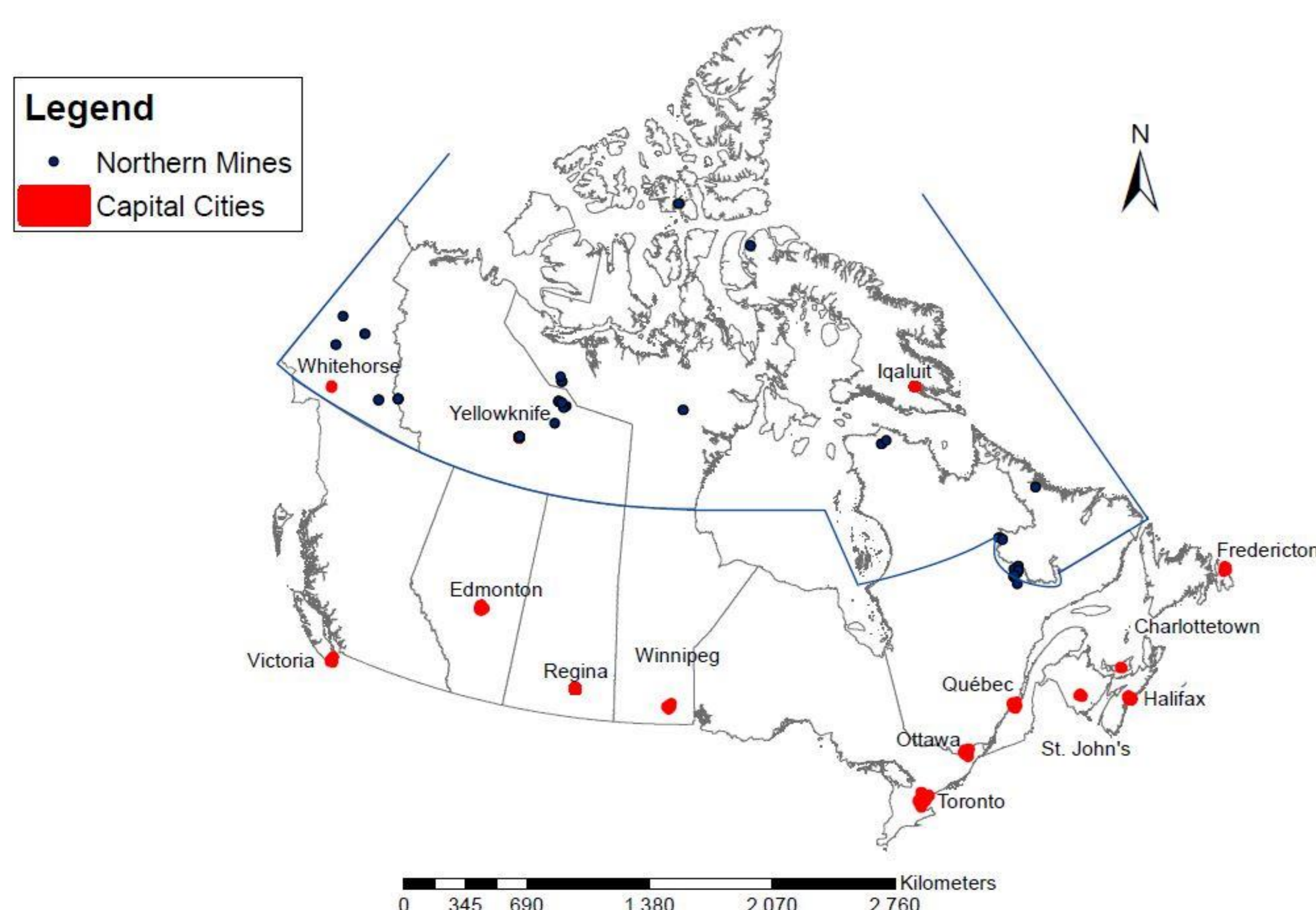
## From Mining to Alcohol

- Pathways through which mining may lead to increased alcohol consumption (Parkins et al., Community, Work and Family 2011):
  - Multiple divergent economic sectors
  - Transience
  - Shift Work
  - High Income

## Data

- Canadian Community Health Survey (2000-2012)
  - Large cross-sectional Statistics Canada micro-data file
  - Three surveys, over 380,000 respondents across Canada
- Natural Resources Canada GEOSCAN data for all producing mines in Northern Canada

### 2000-2012 Operating Mines in Northern Canada



## Model and Methods

- Calculated the Euclidean distance between the respondent's dwelling and all mines using Statistics Canada's Postal Code Conversion File and mine GPS points

