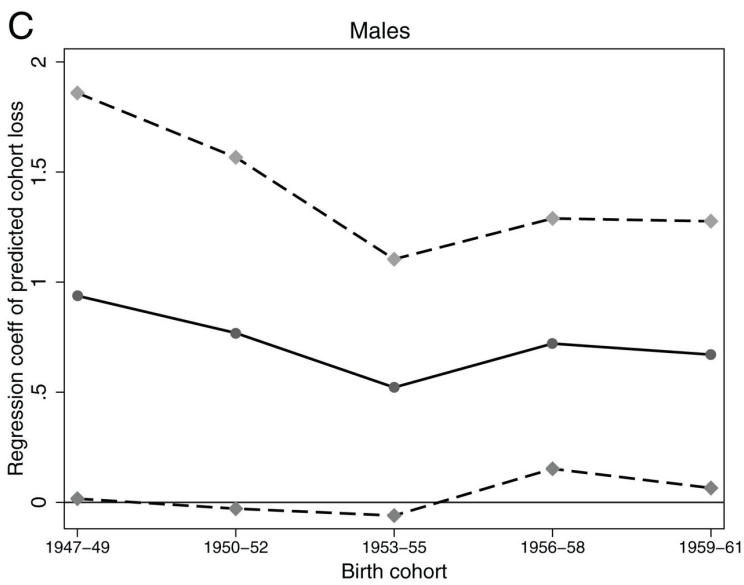
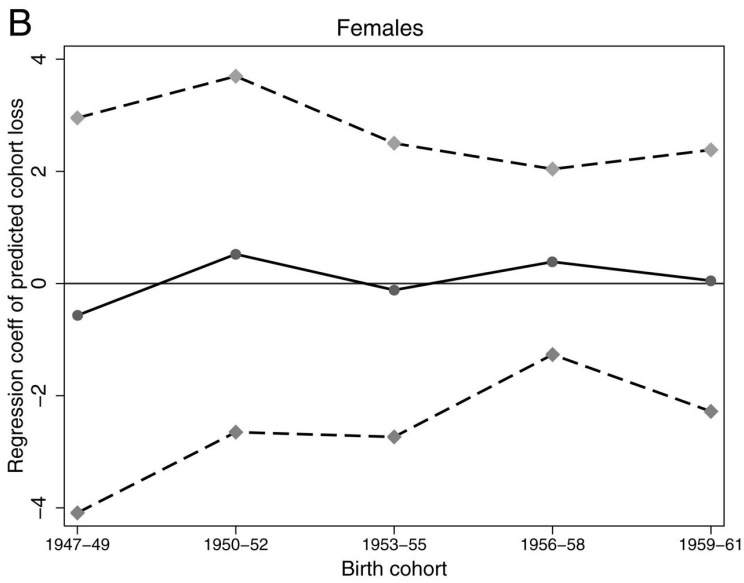
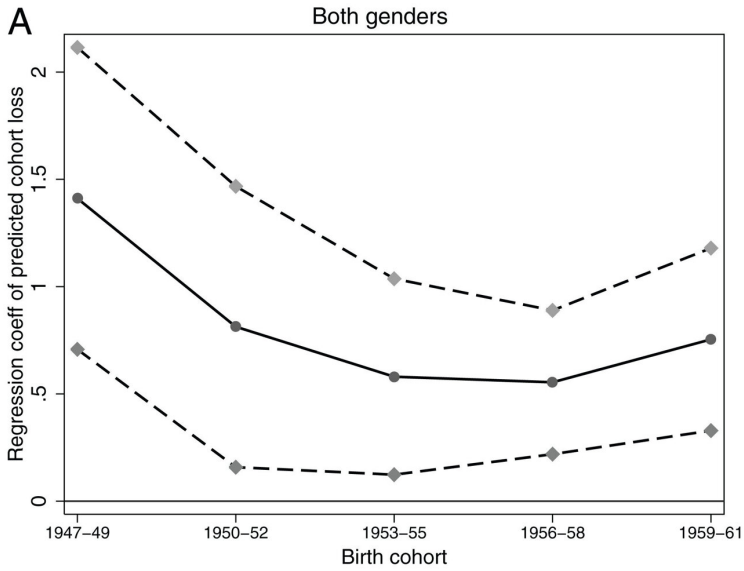


# **Study: Hardship early in life increases entrepreneurship in adulthood**

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Operant conditioning. The figure depicts the estimated coefficients of predicted cohort loss in regressions of county-level entrepreneurship on predicted cohort loss and other controls by birth cohort and 95% CIs. The sample includes persons enumerated by the 2005 Mini-Census born before 1962 who lived in the county of their hukou registration for 5 or more years. The dependent variable is the logarithm of the number of entrepreneurs in each birth cohort in the county. The coefficient of predicted cohort loss represents the effect of hardship during the famine on the logarithm of the actual number of entrepreneurs in the cohort in the county in the year 2005. (A) Both genders. (B) Females. (C) Males.

