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Education & Occupation

DPhil(PhD)	School of Geography and the Environment, University of Oxford	10/2016-09/2024
Thesis: Air pollution, mobility and subjective wellbeing in transitional China: toward socially sustainable cities		
Supervisor: Prof Tim Schwanen Prof Christian Brand		
Researcher	China-Britain Artificial Intelligence Association (CBAIA)	08/2018-
Researcher	Polygeia (Global Health Think Tank)	03/2018-
Research Assistant	Blavatnik School of Government, University of Oxford	10/2018-09/2019
Research Assistant	Center for Smart Cities Research and Planning, Peking University	07/2014-09/2015
M.S	Dept. of Urban and Environmental Sciences, Peking University	09/2011-07/2014
Specialty: Human Geography		
Supervisor: Prof Yanwei Chai		
B.S	Dept. of Urban and Environmental Sciences, Central China Normal University	09/2007-07/2011
Specialty: Geography (Major)		
B.A	Dept. of Economics and Management, Wuhan University	09/2008-07/2011
Specialty: Economics (Minor)		
Visiting Fellowship:	Urban Research Program, Griffith University	02/2013-04/2013

Research Interests

Mobility and Environmental Exposure
Mobility, Wellbeing and Health
Climate-Neutral Mobility
Just and Sustainable Urban Future
Spatial Analysis of Socio-Environmental Inequalities

Under Review/Revision

- [1] **Guo, W.**, Brand, C., Chai, Y., & Schwanen, T. Exploring the impact of individuals' whole-day travel-activity patterns on air pollution exposure. *Urban Climate Under review* **SCI Q1 Impact Factor: 6.80**
- [2] **Guo, W.**, Schwanen, T., & Chai, Y. The impact of real-time and perceived air pollution exposure on episode-level subjective wellbeing: the case study of a suburban community in Beijing. *Health & Place Minor revision (due date: 8 August)* **SCI & SSCI Q1 Top Impact Factor: 4.80**
- [3] **Guo, W.**, Schwanen, T., Brand, C., & Chai, Y. Bridging the daily mobility-related short-term actual and perceived air pollution exposure to mental health and life satisfaction evaluation. *Journal of Transport Geography Under review Minor revision (due date: 28 July)* **SCI & SSCI Q1 Top Impact Factor: 6.10**
- [4] Zhao, X., Papaixb, C., Cao M., **Guo, W.**, Ieromonachoub P. Can our journey to work change the way we feel? Investigating the links between commuting satisfaction, travel-related feelings, and life evaluation. *Travel Behaviour & Society Minor revision* **SCI Q1 Impact Factor: 5.20**

Publications

- [1] **Guo, W.**, He, J., & Yang W. (2024) Exploring the association between jogging behaviour and air pollution exposure using massive GPS trajectory data: a case study of Beijing. *Science of the Total Environment*, 174759.

SCI & SSCI Q1 Top Impact Factor: 10.75

[2] Yang, W., Chen, H., Li, J., **Guo, W.**, Fei, J., Li, Y., & He, J. (2024). How does visual environment affect outdoor jogging behavior? Insights from large-scale city images and GPS trajectories. *Urban Forestry & Urban Greening*, 128291. **SCI & SSCI Q1 Top Impact Factor: 6.40**

[3] Zhao, X., Lyu, N., Cao, M., **Guo, W.**, & Wang R. (2024). Design and implementation of the Beijing Road Traffic Environmental Monitoring Information Platform: A stakeholder's perspective. *Journal of Chinese Architecture and Urbanism*, 1(1): 2283

[4] Yang W., Hu J., Liu Y., & **Guo, W.** (2023) Examining the influence of neighborhood and street-level built environment on fitness jogging in Chengdu, China: a massive GPS trajectory data analysis[J]. *Journal of Transport Geography*, 108: 103575. **SCI & SSCI Q1 Top Impact Factor: 6.10**

[5] **Guo, W.**, Schwanen, T., Brand, C., et al. (2022) Evaluating rules for aggregating satisfaction with activity-travel episodes to a day-level satisfaction measure[J]. *Transport Findings*, (October).

