

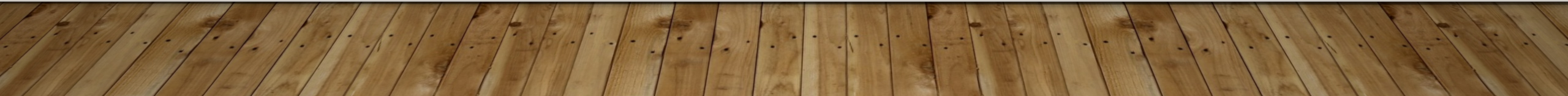


WHY HAVE THE CHINESE BECOME MORE TOLERATE ON PUPPY LOVE SINCE LATE 2000S: A FUNCTIONAL ANALYSIS

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RESEARCH QUESTION: INTRODUCTION

- The Chinese Definition of puppy love: 早恋 (zao lian, early love), most commonly refer to dating and having a love relationship before college
- Puppy love has been a taboo from 1950s to early 2000s
- However, there has been an increasing tolerance on puppy love since late 2000s
- Why are Chinese people changing their opinion?



RESEARCH QUESTION: PAST LITERATURE

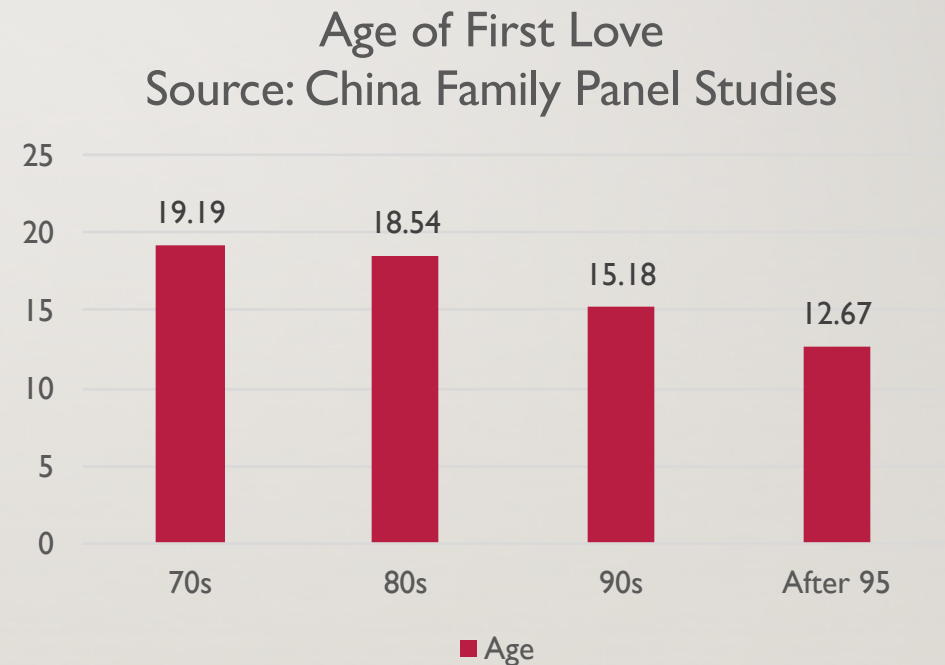
- Shen, Y. (2015). Too young to date! The origins of zaolian (early love) as a social problem in 20th-century China. *History Of Science*, 53(1), 86.
 - Provided structural explanation for this taboo in 20th century
 - Purpose: to prevent early marriage, early birth and school drop-outs
 - Qualitative analysis on political documents
- Wang, J. (2013, August 31). Puppy love no longer taboo [Electronic version]. *Shanghai Daily*
 - Gave cultural explanations on the change: many parents themselves experienced puppy love and controlling parents, and therefore are more understanding

RESEARCH QUESTION: THIS PROJECT

- Will provide functional and structural explanation on the recent change in attitude towards puppy love
- Will use computational methods and quantitative analysis

