

Xian Zhang, MAE

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Education

- M.A. in Economics Duke University (Durham, NC, USA), 2019
Courses: PhD-level Econometrics, micro-econometrics, field course: economics in discrimination and inequality, field course: sensitivity and robustness in econometrics
Award: M.A. Merit Scholar Award
- B.M. in Corporate Finance Shanghai University of International Business and Economics (Shanghai, China), 2017
Award: Second Prize Scholar Awards (Ranking 10%) for the 2013-2014 and 2014-2015 Academic Years, Third Prize Scholar Award for the 2015-2016 Academic Year

Professional Experience

- 2024.12-present **Research Fellow (Visiting)**
National School of Development and Institute for Global Health and Development, Peking University, Beijing, China
- Studying medical students' career choices using the China Medical Students Survey (CMSS).
- 2021.07 – 2024.10 **Research Fellow (Full-time)** (Supervisor: Prof. Lijing Yan lijing.yan@duke.edu)
Global Health Research Center, Duke Kunshan University, Suzhou, China
- 2019.11 – 2021.06 **Consultant (Contract)** (Supervisor: Economist Sven Neelsen sneelsen@worldbank.org)
The Universal Health Coverage, The World Bank Group, Washington D.C., USA
- 2018.06 – 2019.08 **Research Assistant (Part-time)** (Supervisor: Prof. Marjorie McElroy mcelroy@econ.duke.edu)
Department of Economics, Duke University, Durham, NC, USA
- 2018.05 – 2019.01 **Research Assistant (Part-time)** (Supervisor: Estuardo Pineda estuardo.pineda@duke.edu)
Duke Center for International Development, Duke University, Durham, NC, USA

Key Publications (*first author, #corresponding author, +student's thesis mentored)

Published 9 peer-reviewed manuscripts, with 2 manuscripts currently under review.

Google Scholar Citations: 26; h-index: 4 (as of 2024.12)

Manuscripts Under Review:

1. Peng N*, **Zhang X**, Jiang L, Yao D, Gao P, Sun Y, Lin H, Wu J#, Liu G#, Lyu B#. Trends and Factors associated with Polypharmacy in Chinese Patients with Diabetes: A Retrospective Cohort Study. *Lancet Reg Health West Pac*.
2. **Zhang X***, Zhang X*, Li Z*, Fang Y, Dong W, Liu Z, Wu J#, Yan LL#. Synthetic difference-in-differences method in program evaluation: A case study of the National Integrated Demonstration Areas for Non-Communicable Disease Prevention and Management Program in China. *Epidemiology*.
3. **Zhang X***, Chen C, Shen P, Ji X, Yang B, Su K, Hu R, Zhou W, Liu L, Liu J, Jin X, Zhang B, Chen Y, Liu G, Fang H, Lin H, Sun Y#, Yan LL.# Cost-effectiveness Analysis of a Local Free Influenza Vaccination Program for Older Adults: Real-world Evidence based on 157,554 participants from

