SCHOLARLY SHOWCASE



Science, Technology, and Innovation Policy



Jingwei He, Alex, Hongqiao Fu, and Na Tang. "From local innovation to national policy: Cross-boundary policy entrepreneurship in China's health regulatory reform." *Australian Journal of Public Administration* 85.1 (2026): 51-70.

Focus of Study

This study explores the cross-boundary policy entrepreneurship model in China's healthcare sector, analyzing how a local internet hospital pilot in Ningxia scaled up to become a national telemedicine policy. It examines how multi-stakeholder coalitions (local governments, hospitals, and tech firms) broke institutional and sectoral barriers to drive regulatory change, identifying key roles including policy entrepreneurs, process brokers, program champions, and technology innovators. The research traces the two-stage evolution of the reform—local pilot implementation and national policy diffusion—and highlights how actors employed framing, coalition-building, venue-shopping, and persuasion strategies to advance the agenda, with a focus on the tensions between disruptive digital innovation and traditional healthcare governance.

Policy Recommendation

Policymakers aiming to foster inclusive digital health innovation should adopt a multi-level, collaborative framework: support cross-sector partnerships to design and test local pilots, create formal pathways to scale successful grassroots solutions into national policy, and update regulatory systems to balance innovation with accountability. Additionally, clarifying the roles of public and private actors, strengthening oversight of data security and service quality, and nurturing a culture of adaptive governance can help emerging economies replicate China's experience while mitigating risks of over-commercialization and regulatory capture.



Khanal, Shaleen, and **Masaru Yarime**. "Exploring geopolitics and innovation: the role of bilateral relationships in shaping research collaboration." *Science and Public Policy* (2026): scag024.

Focus of Study

This paper explores how bilateral geopolitical ties shape global research collaboration and innovation. Using multiple international databases and econometric methods, it verifies three hypotheses. The results show cross-border research collaboration effectively improves patent quality. Better bilateral relations greatly raise the quantity of scientific cooperation via researcher mobility and high-tech trade. However, national ties only partially influence patent quality, failing to affect technological originality and radicalness. The study clarifies the complex interplay between geopolitics and innovation, filling research gaps in this field and offering empirical evidence for cross-border scientific cooperation amid rising global frictions.

Policy Recommendation

Governments should avoid blanket restrictions on cross-border research and technology exchanges. They need to adopt targeted rules to balance scientific openness and national security, especially for dual-use technologies. Nations are advised to build stable bilateral and multilateral scientific partnerships and launch joint research projects on global public issues. Policymakers can use tax incentives and funding support to encourage enterprises and research institutions to conduct international cooperation. It is also vital to strengthen scientific talent mobility and high-tech trade, to sustain global innovation vitality and build resilient international research networks.

Masaru Yarime. “Data Governance for Artificial Intelligence in Addressing Climate Change.” *Field Actions Science Reports. The journal of field actions* Special Report (2026): 68-71.

Focus of Study

This paper discusses the integration of artificial intelligence and climate action, centering on data governance. It analyzes AI’s wide applications in climate change mitigation and adaptation, and points out that data fragmentation, uneven data distribution, algorithmic bias, AI’s carbon footprint and imperfect institutional mechanisms restrict the effective use of climate AI. It also summarizes existing solutions including open data platforms, data trusts and public-private partnerships, and emphasizes that sound data governance is the core to unleash AI’s potential for addressing climate change.

Policy Recommendation

Policymakers should unify global data standards and break data silos, optimize technical infrastructure to narrow regional data gaps and digital divide, build inclusive and fair AI models to avoid algorithmic discrimination, establish multi-stakeholder governance mechanisms such as climate data trusts, deepen public-private cooperation, and balance AI’s climate benefits and energy consumption to promote responsible application of climate AI.



Asatani, Kimitaka, Yurie Iwata, Yuta Tomokiyo, Basil Mahfouz, **Masaru Yarime**, and Ichiro Sakata. “Structure of Scientific Knowledge Flows to Intergovernmental Organizations.” *Proceedings of the National Academy of Sciences - PNAS* (United States) 123, no. 17 (April 2026): e2514861123.