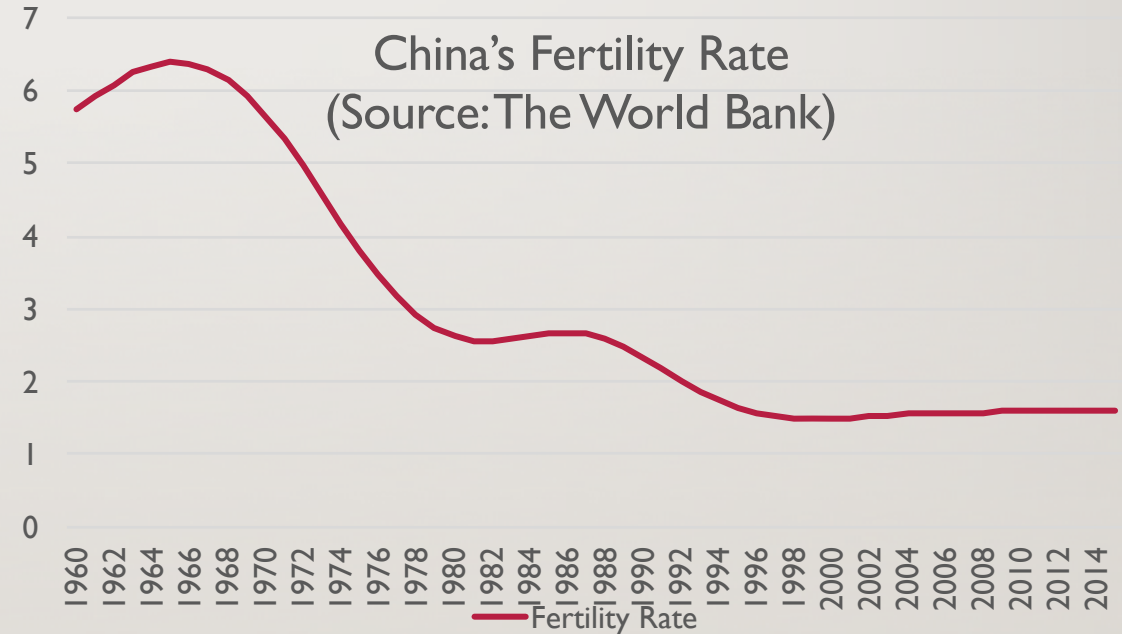
DATA USED

- Love relationships and marital status statistics from China Family Panel Studies (PKU and i.baihe.com, 2015)
- Movie and TV series data from Douban
- Chinese Fertility rate and marriage rate statistics from the World Bank
- Study abroad statistics: National Bureau of Statistics of China



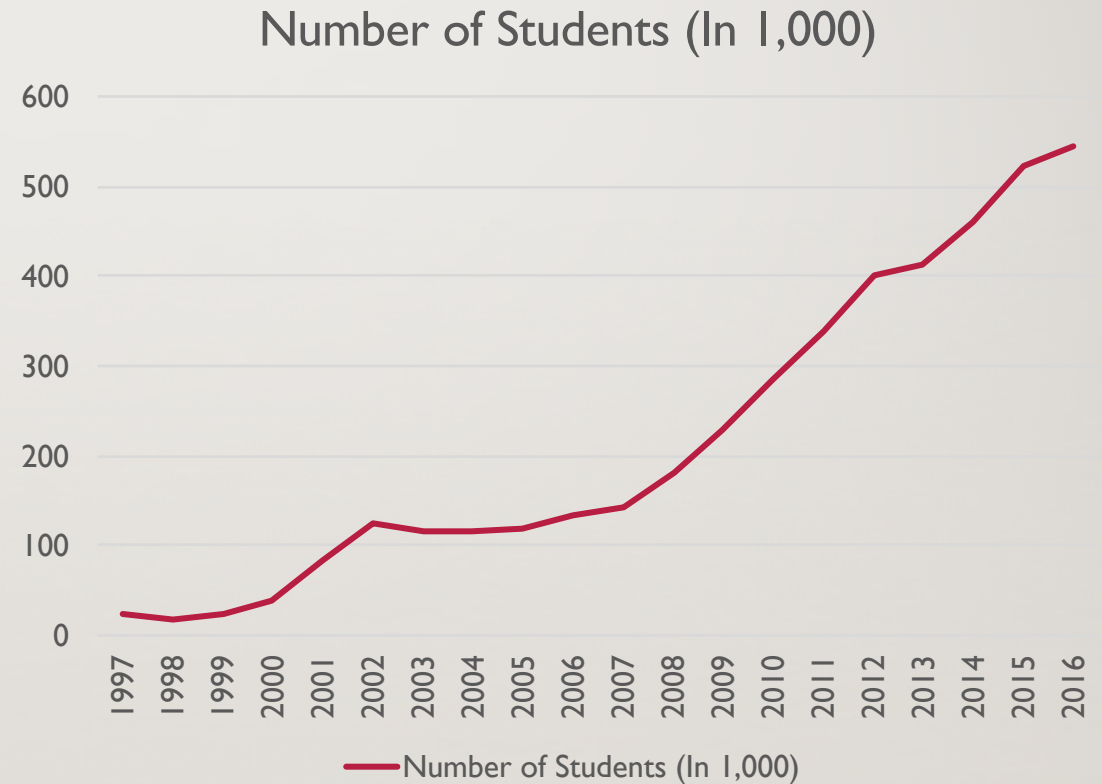
DATA USED: FERTILITY RATE

- Plunging fertility rate since 1990
- One Child Policy became effective in 1980s not 90s
- little change even after the “second child policy”



DATA USED: NUMBER OF STUDENTS STUDYING ABROAD

- Form of education is diversifying
- College Entrance Exam (Gaokao) is no longer the only way to higher education
- Score is no longer the one and only standard for “good student”



METHODS AND TOOLS

- Web crawling: fetching TV series data from Douban
 - Tool: BeautifulSoup in Python
- Digital Survey on first love age, opinions on marriage, and childbirth
- Time Series Analysis: constructing VAR models with exogenous variables and conduct Granger Causality test
 - Tool: R studio

THEORIES USED:

- VAR model with exogenous variables (Christopher Sims, 1980):
 - A multivariate time series process that includes both exogenous and endogenous variables
 - $Y(t) = \sum_{j=1}^p A_{11,j}X(t-j) + \sum_{j=1}^p A_{12,j}Y(t-j) + E_1(t)$
- Granger Causality:
 - “If a signal X_1 “Granger causes” a signal X_2 , then past values of X_1 should contain information that helps predict X_2 above and beyond the information contained in past values of X_2 alone” (Anil Seth, 2007). Theory developed by Clive Granger in 1960s.
 - $X_1(t) = \sum_{j=1}^p A_{11,j}X_1(t-j) + \sum_{j=1}^p A_{12,j}X_2(t-j) + E_1(t)$
 - $X_2(t) = \sum_{j=1}^p A_{21,j}X_1(t-j) + \sum_{j=1}^p A_{22,j}X_2(t-j) + E_2(t)$

HYPOTHETICAL RESULT

- The number of TV series that have puppy love contents is increasing
- The declining fertility rate and marriage rate, and the increasing number of students studying abroad granger cause the increasing tolerance of puppy love in China