Selected Peer-Reviewed Publications

1. Dong W*, Zhang X*, Liu S*, **Zhang X**, Li Z, Gu M, Yang Y, Fang YE, Li H, Qian J, Zhang M, Wang L, Yan LL, Wu J. Effect of the national integrated demonstration area for the prevention and control of noncommunicable diseases programme on behavioural risk factors in China: A synthetic difference-in-differences study. *Lancet Reg Health West Pac*. 2024 Aug 9;50:101167. doi: 10.1016/j.lanwpc.2024.101167. PMID: 39219626; PMCID: PMC11363990
2. Chen X*, Zheng Y*, Wang K, **Zhang X**, Nakai K, Yan LL#. Resting heart rate and risk of dementia: a Mendelian randomization study in the international genomics of Alzheimer's Project and UK Biobank. *PeerJ*. 2024 Mar 15;12:e17073. doi: 10.7717/peerj.17073. PMID: 38500529; PMCID: PMC10946385.
3. Sun Y*, **Zhang X***, Shen P, Ye L, Yan LL#, Lin H#. [Effectiveness of free influenza vaccination among elderly people ≥ 70 years of age in Yinzhou district of Ningbo city: A real-world retrospective cohort study]. *Chinese Journal of Vaccines and Immunization*, 2023,29(03):253-260. DOI:10.19914/j.CJVI.2023043. (In Chinese)
4. **Zhang X***, Shen P*, Liu J, Ji X, Su K, Hu R, Chen C, Fang H, Jin X, Lin H, Sun Y#, Yan LL#. Evaluating the Effectiveness and Cost-effectiveness of Free Influenza Vaccination Policy for Older Adults in Yinzhou, China: Study Protocol of a Real-World Analysis. *Vaccine*. 2023 Jul 31;41(34):5045-5052. doi: 10.1016/j.vaccine.2023.06.087. Epub 2023 Jul 5. PMID: 37419850
5. Gu Q*, Zheng Q, Zhang X, Lin L, Li S, Chen F, **Zhang X+**, Yan LL, Chen W. Trends in Health Service Use for Dry Eye Disease From 2017 to 2021: A Real-World Analysis of 369,755 Outpatient Visits. *Transl Vis Sci Technol*. 2024 Jan 2;13(1):17. doi: 10.1167/tvst.13.1.17. PMID: 38236189; PMCID: PMC10807500.
6. Chen X*, Wu W, **Zhang X**, Long T, Zhu W, Hu R, Jin X, Yan LL#, Yao Y#. Mediation analysis of leisure activities on the association between cognitive function and mortality: A longitudinal study of 42,942 Chinese adults 65 years and older. *Epidemiol Health*. 2022;44:e2022112. doi: 10.4178/epih.e2022112. Epub 2022 Nov 27. PMID: 36470262; PMCID: PMC10106552
7. Xiong S*, Wang Z, Lee B, Guo Q, Peoples N, Jin X, Gong E, Li Y, Chen X, He Z, **Zhang X+**, Yan LL#. The association between self-rated health and all-cause mortality and explanatory factors in China's oldest-old population. *J Glob Health*. 2022 Jul 23;12:11005. doi: 10.7189/jogh.12.11005. PMID: 35866355; PMCID: PMC9305379.
8. Jin X*, Long T, Chen H, Zeng Y, **Zhang X**, Yan LL.# and Wu C#. Associations of Alcohol Dehydrogenase and Aldehyde Dehydrogenase Polymorphism with Cognitive Impairment Among the Oldest-Old in China. *Front. Aging Neurosci*. 13:710966. doi: 10.3389/fnagi.2021.710966
9. Jin X*, Xiong S, Yuan C, Gong E, **Zhang X**, Yao Y, Leng Y, Niu Z, Zeng Y# and Yan LL# Apolipoprotein E Genotype, Meat, Fish, and Egg Intake in Relation to Mortality Among Older Adults: A Longitudinal Analysis in China. *Front. Med*. 8:697389. doi: 10.3389/fmed.2021.697389

Selected Non-peer-reviewed publications (+student's thesis mentored)

1. **Zhang, X.**, 2025. Impact of the Coal-to-Clean Heating Policy on Cardiometabolic Multimorbidity and Clean Fuel Adoption in Older Chinese Adults. Accepted by IHEA 2025 Congress.
2. **Zhang, X.**, 2024. The Association between Leisure Activities and the Risk of Cardiometabolic Multimorbidity among Older Chinese Adults. Accepted by EPI | Lifestyle Scientific Sessions 2025.
3. Shen, J., Zhuge, J., Lin, J., Zhou, X., Ding, X., Zhou, H., Wang, Y., **Zhang, X.**+, Xu, X., and Yan, L. 2024. The Mediation Effect of Dietary Diversity on the Association between Oral Health and Cognitive Function among Chinese Older Adults. Abstract accepted by the 8th Global Public Health Conference 2025.
4. Zhou, X., Wang Y., Shen, J., Li, D., Ding, X., Zhou, H., **Zhang, X.**+, and Yan, L. The Mediating Role of Intrinsic Capacity in the Association Between Multimorbidity and All-cause Mortality among Chinese Older Adults. Accepted by the 8th Global Public Health Conference 2025.
5. **Zhang, X.** 2024. Estimating the Joint Effect of Household Solid Fuel Use and Ambient Dust Pollution on Hearing Loss Among Chinese Older Adults. Accepted by 2025 Asian Conference on Aging & Gerontology.
6. **Zhang, X.**, 2024. Long-Term Care Insurance Promoted the Diagnosis and Management of Hypertension in Older Adults. The International Conference/Training Workshop on

Projections/analyses of Households and Living Arrangements, and Applications in Healthy Aging and Sustainable Development Studies.

