DSCI 310: Historical Horse Population in Canada

Tiffany Timbers & Jordan Bourak

Contents

1 Aim

This project explores the historical population of horses in Canada between 1906 and 1972 for each province.

2 Data

Horse population data were sourced from the Government of Canada's Open Data website (Government of Canada 2017a, 2017b).

3 Methods

The R programming language (R Core Team 2019) and the following R packages were used to perform the analysis: knitr (Xie 2014), tidyverse (Wickham 2017), and bookdown (Xie 2016). *Note: this report is adapted from (Timbers 2020).*

4 Results

Suppose we were interested in looking in more closely at the province with the highest spread (in terms of standard deviation) of horse populations. We present the standard deviations here:

Note that we define standard deviation (of a sample) as

$$s = sqrt(sum_{i=1}^{n}(x_i - \bar{x})/(n-1))$$

Additionally, note that in Table 1 we consider the sample standard deviation of the number of horses during the same time span as Figure 1.

In Figure 2 we zoom in and look at the province of Saskatchewan, which had the largest spread of values in terms of standard deviation.

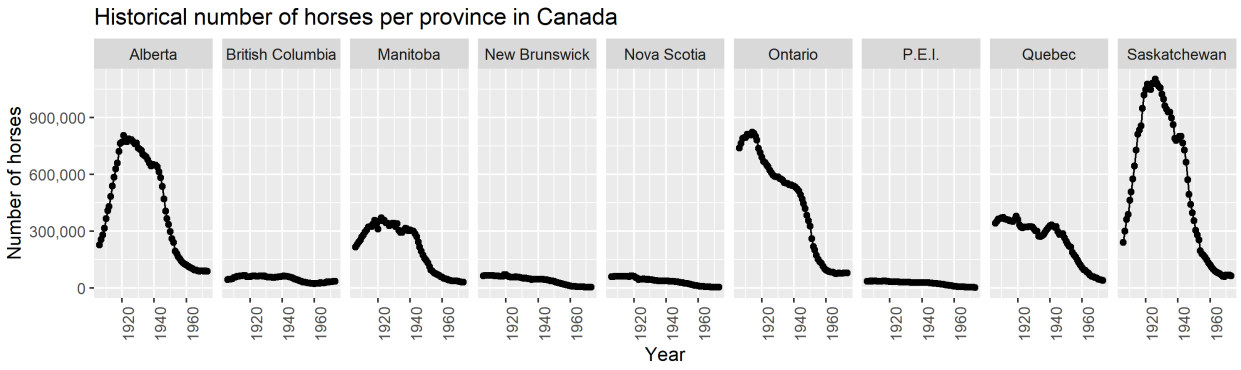

Figure 1: Horse populations for all provinces in Canada from 1906 - 1972

Table 1: Standard Deviation of the Number of Horses by Province

Province	Std
Saskatchewan	377265.58
Ontario	266435.32
Alberta	266063.19
Manitoba	122403.87
Quebec	111411.10
New Brunswick	22019.49
Nova Scotia	19879.25
British Columbia	14945.66
P.E.I.	11355.75

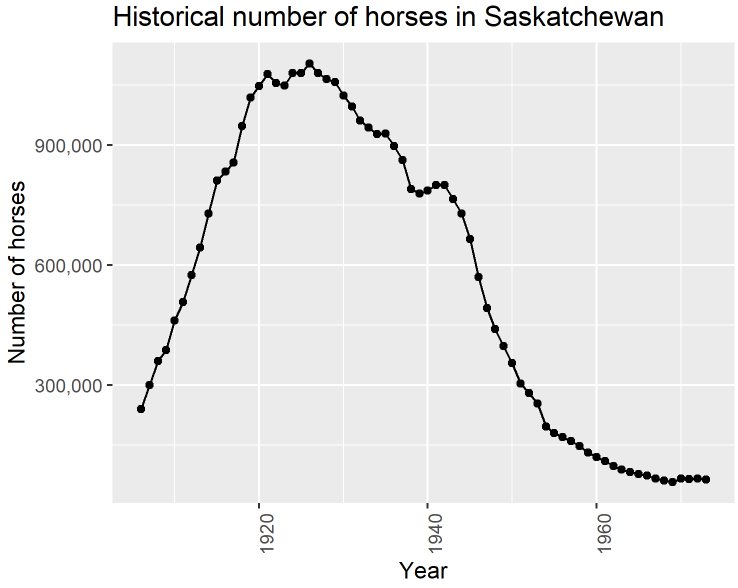

Figure 2: Horse populations for the province with the largest standard deviation

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