Focus of Study

This study examines scientific knowledge flows from academia to intergovernmental organizations (IGOs) using 230,737 IGO-cited papers (2015–2023) across 23 research fields. It identifies “Highly IGO-Cited Scientists (HIC-Sci)” — merely 0.7%–4.4% of authors producing 30% of IGO-referenced research. The paper unpacks three drivers of this extreme concentration: dense transnational co-authorship networks overlapping IGO advisory bodies like IPCC, faster IGO citation uptake, and standardized policy-oriented vocabulary. Mature fields (climate modeling) show far tighter concentration than emerging areas (AI & data science). HIC-Sci networks follow a Western Europe core-periphery geographic structure, and cross-IGO co-citation amplifies elite dominance, even amid IGO diversity reforms.

Policy Recommendation

The research proposes targeted institutional reforms to balance scientific credibility and procedural legitimacy for IGOs. First, IGOs should implement transparent author-level citation tracking to expose uneven knowledge sourcing, complementing existing conflict-of-interest and expert selection rules. Second, emerging policy domains such as AI governance need formal inclusive monitoring mechanisms before epistemic consensus solidifies to avoid entrenched elite bias. Third, IGOs must mitigate core-periphery geographic imbalance by systematically integrating observational, non-mainstream research from underrepresented regions. Finally, regular long-term evaluations of evidence synthesis outcomes are required, as procedural diversity adjustments fail to offset persistent citation concentration driven by cumulative advantage and network lock-in.



Julien de TROULLIOUD de LANVERSIN, Christopher Fichtlscherer, and Moritz Kütt. “Verification of very low-yield nuclear tests with post-experiment gamma spectroscopy.” *Physical Review Applied* 25.4 (2026): 044008.

Focus of Study

Against the background of the Comprehensive Nuclear-Test-Ban Treaty (CTBT) zero-yield standard and widespread low-yield nuclear experiment disputes among nuclear-armed states, this research distinguishes supercritical nuclear tests that produce self-sustaining fission chain reactions from non-prohibited subcritical experiments. Relying on 6,000 sets of neutronics, isotope evolution and photon transport numerical simulations, the paper develops a post-test gamma spectroscopy onsite verification method based on fission product and plutonium-239 gamma ray intensity discriminant ratios. It systematically analyzes how core variables including initial fission quantity per kilogram of plutonium, inspection interval after test, and pre-test assembly criticality affect detection accuracy. Simulation results confirm that the proposed technique can reliably identify all supercritical nuclear tests with explosive yields above 38 grams TNT equivalent, even with minimal prior information of test parameters. This study fills the technical research gap of onsite post-experiment verification for ultra-low-yield nuclear tests, and supplements technical evidence for international nuclear disarmament and treaty compliance monitoring theories.

Policy Recommendation

International nuclear non-proliferation and treaty monitoring authorities should take post-test gamma spectrum discriminant ratio detection as a core onsite verification tool to enforce the CTBT zero-yield standard, with existing remote seismic and radionuclide monitoring systems as auxiliary detection means. Stable international inspection frameworks are required to clarify standardized sampling, measurement and data analysis procedures for low-yield test sites, and additional technical R&D funding should be allocated to optimize portable high-purity germanium detector devices for field inspection. Relevant intergovernmental organizations need to establish unified isotope chronology calibration standards (based on Fe-59/Mn-54 isotopic ratios) to narrow the uncertainty of test time estimation. It is critical to abandon ambiguous blanket monitoring rules, balance inspection rigor and state confidentiality protection, and adopt composite technical verification instruments to eliminate loopholes in identifying covert ultra-low-yield supercritical tests, so as to reduce nuclear tension and advance the full entry-into-force of the Comprehensive Nuclear-Test-Ban Treaty



Environmental Policy and Sustainability



Gebhardt, Sebastian, Yun Hou, and **Masaru Yarime**. “Directing environmental innovation toward radical clean technologies for sustainable transitions: Market-based vs. command-and-control policies.” *Research Policy* 55.4 (2026): 105446.

Focus of Study

This study classifies environmental innovation into clean technologies and pollution abatement technologies. Using 1991–2020 patent data of manufacturing firms from 17 EU countries and multiple empirical methods, it compares how market-based and command-and-control (C&C) policies affect corporate environmental innovation. Market-based policies offer long-term incentives, flexibility and market effects to drive radical clean technology development, while rigid C&C rules cannot foster transformative innovation. Empirically, market-based policies greatly promote clean technologies and their technological radicalness, yet C&C policies show no significant effects. The paper addresses the research gap on policy guidance for innovation direction and enriches relevant theories on sustainability transitions.