Credit: *Proceedings of the National Academy of Sciences* (2022). DOI: 10.1073/pnas.2104033119

Hardship experienced in one's younger days is never pleasant, but a new study found that hardship can make one more entrepreneurial in adulthood. However, this effect is more significant for men than for women. The research also has economic policy implications, highlighting how early life experience shapes risk tolerance and socioeconomic outcomes in adulthood.

The study was jointly conducted by Distinguished Professor Ivan Png and Associate Professor Chu Junhong, both from the National University of Singapore (NUS) Business School, and Professor Yi Junjian from Peking University's National School of Development. They published their findings in the journal *Proceedings of the National Academy of Sciences (PNAS)* on 5 April.

"There is a long-standing debate on whether entrepreneurship is due to nature or nurture, in particular, whether and how hardship makes one more entrepreneurial," said Prof Ivan Png, who teaches Strategy & Policy at the NUS Business School as well as Economics at the NUS

Faculty of Arts and Social Sciences. "It could be that hardship makes people more entrepreneurial or that only those who were entrepreneurial survived the hardship. Our study adds to that debate by investigating which mechanism was at play because it would lead to different policy and managerial implications. We also wanted to find out if the mechanism affected men and women differently."

The challenge with establishing a causal relationship between hardship and entrepreneurship was that researchers could not run social experiments that randomly assign people to different degrees of hardship and track their behavior over their life course.

The research team overcame this challenge by using the Great Famine, which occurred in China between 1959 and 1961, as a measure of hardship. The famine arose from the government's decision to gear agricultural resources from the rural areas towards the manufacturing and export sectors in the urban cities. Random weather fluctuations could cause agricultural production to fall short, and when food redistribution failed, counties across China experienced substantially different levels of food shortages and varying degrees of hardship.

The research team then looked at data from the China 2005 mini-Census for respondents' entrepreneurship status and the 2013 China Household Finance Survey (CHFS) for respondents' self-reported risk attitudes. Specifically, they looked at respondents who were born before 1962 and lived in their county of hukou (the national household registration system) for five or more years. There were about 729,000 and 12,000 such respondents in the mini-Census and CHFS, respectively.

## **Hardship makes people more entrepreneurial**

The figures showed that in counties where the famine was more severe, the absolute number of people who became entrepreneurs in their

adulthood increased. Specifically, everything else being equal, if a county's famine intensity was one standard deviation more severe, there would be 10 percent more entrepreneurs in the county.

Assoc Prof Chu Junhong from NUS' Department of Marketing explained, "This showed that the increase in entrepreneurship was due at least in part to hardship conditioning, because if it were simply that those who were less entrepreneurial did not live to adulthood, then the proportion of entrepreneurs in a county would increase, but the absolute number of entrepreneurs would remain unchanged."

She laid out the policy implications. "If hardship makes one more entrepreneurial, that rationalizes the "School of Hard Knocks" and the promotion of entrepreneurship as a pathway for less developed countries. Further, in the wake of economic recessions or natural disasters, policymakers should support new businesses to restore economic growth."

## **Both genders became more risk-tolerant, but more men owned a business**

The researchers found that hardship made both men and women more risk-tolerant, but greater [risk tolerance](#) was associated with more men, but not women, owning a business. Overall, men were more likely to engage in entrepreneurship than women: 4.9 percent of men and only 1.9 percent of women owned businesses or were self-employed.

However, when the famine grew more severe, the likelihood of female and male entrepreneurship would grow by 17.1 percent and 12.7 percent respectively.

Prof Yi Junjian from Peking University said, "The [gender differences](#)

could be because of a Chinese social norm—women focused more on domestic work while men focused on outside work. Also, when husbands chose riskier professions, wives would tend to choose relatively less risky jobs."

Prof Png said, "While we examined China's Great Famine in our study, the principle that hardship conditions people to be more risk-tolerant and take more risks, including starting a business later in their lives, applies generally. We could see more people who now experience the COVID-19 pandemic hardship become entrepreneurs in future."

Next, the researchers aim to quantify how much hardship conditions people to engage more in entrepreneurship and whether a change in the social norm on gender roles can encourage greater [entrepreneurship](#) among women.

**More information:** Junjian Yi et al, Early-life exposure to hardship increased risk tolerance and entrepreneurship in adulthood with gender differences, *Proceedings of the National Academy of Sciences* (2022).  
[DOI: 10.1073/pnas.2104033119](https://doi.org/10.1073/pnas.2104033119)

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