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**Self Control or Social Control?
Peer Effects and Temptation Consumption**

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Self Control or Social Control? Peer Effects and Temptation Consumption

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Introduction

- Villagers in developing countries rely on social networks.
- Social interaction is critical to understand people's behaviors, such as technology adoption, health, usage of financial product. Existing literature often neglects the importance of social interaction.
- Myopic behaviors have implication on poverty trap and the accumulation of wealth.

Research Questions

- Are individual's temptation consumption behaviors affected by their peers.
- What is the mechanism of the peer effect

Contribution

- Incorporate **social interaction** in understanding self-control problems
- Empirically identify peer effects (using **real social relations**) in people's consumption behaviors

Data & Study Region

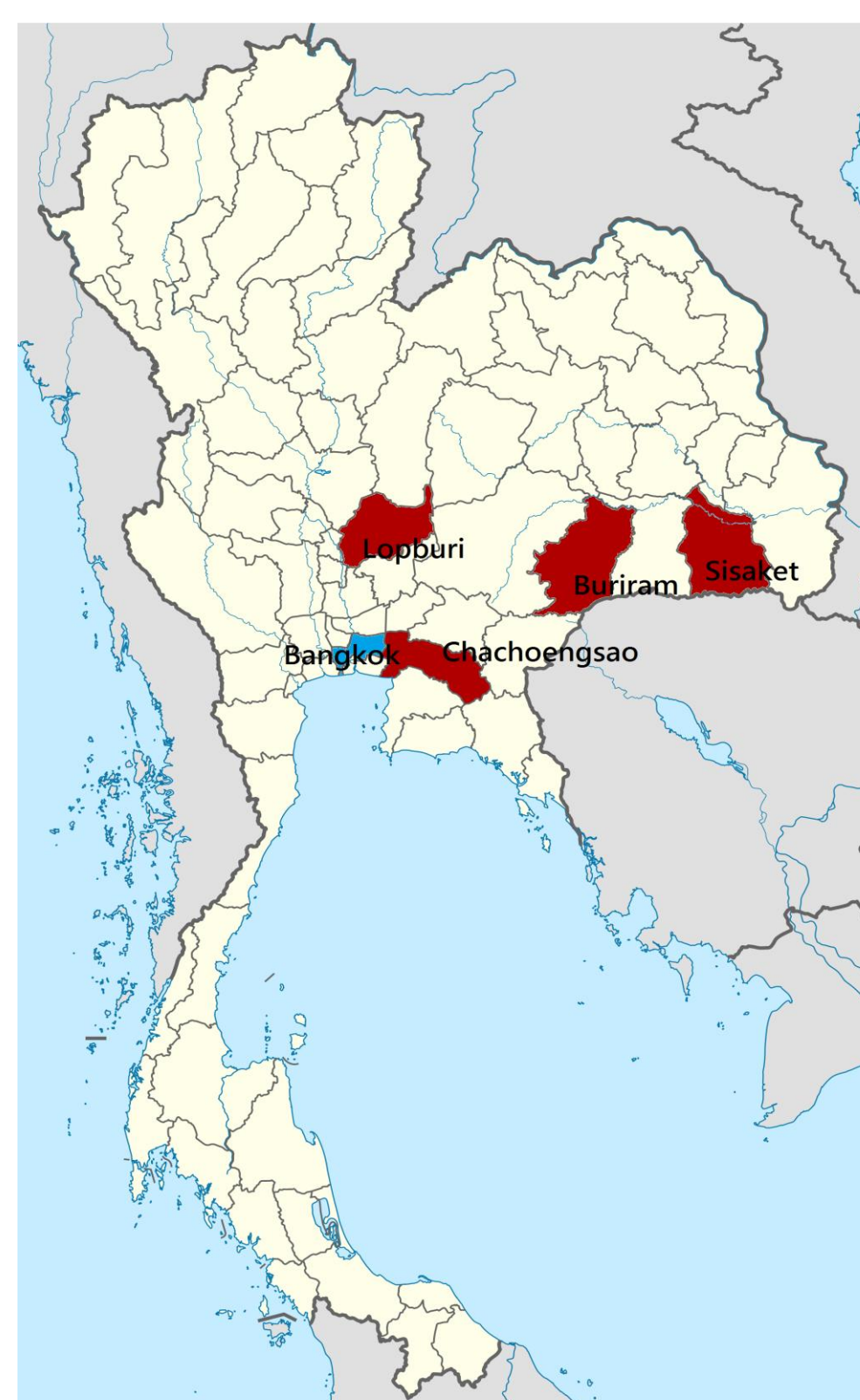
- Townsend Thai Monthly Survey from 1999 to 2004