Policy Recommendation

Policymakers should take market-based tools like carbon taxes and emission trading as core measures to advance radical clean technologies, with C&C policies serving only as supplements. Stable policy frameworks are required to stabilize market expectations, and more public R&D funding should be provided for high-risk emerging clean technologies. Governments also need to cultivate related niche markets via industrial and infrastructure planning. It is vital to abandon campaign-style regulation, balance regulatory intensity and implementation flexibility, and adopt mixed policy instruments to break the reliance on polluting technologies, so as to realize long-term and systematic sustainability transitions.



Yunjiang Yu, Chenwei Fan, Yingying Zhang, Yigang Wei, **Pengyu Zhu**, Xuyang Zheng, Jianghui Liu. “From grey to green: The role of emission trading schemes in China’s urban transformation.” *Energy Strategy Reviews* 64 (2026): 102084.

Focus of Study

This paper adopts the synthetic control method and DEA model to explore how China’s pilot emission trading schemes (ETS) affect urban green development efficiency from 2003 to 2020. The results show ETS improves urban green efficiency by 10%–15% overall, with obvious regional disparities. Technological innovation and industrial restructuring are two core influencing mechanisms. Multiple robustness tests verify the policy effects. The study also discusses institutional constraints and external shocks impacting policy implementation, filling gaps in evaluating ETS’s comprehensive green benefits and offering empirical support for national carbon market construction.

Policy Recommendation

China should further expand the coverage and improve operational mechanisms of the national ETS. Governments shall formulate differentiated carbon market rules based on regional resource endowments and industrial features. It is vital to boost financial participation and innovate carbon financial products to optimize resource allocation. Authorities need to continuously incentivize corporate green technological innovation and industrial upgrading. Besides, supportive infrastructure for clean energy should be perfected, and rigid institutional barriers in key sectors should be removed, to fully unleash ETS’s potential in advancing low-carbon and sustainable urban transformation.



Soares, Ian V., Anna Furberg, Shoaib Azizi, Göran Finnveden, **Masaru Yarime**, and Magdalena M. Klemun. “Estimating Cross-Border Cloud Computing Emissions: A Consumption-Based Approach Applied to Major European Data Center Hubs.” *iScience* (United States) 29, no. 6 (June 2026): 116061.

Focus of Study

This 2026 study establishes a consumption-based accounting method to measure cross-border cloud emissions, fixing limitations of traditional location-based accounting that attribute all data center pollution to host countries instead of end consumers. It targets three major EU cloud hubs—Germany, Ireland and the Netherlands—covering 2017–2022, classifying cloud traffic into domestic, export and import flows. Analysis reveals distinct national profiles: Germany’s 75% domestic cloud usage, Ireland’s 85% export-oriented hyperscale infrastructure, and the Netherlands’ balanced cross-border data exchange. The paper quantifies electricity and carbon intensity gaps across nations, assesses energy efficiency improvements, and conducts regional sensitivity tests to prove that relocating cloud workloads alters total emissions, filling the research gap of unquantified transboundary digital carbon flows.

Policy Recommendation

The paper suggests complementary policies alongside existing territorial emission rules rather than replacing them. Host nations should enforce strict licensing rules for data centers above 50MW peak capacity, obligating operators to fund grid construction and renewable energy projects to offset local infrastructure costs. Governments need to incorporate consumption-based metrics into energy planning to avoid inaccurate demand projections, especially for import-reliant Germany. Cross-border cooperation is vital to leverage low-carbon grid arbitrage: hosting cloud services in EU low-carbon areas cuts total emissions by 4%, while fossil-heavy regions push emissions up by 8–12%. Authorities should also push hyperscale cloud firms to disclose customer geographic data to build fair climate responsibility-sharing mechanisms between hosting and consuming countries.





Wing Shan Kan, Nina Sander, Ching Chit Chau, and **Raul P. Lejano**. “Climate and relationality: Transforming gendered relations from vulnerability to resilience.” Progress in Disaster Science (2026): 100653.

