Assignment 02 - BUSI333/ECON345

Roll Number: SIASUG23-0232
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Question 01

(a)

Created a new column `ctgr` based on the `Pshr` column with the following categorization:

- **Food**: GRO, BAKER, FISH, FRUIT, PROV, PROD, CON, LIQ
- **Clothing**: CLO, B.S., DRYGOODS, HAT, MENFURN, MILLINER, TAILOR
- **Other Products**: All other values

(b)

Successfully created the `dist` column categorizing distances into three bands.

(c)

Successfully transformed the `treat_band` column.

(d)

Successfully calculated `mSole` and filtered out groups with n < 20.

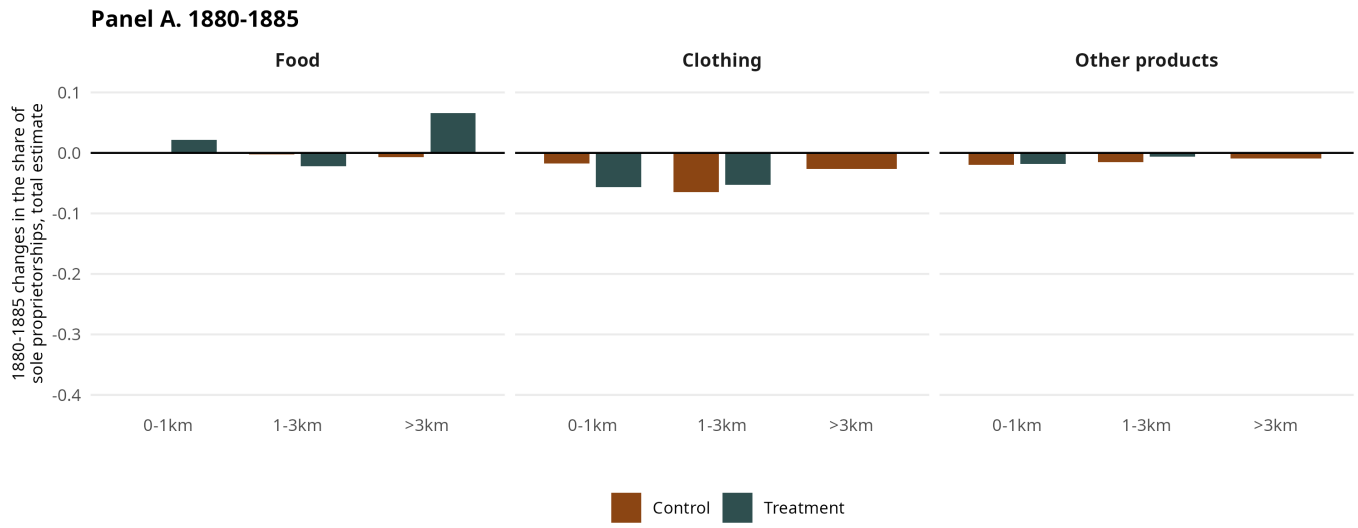
(e)

Successfully reshaped data and calculated `mSole_change = mSole_1885 - mSole_1880`.

(f)

Replicated Panel A of Figure 3 showing the 1880-1885 changes in the share of sole proprietorships across different distance bands and product categories.

Graph:



Claude Code Prompts

1. *"Help me create R code to read a .dta file and filter for specific years"*
2. *"Create a ggplot bar chart with facets by category and dodged bars for treatment groups"*
3. *"How to reshape data from long to wide format in R (something from tidyverse)*

Question 02 (30 Points)

Balance Table

Variable	Non-AI-Led Mean (SD)	AI-Led Mean (SD)	Difference	P-Value	Sig.
min_gpt_intermediate	0.176 (0.384)	0.143 (0.355)	-0.034	0.6594	
max_researcher	0.074 (0.263)	0.000 (0.000)	-0.074	0.0242	*
number_teammates	2.515 (0.586)	2.829 (0.568)	0.314	0.0105	*
max_professor	0.544 (0.502)	0.686 (0.471)	0.142	0.1619	
min_gpt_never	0.221 (0.418)	0.257 (0.443)	0.037	0.6875	

Claude Code Prompts (Question 02)

4. *"Create a balance table in R comparing treatment and control groups with means, standard deviations, and t-tests"*
5. *"How to randomly select variables from a list in R"*
6. *"Write R script to convert a balance table into an image. Make it aesthetic"*