[6] Ji, M., **Guo, W.**, Chen, Z., & Morgan, N. (2022). Managing tourist congestion: insights from Chinese package tours to the UK and Ireland. *Current Issues in Tourism*, 1-20. **SSCI Q1 Top Impact Factor: 8.00**

[7] Zhao, X., Zhang, Z., **Guo, W.***, Zhou, Y., Cao, M., & Papaix, C. (2022). Evidence-based Smart Transition Strategies for Long-distance Commuters in Beijing. *Frontiers in Future Transportation*, 8. **SCI Q3 Impact Factor: 1.30**

[8] Xiao, Z., **Guo, W.# (Co-first author)**, Luo, Z., Liao, J., Wen, F., & Lin, Y. (2021). Examining geographical disparities in the incubation period of the COVID-19 infected cases in Shenzhen and Hefei, China. *Environmental health and preventive medicine*, 26(1), 1-10. **SCI & SSCI Q1 Impact Factor: 4.70**

[9] **Guo, W.**, Chai, Y., & Kwan, M. P. (2020). Travel-related exposure to air pollution and its socio-environmental inequalities: Evidence from a week-long GPS-based travel diary dataset. In *Spatiotemporal Analysis of Air Pollution and Its Application in Public Health* (pp. 293-309). Elsevier.

[10] Xiao, Z., Xie, X., **Guo, W.**, Luo, Z., Liao, J., Wen, F., ... & Zheng, T. (2020). Examining the incubation period distributions of COVID-19 on Chinese patients with different travel histories. *The Journal of Infection in Developing Countries*, 14(04), 323-327. **SCI Q3 Impact Factor: 1.90**

[11] Li, J., **Guo, W. # (Co-first author)**, Ran, J., Tang, R., Lin, H., Chen, X., ... & Tian, L. (2019). Five-year lung cancer mortality risk analysis and topography in Xuan Wei: a spatiotemporal correlation analysis. *BMC Public Health*, 19(1), 173. **SCI Q1 Top Impact Factor: 4.50**

[12] Reardon, L., Mahoney, L., & **Guo, W.** (2019). Applying a subjective well-being lens to transport equity. In *Measuring Transport Equity* (pp. 205-215). Elsevier.

[13] **Kwan, M-P.** The uncertain geographic context problem (UGCoP), (Translated by **Guo, W.**) *Forthcoming*, in *Principles and Application of GIScience*. Science Press: Beijing [in Chinese]

[14] He, S., Chai, Y. **Guo, W.**, Tan, Y. & Liu, B. (2019). A daily scale study on women's leisure satisfaction and its influencing factors: a case study of Xining. *Economic Geography*, 39(02):224-231. [in Chinese]

[15] Wu, Y. Chai, Y. & **Guo, W.** (2015) Tour-based analysis of day-to-day variability in suburban residents' travel behavior: a case study of Beijing, *Human Geography*, 30(06):27-33. [in Chinese]

[16] **Guo, W.**, Zhang, Y. & Chai, Y. (2015) Measurement of travel exposure to air pollution and its mechanism: a case study of suburban neighborhoods in Beijing, *Geographical Research*, (07): 1310-1318. [in Chinese] **SSCI Q2 Impact Factor: 3.30**

[17] Chai, Y. & **Guo, W.** (2015) Smarter management and services for communities in China: a technical roadmap towards low carbon and healthy living, *Progress in Geography*, 34(04): 466-472. [in Chinese]

[18] Zhang, Y., Chai, Y. & **Guo, W.** (2014) Social segregation: residents' daily activity spaces in Beijing, *Areal*

Research and Development. 33(5):65-71. [in Chinese]

[19] **Guo, W.**, Chai, Y. & Shen, Y. (2013) Spatio-temporal figure of suburban residents' behavior based on GPS data: a case study of Tiantongyuan and Yizhuang in Beijing, *Areal Research and Development*. 32(6):1-7. [in Chinese]

[20] Kwan, M-P., **Guo, W.** & Chai, Y. (2013) Temporally integrated human mobility and health research, *Progress in Geography*, 32(9): 1344-1351. [in Chinese]

[21] Shen, Y., Chai, Y. & **Guo, W.** (2013) Day-to-day variability in activity-travel behavior based on GPS data: a case study in suburbs of Beijing, *Geographical Research*, (04): 701-710. [in Chinese]

[22] Feng, J., Wan, Q. & **Guo, W.** (2011) Optimization of industrial structure of Wuhan Metropolitan Area based on shift-share model, *Journal of Central China Normal University*, (03): 520-526. [in Chinese]

[23] Wan, Q., **Guo, W.** & Gong, S. (2011) Spatio-temporal pattern and Granger causality of energy consumption in Hubei province during 2001-2009, *Resource Development and Market*, 2011, 27(10): 920-926. [in Chinese]

Presentations and Roundtable Discussion

Guo, W. *Developing Pathways to Smart Healthy Cities: The Nexus of Environment, Mobility and Health using Hybrid Approaches*. Oxford Talks, Oxford, 10 April 2024.