Focus of Study

The study examines how gendered social relationships shape women’s vulnerability to climate change and extreme weather events. Using a relational perspective, the authors argue that women’s disproportionate exposure to disaster risks is produced by context-specific cultural norms, unequal power relations, limited access to resources, and gendered divisions of labour. The article also explores how these same relationships can be transformed to strengthen resilience and empowerment. Rather than presenting women only as passive victims, it emphasizes their roles as local knowledge holders, community leaders, and active participants in disaster preparedness and climate adaptation. The study therefore focuses on how institutional change, participatory communication, and women-led initiatives can challenge social exclusion, strengthen women’s agency, and improve disaster risk reduction, planning, and policy responses.

Policy Recommendation

This paper recommends transforming climate and disaster policy from merely including women to restructuring institutions with their active leadership. Policymakers should strengthen women’s representation in decision-making, redistribute resources and unpaid care responsibilities, and direct more climate funding to local women-led organizations. Disaster programs should remove practical barriers to participation by providing childcare support and considering meeting times, mobility, and accessibility. Women should also be treated as local knowledge holders and co-designers of climate adaptation rather than passive recipients of expert information. Participatory communication, storytelling, community dialogue, and shared decision-making should be incorporated into disaster risk reduction planning so that policies better reflect local experiences, strengthen women’s agency, and connect formal institutional frameworks with the everyday realities of climate-vulnerable communities.



Social and Urban Policy



Gietel-Basten, Stuart. “The roots of equality?: Marital age homogamy and female agency in Lesotho, 1880-Present.” *Canadian Studies in Population* 53.1 (2026): 1.

Focus of Study

This demographic paper uses marital age homogamy and the Girlpower-Index to trace Lesotho’s gender equality origins. It compares 3,575 1880–1939 church marriage records with 2004–2024 DHS survey data. After filtering inconsistent marriage samples, the study finds nearly unchanged spousal age gaps and female agency metrics over a century. It refutes the mainstream view that balanced marital power only comes from recent modernization, proving Lesotho’s high female autonomy has deep historical roots, though its church-only dataset limits full societal generalization.

Policy Recommendation

For Lesotho’s gender policymakers, long-term marriage demographic trends should guide anti-early-marriage and women’s empowerment programs built on its historic female agency foundation. For African governments and researchers, digitizing colonial demographic archives is critical to avoid biased gender policy analysis. Policymakers should abandon over-simplified modernization frameworks and incorporate indigenous marital traditions to craft contextually suitable, sustainable gender equality policies across Sub-Saharan Africa.



He, Alex Jingwei, Mengjie Long, Xiaoting Liu, Na Tang “Forging integrated care through collective policy entrepreneurship in a fragmented health system: a tale of two counties in China.” *Health Economics, Policy and Law* (2026): 1-19.

Focus of Study

This qualitative comparative study examines county medical conglomeration, China’s vertical integrated care model, through collective policy entrepreneurship theory, selecting Deqing (Zhejiang) and Zhijiang (Hubei) as pioneer cases. It addresses severe fragmentation in China’s health system caused by split governance, fee-for-service incentives and weak primary care. Field interviews reveal two distinct reform pathways: Deqing’s consensus-driven technocrat coalition and Zhijiang’s top-down crisis-led leadership team. Both entrepreneurial groups deployed shared tactics like cross-region policy learning and bundled global budgets, yet adopted divergent organizational structures shaped by local economic and healthcare pressures to unify county hospitals, township clinics and village facilities.

Policy Recommendation

The paper offers multi-level health policy suggestions for fragmented systems across developing nations. Governments should nurture collective policy entrepreneurs at county levels, granting local discretionary space for incremental care integration pilots. Vertical medical conglomeration paired with bundled global budgets is recommended to realign provider incentives away from volume competition. Policymakers must tailor integration architectures to regional socioeconomic conditions instead of copying uniform models. Inter-departmental coordination mechanisms need establishment to break bureaucratic silos, and regular upper-level venue communication should be encouraged to secure political endorsement and scale proven local health innovations nationwide.



Xinyi, Wang, and **Naubahar Sharif**. “Life as an ethnic minority (EM) university student: Comparing mental health challenges among local and international EM students in Hong Kong.” *British Educational Research Journal* (2026).