7. Zhang R, Ding X, Zhou H, **Zhang X.**+, He Z, and Yan L.L, 2024. Abstract P438: Combined Association of Body Mass Index and Central Obesity on Mortality Risk in Diabetes Population: The China Health and Retirement Longitudinal Study (CHARLS). *Circulation*, 149(Suppl 1), pp.AP438-AP438.
8. Zhou H, He Z, Ding X, Jie H, **Zhang X.**+, and Yan L.L, 2024. Abstract P260: Association of Hearing Impairment and Physical Functioning Among Chinese Adults Aged 60 Years or Older: Evidence from the China Health and Retirement Longitudinal Study (CHARLS). *Circulation*, 149(Suppl 1), pp.AP260-AP260.
9. Ding X, Su K, Guo Q, Xiong S, Li Y, Ling Y, He Z, **Zhang X.**+, and Yan L.L, 2023. Abstract P311: Lifestyle Factors Substantially Contributed to Urban-Rural Disparity in All-Cause Mortality Among Chinese Adults 65 or Older. *Circulation*, 147(Suppl 1), pp.AP311-AP311.
10. He Z, Zou S, Guo Q, Lee B, **Zhang X.**+, Li Y, Hu R, Ding X, Li C, Guo X, and Yan L.L, 2023. Abstract P303: Time-Varying Healthy Lifestyle Profile and All-Cause Mortality Among the Oldest-Old in China. *Circulation*, 147(Suppl 1), pp.AP303-AP303.
11. Asturias G, Cordon A, Pineda E, Figueroa A, **Zhang X.**, Proaño G, Jimenez E, Rohloff P. Mapping Nutrition Interventions in Guatemala to Identify Opportunities to Improve Coverage and Coordination, 18 October 2021, PREPRINT, available at Research Square [<https://doi.org/10.21203/rs.3.rs-957590/v1>]

Conference Presentations

1. IHEA 2025 Congress, Bali, Indonesia, 2025 (accepted, oral).
2. The Asian Conference on Aging & Gerontology (AGEN), Tokyo, Japan, 2025 (oral).
3. Epidemiology and Prevention | Lifestyle and Cardiometabolic Health, Louisiana, USA, 2025 (poster).
2. ISPOR Europe, Barcelona, Spain, 2024 (poster).
3. International Conference on Household Projections and Healthy Aging, Beijing, China, 2024 (oral).
4. The 5th China Healthy Economy Development Forum, online, 2022 (oral, First Prize).

Work in progress

1. **Gossip Cue: The Impact of Community-Level Rabies Exposure on Influenza Vaccination Among Older Adults**
with Yuyu Chen, Lijing L. Yan, Yang Yue, Meilan Zhang
We analyzed how rabies exposure events influence influenza vaccination uptake among older adults in Yinzhou, China. Vaccination rates increased significantly in weeks 3, 5, and 6 post-exposure. Using dog ownership restrictions as an instrumental variable, we established causality, offering insights into peer effects on vaccination behavior. These findings prove the gossip cue as a mechanism-based explanation for peer effects on vaccination behavior.
2. **The Impact of Long-Term Care Insurance on Hypertension and Dementia Misreporting: Evidence of Moral Hazard in China**
This study examines how China's long-term care insurance (LTCI) reforms incentivized older adults to misreport hypertension without high blood pressure and dementia without a low Mini-Mental State Examination score. Using PSM-DID and longitudinal data, findings highlight moral hazard behaviors, suggesting policy adjustments are needed to improve LTCI efficiency.
3. **The Association Between Cognitive Impairment and Intensive Procedures in End-of-Life Medical Spending: Evidence from Health Administrative Data** (Supervised by Prof. Ming Gu):
Using health records from Yinzhou, we matched individuals with cognitive impairment to non-impaired peers. Results showed higher utilization of intensive procedures among those with cognitive impairment, emphasizing its role in end-of-life healthcare decisions.
4. **Estimating the Joint Effect of Household Solid Fuel Use and Ambient Dust Pollution on Hearing Loss** (accepted by AGen2025)

Using CLHLS data (2011–2018), I found that solid fuel use and high ambient dust pollution independently increased hearing loss risk among older adults. Joint exposure had the highest risk, emphasizing the need for cleaner energy and pollutant reduction.

Skills Summary

Programming Skills: STATA, R, ArcGIS, Python, SQL(dbvisualizer), Quartrics, Zotero, LaTeX

Experimental Skills: Data analyses, Causal Inference, Empirical Application of Econometrics Model, Academic Writing, Literature Review, Fund Application