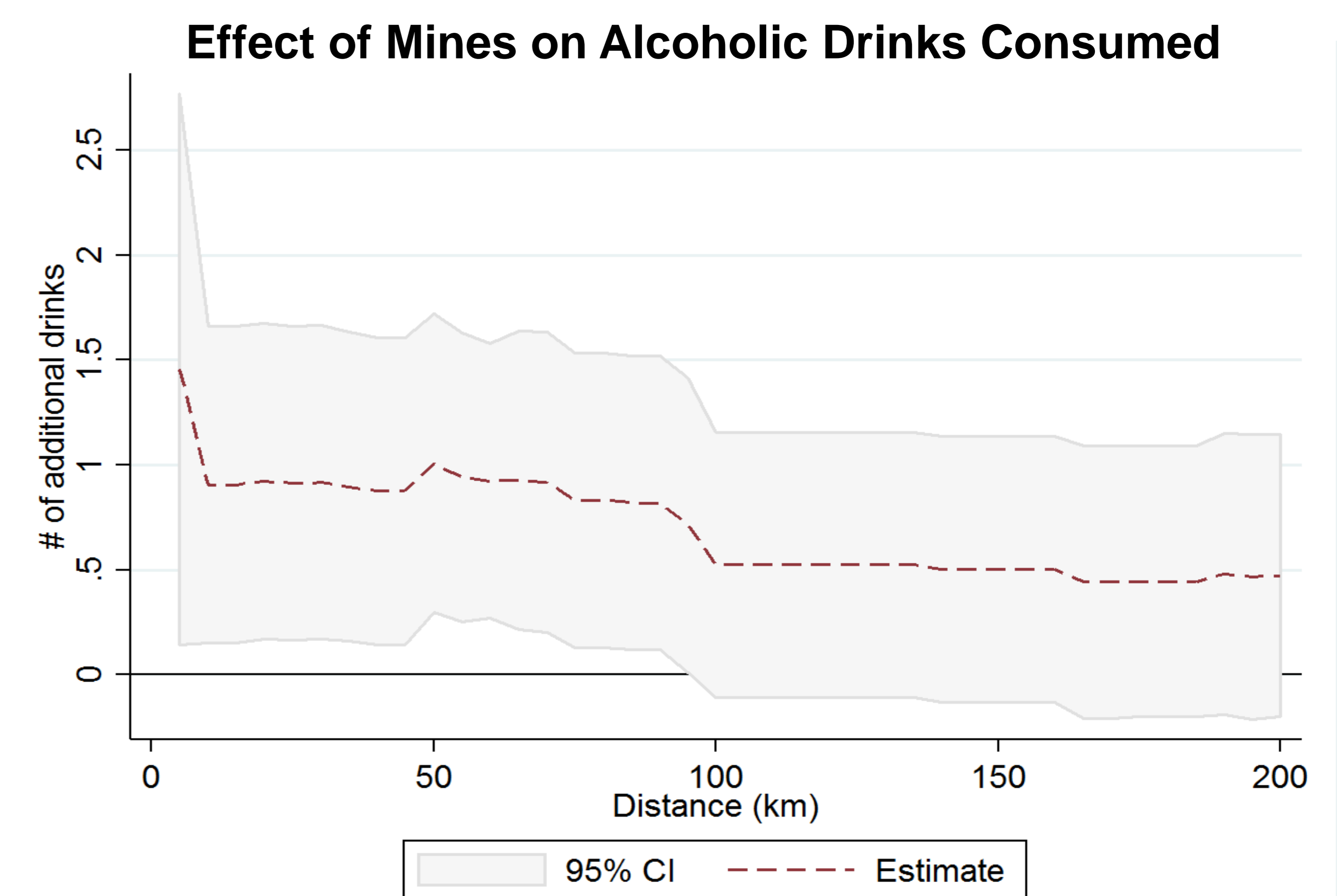


$$Y_i = \alpha + \beta M_i + X_i \Lambda + Z_i \Gamma + \gamma f(L_i) + \lambda_j + \mu_t + \epsilon_i$$

- $i$ : Respondent.  $j$ : Forward Sortation Area (FSA).  $t$ : Survey time period
- $Y$ : Number of alcoholic drinks in last week.  $M$ : Number of mines nearby.  $X$ : Socio-economic control variables.  $Z$ : FSA control variables.  $L$ : Latitude.  $\lambda$ : FSA fixed effects.  $\mu$ : Survey cycle fixed effects.

## Results

- Individuals living closest to a mine drink the most additional alcoholic drinks due to mining, with the effect decreasing as the distance to mines increases



### Regressors of Alcohol Consumption

	5 Km	10 Km	30 Km	50 Km	100 Km
Number of Mines	1.456**	0.906**	0.916**	1.007***	0.524
Age	0.174**	0.173**	0.174**	0.172**	0.175**
Age Squared	-0.003***	-0.003***	-0.003***	-0.003***	-0.003***
Married	-1.494***	-1.487***	-1.490***	-1.487***	-1.485***
Male	2.761***	2.762***	2.760***	2.765***	2.762***
White	1.677**	1.677**	1.674**	1.661**	1.708**
Number in Household	-0.233**	-0.233**	-0.232**	-0.228**	-0.249**
Aboriginal Ethnic Origin	1.484**	1.474**	1.469**	1.483**	1.467**
R Squared	0.096	0.096	0.096	0.097	0.095

N=3608, \*\*\* p < 0.01, \*\* p < 0.05, \* p < 0.1

## Discussion and Conclusions

- Mines are found to have a positive and significant effect on the number of alcoholic drinks consumed in Northern Canada, with individuals living closest affected the most
- Provides quantifiable empirical evidence of the relationship between mining and substance use

## References

- Van der Ploeg., 2011. Natural Resources: Curse or Blessing? *Journal of Economic Literature* 49, 366-420.
- Palmer, M., et al., 2010. Mountaintop mining consequences. *Science* 327 (5962), 148-149.
- Phelan, A., et al., 2017. Evaluation of Social Externalities in regional communities affected by coal seam gas projects: A case study from Southeast Queensland. *Ecological Economics* 131, 300-311.
- Parkins, J., Angell, A., 2011. Linking social structure, fragmentation, and substance abuse in a resource-based community. *Community, Work & Family* 14 (1).