Focus of Study

Based on self-determination theory, this qualitative study explores and compares mental health issues of local and international ethnic minority university students in Hong Kong via interviews and observations. Both groups face similar pressures affecting competence and autonomy, such as academic stress, financial burdens and language-related career barriers. Their biggest divergence lies in social connection: international students suffer from loneliness and social exclusion, while local ethnic minorities endure long-term ethnic segregation and discrimination. The research fills research gaps in non-Western contexts and reveals shared and unique stressors for two minority student groups, as well as existing deficiencies in campus mental health support systems.

Policy Recommendation

Universities and authorities should adopt targeted interventions for the two groups. For international minority students, launch social exchange and buddy programs to ease loneliness and exclusion. For local ethnic minorities, introduce institutional reforms and public campaigns to eliminate segregation and discrimination. All campuses need to upgrade mental health services with cultural competence, expand service capacity and reduce stigma. Additionally, optimize curriculum and language training, improve career support, and build inclusive campus cultures with diversified facilities and activities to safeguard minority students’ mental well-being.

Chen, Wenjin, **Naubahar Sharif**, and Xinyi Wang. “The trust trap: how trust in online health information harms subjective well-being.” Humanities and Social Sciences Communications (2026).

Focus of Study

This research addresses an underexplored negative link between trust in online health information and people’s subjective well-being, drawing on nationally representative 2021 Chinese CGSS data of 1,305 respondents. Multiple rigorous methods including instrumental variables and propensity score matching confirm the adverse association. Three mediating channels are identified: excessive online health search intensity, distorted health literacy including biased self-health perception, and worsened mental health such as depression. Poor physical health and lack of public medical insurance amplify this harm. Heterogeneity tests reveal the damage disproportionately hits low-socioeconomic groups, rural hukou holders and residents of less developed regions, exposing digital health inequities rooted in limited health and digital literacy.

Policy Recommendation

The paper puts forward targeted public health interventions to mitigate the “trust trap” of unreliable online health content. Governments should launch official, physician-verified health platforms and deploy source authentication technology to filter misleading medical information. Authorities need to roll out tailored health and digital literacy training for vulnerable rural, low-income and less-developed regional populations to sharpen their ability to evaluate online claims. Policymakers should also expand affordable public medical insurance and primary care access to reduce overreliance on unregulated online health resources, alongside regular monitoring of digital health misinformation to protect disadvantaged groups’ mental and overall well-being.



Yi, Fangxin, Hongfei Yu, Xianyun Zhang,Yang Yue “Hong Kong land development and policy intensity: strategic embedding in a period of transition.” *Journal of Asian Public Policy* (2026): 1-16.

Focus of Study

This paper explores Hong Kong’s land policy intensity and its fiscal impacts during the transitional period. Using ERNIE large language model to quantify policy intensity from 1997–2023 Policy Addresses, alongside time-series models, it finds stronger land policies cut absolute land revenue but keep its fiscal share stable due to institutional path dependence. Policy effects show clear temporal dynamics: bidirectional causality in Year 1, one-way policy dominance in Year 2, and fading impacts after Year 3. It reveals the shift of land governance from revenue pursuit to social welfare while constrained by long-standing fiscal structures.

Policy Recommendation

Set up fiscal stabilization funds to cushion short-term land revenue drops, diversify fiscal sources and adjust expenditure structures to ease reliance on land income, adopt differentiated governance aligned with policy timeframes for market regulation, institutional coordination and long-term reform, and prioritize public housing and social equity while establishing a multi-dimensional policy evaluation system.



Chaoqun Zhang, Mei Meng, Ziyue Chen, Wenchong Du, Weihua Dong, Jianghao Wang, Bingbo Gao, F**angxin Yi**, Kaixin Zhu, Jianqiang Hu, Yuheng Fu, Jing Yang, Manchun Li & Qiao Wang. “Wavelength-specific urban nighttime light modulates expressed sentiment across China.” Nature Cities 3.3 (2026): 261-272.

Focus of Study

This research combines 40m multispectral SDGSAT-1 satellite night light data and over 4 million geotagged Chinese Weibo posts to examine wavelength-specific artificial night light (ALAN) impacts on public sentiment. Fixed-effect regressions show blue light raises negative sentiment by 15.9% while moderate green light boosts positive mood by 5%. Risks concentrate in eastern Chinese commercial zones, and distance, seasonal and temporal heterogeneities exist across red/green/blue bands. Simulations prove tuning correlated color temperature cuts sentiment risks by 89.7%, far better than only dimming brightness, revealing spectral design’s overlooked mental health value in urban lighting research.