Guo, W. *Bridging the daily mobility-related short-term actual and perceived air pollution exposure to mental health and life satisfaction evaluation*. LIDA (Leeds Institute for Data Analytics)-Alan Turing Institute Mobility and Health Workshop, London, 13 October 2022.

Guo, W. *Rethink artefacts in time geography: an analytic framework for virus risk exposure in the COVID pandemic*. The 4th International Time-Geography Conference, Lund, 18-21 August 2022.

Zhao, X., **Guo W.**, Zhou Y., et al. *Incentivizing Green Travel based on Carbon Footprint: A Case Study Focusing on Mobility as a Service in Beijing*. The 16th IACP Conference, Wuhan, 23-27 June 2022.

Zhao, X., **Guo W.**, Zhou Y., et al. *Exploring MaaS in Mega Cities: A case study focusing on Beijing*. World Transport Convention (WTC), Wuhan, 15 April 2022.

Guo, W. *Environmental-health inequality and its policy implication*. The 4th Smart Urban Policy Futures workshop, London, 13-14 July 2018

Guo, W. *Triangulation & mixed methods in mobility studies*. TSU Lunchtime seminar, Oxford, 6th June 2018

Guo, W. *Visualising environmental-health justice: the case study of air pollution exposure in Beijing*. Critical Visualization Symposium, Oxford, 5 May 2017.

Guo, W. and Li, W. *Examining the role of out-of-vehicle time use on travel-related satisfaction using a GPS enhanced dataset: The case study of Beijing*. The 33rd International Geographical Congress, Beijing, 21-25 August 2016.

Guo, W. *The effects of VOC on cancer rate: evidence from panel data of Chinese cities*. The 33rd International Geographical Congress, Beijing, 21-25 August 2016.

Guo, W. Li, W., Chai, Y. *Examining the impact of air pollution on subjective wellbeing: the evidence of travel diary survey data*, The International Association for China Planning (IACP) Conference, 30 June-3 July 2016.

Guo, W., Chai, Y., Kwan, M-P. *Environmental Exposure Assessment based on Space-Time Behavior: A time-geographical framework*, International Conference on Geographies of Health and Living in Cities. Hong Kong, 21-24 June 2016.

Guo, W., Zhang, Y., Chai, Y. *Figuring suburban residents' daily pattern: evidence from GPS-based activity-travel survey in Beijing*. American Association of Geographers Annual Meeting, San Francisco, 29 March-2 April 2016.

Guo, W., Chai, Y., Kwan, M-P., Chi, G. 4th Asian Network on Climate Science and Technology International Conference: Climate Change and Urban Environment, Tsinghua University, Beijing, 15-17 July 2015

Roundtable discussion: LIDA(Leeds Institute for Data Analytics)-Alan Turing Institute Mobility and Health Workshop, London, 13 October 2022.

Roundtable discussion: *Your service has been delayed: Transport and gender in the city*. Gender Equity in Cities Conference, London, 15 September 2018

Roundtable discussion: Air Quality Exposure and Mobility Tracing Workshop, Newcastle, 29 January 2018

Roundtable discussion: *Behavioural health: from research to policy*, International Conference on Geographies of Health and Living in Cities. Hong Kong, 21-24 June 2016

Related Academic and Teaching Experience

Smart Health and Healthcare Hackathon, November 2023, Prague, Czech Republic

Smart Mobility Hackathon, November 2017, Prague, Czech Republic

Oxford University Leadership Program: Global Challenges in Transport. *Health, welfare and transport*. Oxford, December 2017

Oxford University Leadership Program: Global Challenges in Transport. *Infrastructure, development and finance*. September 2017, Oxford

Oxford University Leadership Program: Global Challenges in Transport. *Governing Transitions in Urban Transport*. March 2017, Oxford, UK

International PhD course in *Time Geography*. November-December 2017, Linköping University & Gothenburg University, Sweden

Data Study Group. *Reducing Air Pollution through Improved Traffic Control with Siemens*, December 2016, Alan Turing Institute, London, UK

Course Assistant *Towards a Sustainable Future: China's Environmental Challenges*, LSE-PKU Summer School, July 2014, Peking University, Beijing, China