- 480 households in 16 villages in Thailand

- Information includes basic demographics, social networks (financial, gift & exchange, labor-sharing)

- Temptation includes alcohol, tobacco, lottery and gambling

Figure: Map of surveyed regions in Thailand

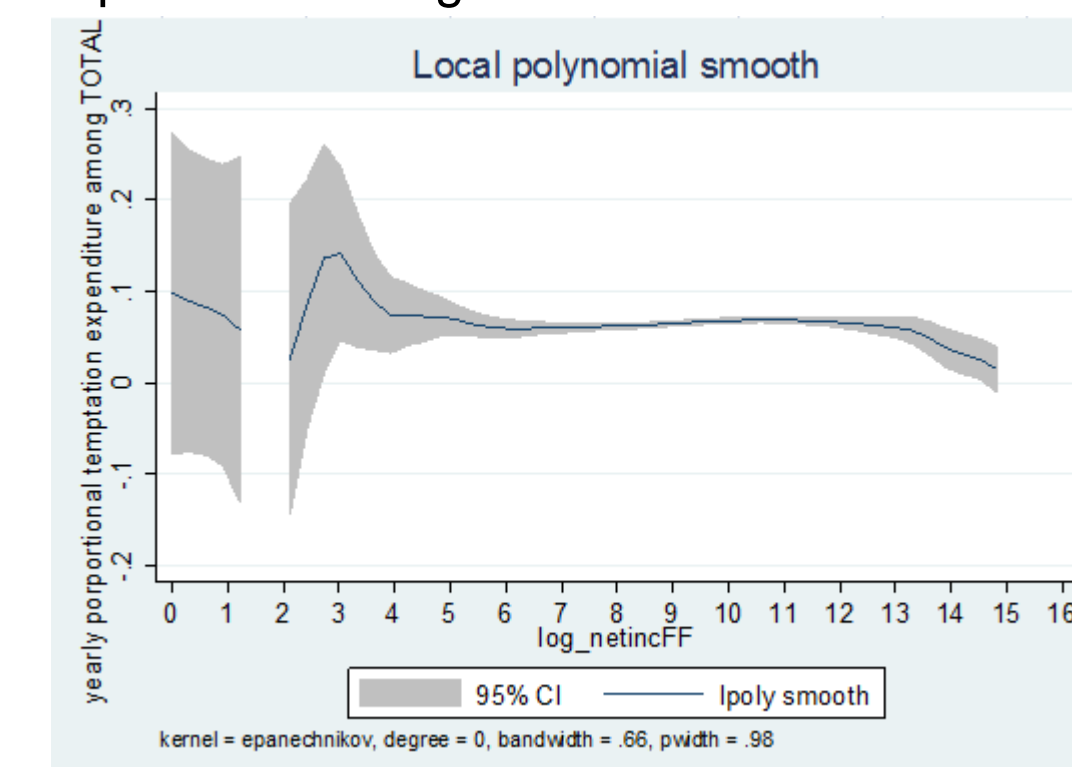


Theoretical Model

- Social-Norm:
 - Two-period model
 - Gain utility from consuming both non-temptation goods and temptation goods in the current period
 - Do not gain utility from consuming temptation goods in the future period; the previous self is subject to the disutility of tomorrow's temptation spending
 - Feel bad deviating from peers' temptation consumption
- Model predictions:
 - Increasing peers' temptation consumption leads to the **increase** of individuals' temptation consumption, but no effect on non-temptation consumption
 - Peer effect is stronger if consumption behavior is **more observable**
 - Individuals encountering negative income shock consume **more** when consumption is small; peers' income shock will do the same through conformity effect