Policy Recommendation

Urban lighting policymakers should abandon simple brightness reduction and prioritize warm low-blue light spectra to ease residents’ negative emotions. Local governments need zone-targeted lighting rules: stricter blue light limits for commercial hotspots and seasonal adaptive light adjustments. City planners must integrate sentiment risk mapping into urban nightscape planning. Regulators should revise LED lighting standards to balance energy efficiency and public mental wellbeing, and launch monitoring systems tracking spectral pollution across high-population urban areas nationwide.



Praveen Maghelal, Yuqing Guo , Xuan Zhang , **Pengyu Zhu**. “Impacts of built environment and socioeconomic factors on trip-chaining in Abu Dhabi.” *Transportation Research Interdisciplinary Perspectives* 37 (2026): 101958.

Focus of Study

Taking Abu Dhabi of the United Arab Emirates as the research case, this study uses 9,052 valid samples from the official 2015 travel survey, adopts the Zero-Inflated Negative Binomial model and the 3Ds built-environment framework to conduct the first systematic research on residents’ trip-chaining behavior in Middle Eastern cities. It mainly analyzes how individual socioeconomic factors including gender, employment status, driving license and travel mode, household attributes and urban built environment affect the complexity of trip chaining, and carries out heterogeneity analysis among different groups. This study fills the research gap of trip-chaining studies in the Middle East, identifies that residents’ travel patterns are jointly shaped by private car dominance, inadequate public transit, local culture and demographic structure, and its findings provide empirical support for transportation demand management in similar Middle Eastern cities.

Policy Recommendation

In accordance with Abu Dhabi’s urban layout, demographics, culture and travel features, local authorities should implement inclusive transportation planning to satisfy diverse travel demands of females, teenagers and non-drivers, expand and optimize public transit networks, improve fare subsidies and multimodal transfer systems to enhance the flexibility and appeal of public transport. Meanwhile, the government shall promote high-density mixed-use development and transit-oriented construction to cut travel distances and realize integrated development of land use and transportation. It is also essential to improve non-motorized travel facilities, adopt parking management and congestion pricing to encourage green travel, guarantee females’ travel safety based on local culture, and cooperate with enterprises to adjust commuting hours. These comprehensive measures can reduce reliance on private cars, ease peak-hour traffic and build an equitable, efficient and sustainable urban transportation system.



Garba, Samaila, and **Pengyu Zhu**. “A bibliometric performance and network analysis of red-light camera impact on signalized intersection safety.” *Journal of Safety Research* 97 (2026): 86-111.

Focus of Study

This study adopts bibliometric performance and network analysis (BPNA) combined with systematic literature review (SLR) to sort out literature on red-light cameras (RLCs) and signalized intersection safety from 1975 to 2024. It systematically analyzes the knowledge structure, thematic evolution, influential authors, journals and institutions in this field, evaluates the flaws of various research methodologies as well as existing research challenges and limitations. The paper also explains why the effectiveness of RLCs in curbing red-light running and reducing traffic crashes remains controversial and explores the integration of emerging technologies such as vehicle-to-infrastructure (V2) communication. It aims to identify research hotspots and future directions, offering comprehensive theoretical references for traffic safety governance at signalized and follow-up academic research.

Policy Recommendation

Based on the research findings, traffic authorities shall rationally deploy red-light cameras and combine them with on-site law enforcement, driver education and community publicity to establish a diversified management system. Cameras should be arranged differentially according to regional conditions, traffic environments and crowd characteristics, while traffic signal timing and yellow light duration at intersections need to be optimized to address dilemma zone issues. It is also necessary to unify data collection standards and evaluation systems to scientifically assess the actual effectiveness of RLCs. Authorities should actively promote the integration of RLCs with vehicle-to-infrastructure and intelligent transportation technologies to guide standardized driving via real-time information. Meanwhile, attention should be paid to public acceptance, privacy protection and relevant laws, public opinions shall be collected continuously to optimize law enforcement procedures and penalty rules, so as to comprehensively improve traffic safety and efficiency at signalized intersections.