Teaching Assistant *Theoretical Geography*, postgraduate course, Autumn term 2012, Peking University, Beijing, China

Teaching Assistant *Urban Sociology*, undergraduate course, Spring term 2012, Peking University, Beijing, China

Training Course *Multilevel Models and Spatial Models*, October 2013, Chinese Academy of Science, Beijing, China

Training Course *Practicing Human Geography in a GIS Environment*. Capital Normal University & Louisiana State University, July 2010, Beijing, China

Project Experience

[1] Subjective wellbeing-oriented Community Life Circle Construction HKU-South Bank Project. Chow Tai Fook Charitable Foundation. 11.2015-05.2016, HK\$ 50,000. **PI**.

[2] Construction standard and evaluation system of smart cities and smart communities. 12th Five-year National Key Technology R&D Smart Cities Project II, Ministry of Science and Technology (No. 2015BAJ08B06). 05.2015 -12.2017, ¥ 900,000. **Ranking 7/35**.

[3] Space-time behavior and smart travel service platform. 12th Five-year National Key Technology R&D Smart Cities Project I, Ministry of Science and Technology (No.2012BAJ05B04). 01.2012 -06.2014, ¥ 2,250,000. **Ranking 12/78**.

[4] Model innovation of smart community planning and management based on residents' space-time behavior research. China Association for Science and Technology Major Strategic Innovation Project (NO. KAG201500053). 05.2015.-05.2016, ¥ 200,000. **Ranking 3/18**.

[5] Built environment, healthy travel and socioenvironmental policies in Beijing. Key Research & Policy Project. Beijing Association for Science and Technology. 01.2015 -12.2015, ¥ 120,000. **Ranking 2/12**.

[6] Comparative research on residents' space-time behavior and its theoretical innovation. Overseas Scholars Cooperation Project II, National Science Foundation of China (KDW201501152). 06.2015-12.2017. ¥ 2,000,000. **Ranking 5/18**.

[7] China-US comparative research on urban residents' space-time behavior. Overseas Scholars Cooperation Project I, National Science Foundation of China (No. 41228001). 01.2013-06.2014. ¥ 350,000. **Ranking 5/15**.

[8] Evolution of Danwei system and its spatial and social response. National Social Science Foundation Key Project (No. 1AZD085). 01.2012 -12.2014. ¥ 550,000 **Ranking 8/15**.

[9] Modeling and mining space-time behavior patterns for urban planning application, sponsored by IBM. 01.2010-12.2012. ¥ 200,000. **Ranking 14/20**.

Skills

Mixed methods (Quantitative, Qualitative and spatial Analysis), Python, ArcGIS, QGIS, Stata, MPlus, Amos.

Extensions

Anonymous reviewer for numerous international journals

Committee Member & Social Impact Director, Oxford Social Entrepreneurship (OSE), 2018, Oxford

Winning prize, 13th Chunhui Cup Innovation and Entrepreneurship Competition for Chinese overseas students, Ministry of Education, China