Results

Table: Relation between Proportional Spending on Temptation and Log Income



- ✓ The poor spend proportionately more on temptation goods

Consumption Relationship between Own and Peer		
Dependent variable: household's consumption		
	temp	non-temp
Peer's temptation consumption	3.438*** (0.739)	
Peer's non-temptation consumption		1.785 (1.240)
Village-year fixed effect	Yes	Yes
Observations	24,424	24,424
F-stat of 1st Stage	1.733	1.733
Standard errors in parentheses		
*** p<0.01, ** p<0.05, * p<0.1		

- ✓ Own and peers' temptation consumption are highly correlated
- ✓ The effect still exists by adding peers' total consumption

Empirics

Main interest of estimation:

$$temp_{ivt} = \alpha_0 + \alpha_1 temp_{G_{ivt}} + \alpha_2 X_{G_i} + \alpha_3 X_i + f_{vt} + \varepsilon_{ivt}$$

Expect $\alpha_1 > 0$

There are potential problems of **reflection**, **correlated effect**, **simultaneity**.

Use **excluded peer** as IV to solve the endogeneity.

$$1^{st} \text{ stage: } temp_{G_{ivt}} = \beta_0 + \beta_1 Z_{K_{ivt-1}} + \beta_2 X_{ivt} + f_{vt} + \eta_{G_{ivt}}$$

$$2^{nd} \text{ stage: } temp_{ivt} = \delta_0 + \delta_1 temp_{G_{ivt}} + \delta_2 X_{ivt} + f_{vt} + \varsigma_{G_{ivt}}$$

$temp_{ivt}$: Average temptation consumption of household i

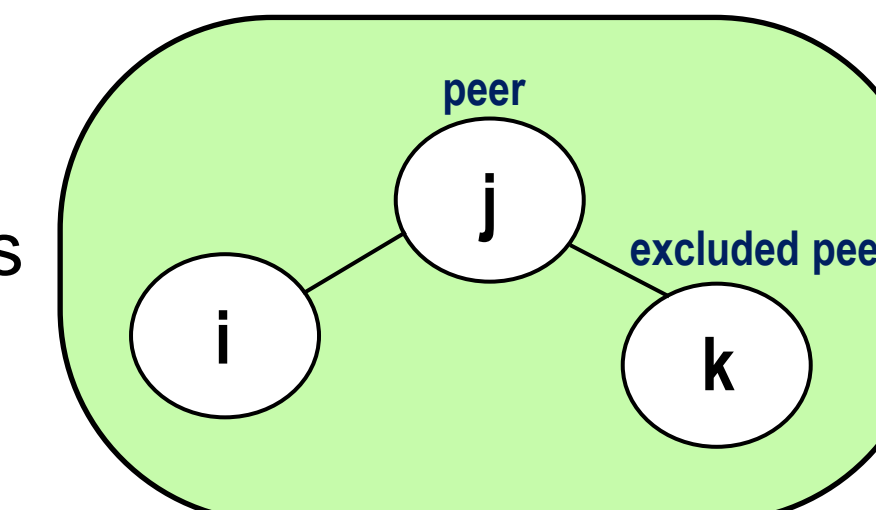
$temp_{G_{ivt}}$: Average temptation consumption of household i 's peer group G_i net of i 's spending

$Z_{K_{ivt-1}}$: Average temptation consumption of individual i 's excluded peer group K_i in village v at time $t-1$