Executive Leader, PKU Architecture Team for Solar Decathlon, 2013, China

Selective work

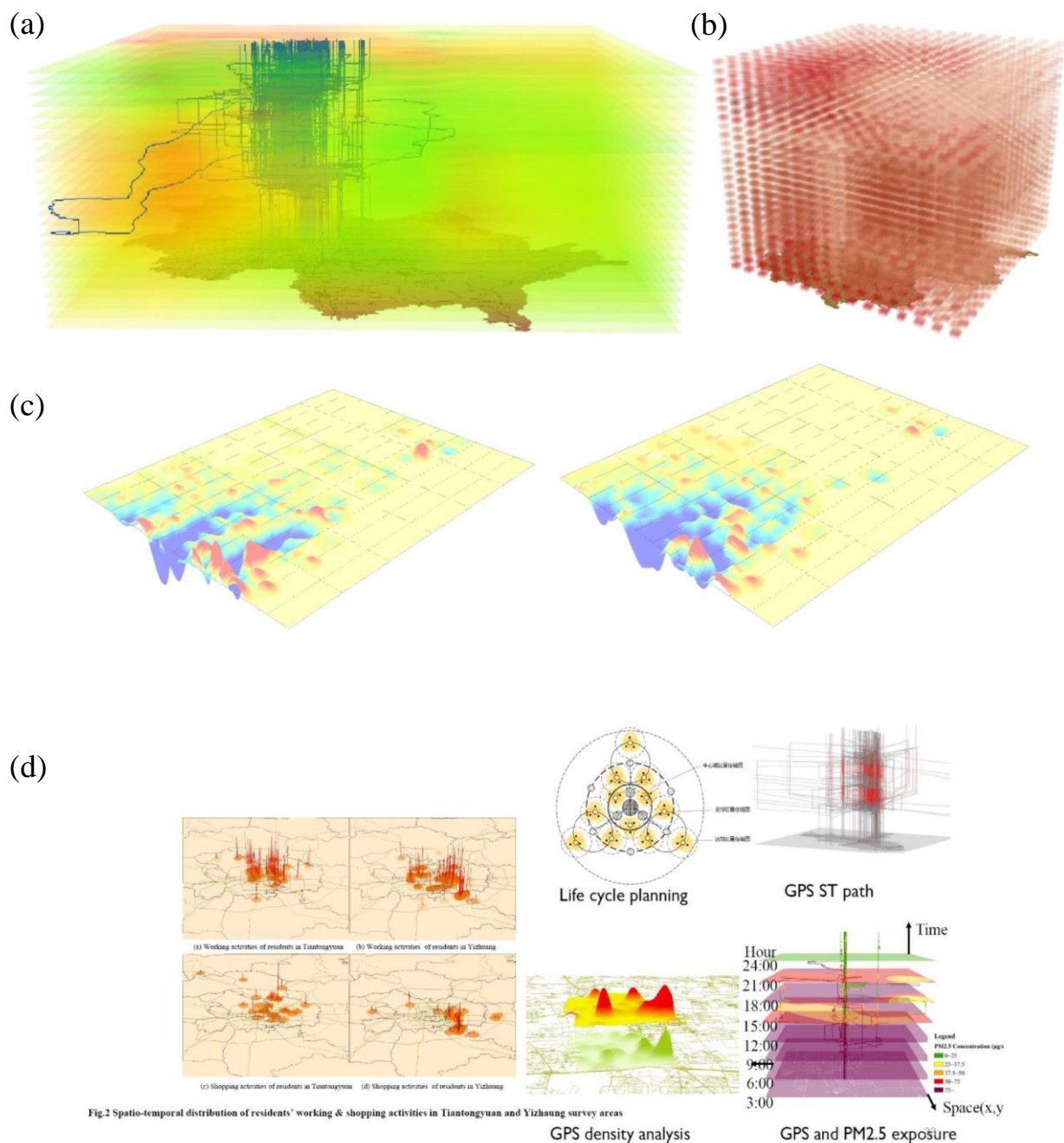
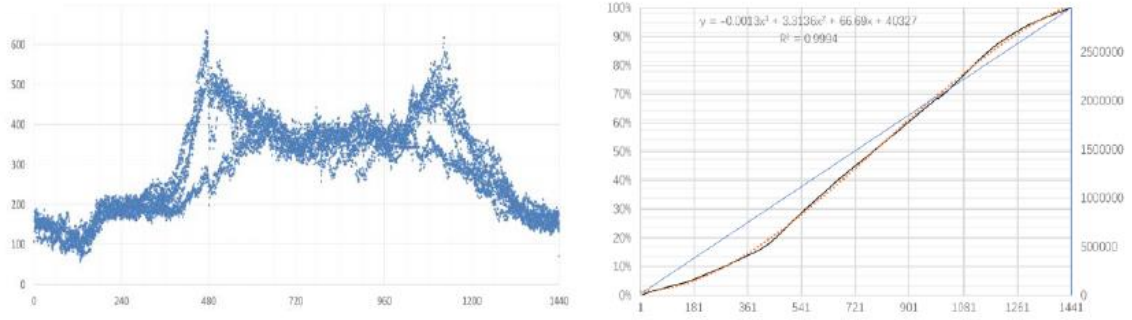
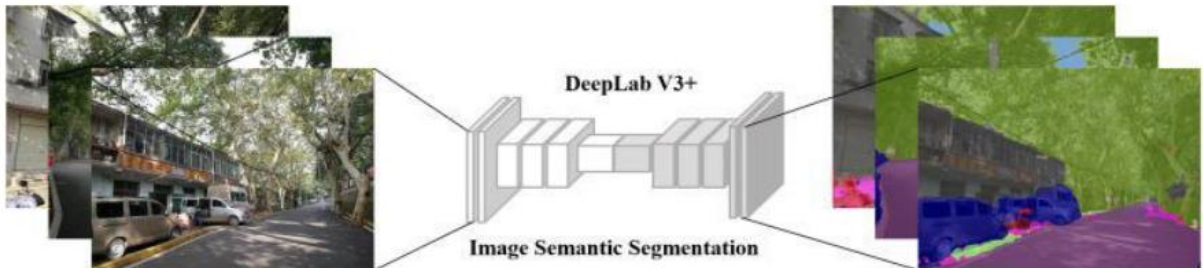
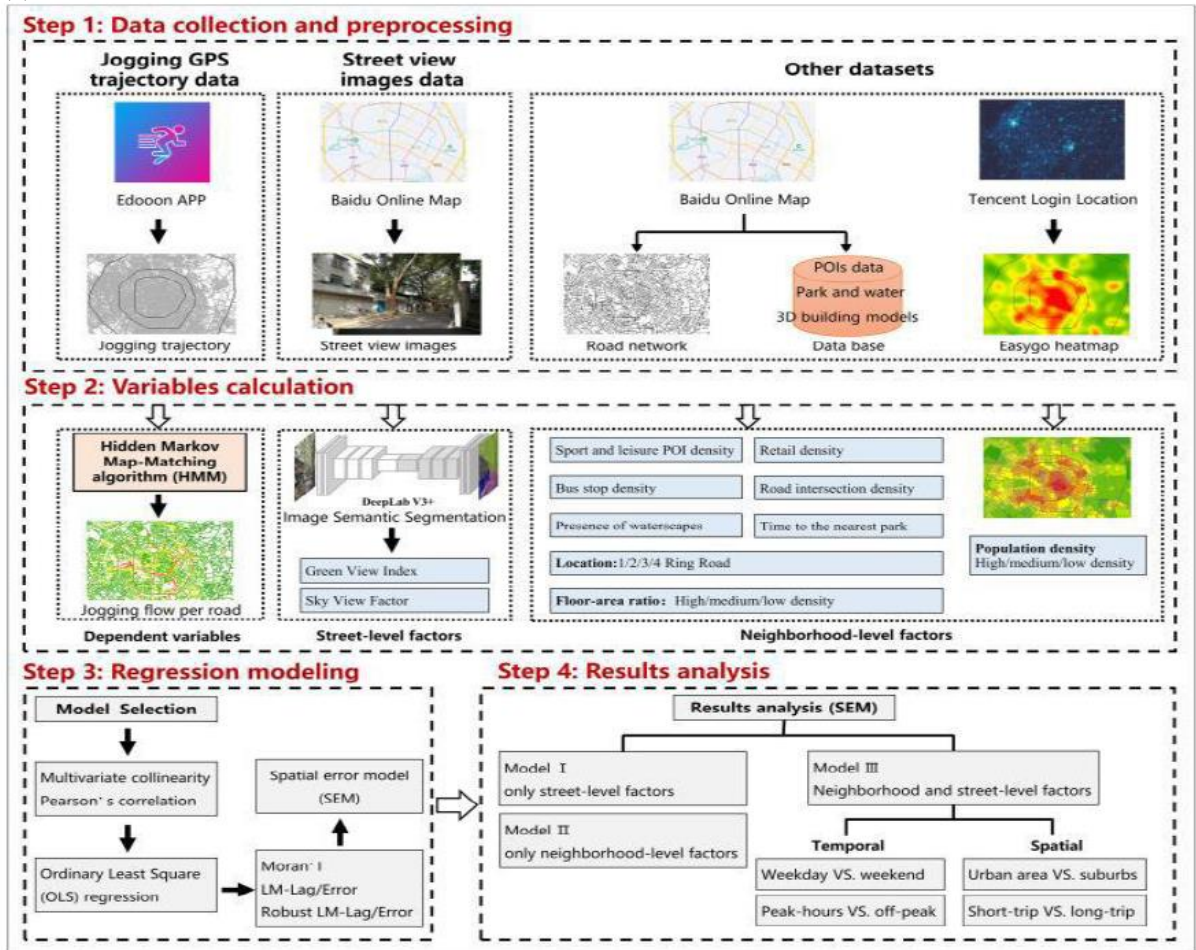


Fig.2 Spatio-temporal distribution of residents' working & shopping activities in Tiantongyuan and Yizhuang survey areas

(e)



(f)



(a) 3D-geospatial data visualisation; (b) Space-time cube; (c) 3D surface;

(d) Spatio-temporal analysis; (e) GPS data mining; (f) Street view image data mining