X_{G_i} : Network characteristics

X_i : Household characteristics

f_{vt} : Village year fixed effect

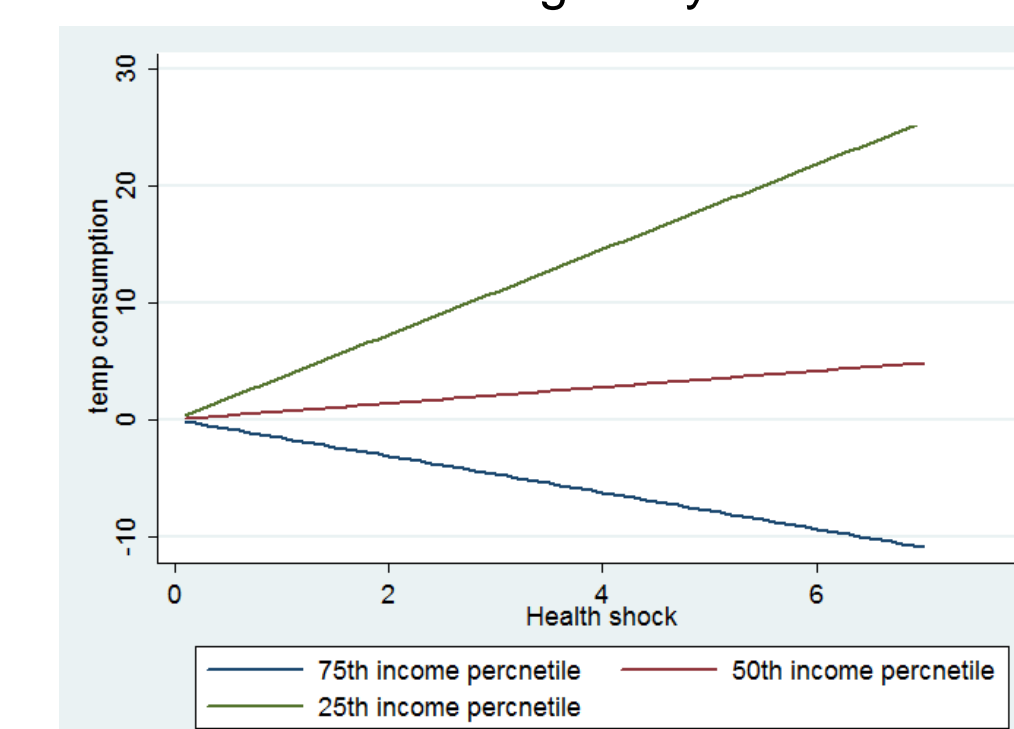


Results

Alcohol Consumption at Home and Outside				
Dependent variable: household's alcohol consumption				
	at home	outside	at home	outside
Peer's alcohol consumption at home	0.752 (0.459)		1.117 (0.915)	
Peer's alcohol consumption outside		3.719*** (0.582)		3.178*** (0.792)
Peer's total consumption			-0.00271 (0.0347)	0.00598 (0.0199)
Village-year fixed effect	Yes	Yes	Yes	Yes
Observations	24,424	24,424	24,424	24,424
F-stat of 1st Stage	18.85	52.32	1.452	1.458
Standard errors in parentheses				
*** p<0.01, ** p<0.05, * p<0.1				

- ✓ Peer effect is stronger for alcohol consumption outside

Table: Income Heterogeneity of Shock Effect



- ✓ Income shock has positive effect on temptation consumption, especially among the poor

Conclusion

- The poor spend **proportionately more** on temptation goods; yearly temptation spending is equivalent to yearly education spending
- People's temptation consumption is affected by their peers
- This peer effect is through the mechanism of **social norm**, rather than risk-sharing
- Peer effect is much stronger in **temptation consumption**, than non-temptation consumption
- The effect is stronger among **more observable consumption**
- Income shock leads to the **increase of individual's temptation consumption** among the poor
- Peers' income shock can also affect individual's temptation consumption through myopic decision-making

Robustness Check

- Sampled network can create bias
 - Robust using 50 percent of the sample
- What if people's consumption have complementarity
 - Robust excluding alcohol consumption
 - Robust using only lottery consumption
 - Instrument is at time $t-1$
- Controlling for group-level characteristics
- Using temptation consumption at t as the instrument
- Using log consumption to examine peer effects
- Controlling for seasonal effect

Further Information

Please contact ychuang5@wisc.edu for more information. The results are preliminary, please do not cite without permission. Any comment is highly appreciated.