nature sustainability

PERSPECTIVE

https://doi.org/10.1038/s41893-018-0101-5

The urban south and the predicament of global sustainability

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Urbanization is a global phenomenon with strong sustainability implications across multiple scales. We argue that much of the associated challenges, and opportunities, are found in the global south. We show that urban issues in the global south are distinctly and statistically different from those in the global north, but our current urban knowledge is predominantly shaped by research on and from the global north. Cities in the global south have strong imperatives, and unique but often overlooked capacity, to innovate and experiment for sustainability. We call for a renewed research focus on urbanization in the south, and suggest targeted efforts to correct structural biases in the knowledge production system.

It has been a decade since the urban tipping point, when more than 50% of the human population live in cities[1]. Unprecedented urban growth has emerged as a global driver of environmental change on multiple frontiers, across local, regional and global scales[2–4]. These include terrestrial, atmospheric and aquatic pollution, land cover change, biodiversity loss and ecosystem degradation, and exacerbated climate change and uneven distribution of the impacts[5–8]. Yet urbanization also presents a critical window of opportunity to catalyse solutions — to engender more sustainable and inclusive urban and global futures via social, infrastructural and economic transformations[3,9–11].

Recent urban growth has been primarily driven by urbanization in the global south. Since the 1970s, cities in developing countries have grown at significantly faster rates compared with cities in developed countries (Fig. 1). Ninety per cent of the projected world population growth of 2.5 billion over the next couple of decades will occur in the cities of Africa and Asia[1]. By 2030, the fastest rates of growth (≥4%) will be witnessed in sub-Saharan Africa, followed by India and parts of Southeast Asia[12]. Twenty-four of the world's thirty-one megacities are in the south, and the ten new anticipated megacities to be added by 2030, will also come from the south[13]. At the same time, the majority of future urban residents will live in global south cities of less than one million[14], characterized by low gross domestic product and low income, and deficient infrastructure[15,16]. The middle line represents the median, upper and lower box limits respectively represent 0.75 and 0.25 quartiles, whiskers represent 1.5 times the inter-quartile range above and below the limits, and outliers represent data points falling outside limits represented by the whiskers.

The speed and magnitude of urban growth in the south, associated social and economic implications, and resource and environmental footprints, position the urban south at centre stage for achieving international sustainability goals. Urban sustainability encompasses achieving and maintaining social inclusion, economic well-being and environmental quality within the cities, while minimizing negative external impacts without passing the burdens into the future.

The primary drivers of urbanization vary among regions, with different sustainability implications. When urbanization proceeds without accompanying public services, economic growth and industrialization, urban poverty increases sharply[17]. Globally, more than half of urban dwellers live in slums[18]. Yet at the same time, the emerging urban middle class in global south cities is projected to become a major driver of global consumption[19]. The combined impact of production and consumption activities brings about environmental challenges, such as severe air pollution with health consequences[20]. Despite relatively low per-capita environmental impacts of cities in the global south, southern urbanization will require large resource and energy input, and a significant increase in greenhouse gas emissions[21–24]. For example, building infrastructure in existing and future cities in the south by 2050 to the same level of cities in the global north will emit up to 226 Gt of CO_2,- more than four times the amount used to build existing developed world infrastructure[25]. Urbanization in the global south also impacts surrounding urban and surrounding rural land and aquatic systems[26]. For instance, the impact of urbanization on biodiversity in regions such as the Guinean forests of West Africa[6] and the Amazon[27] can reach hundreds to thousands of kilometres.

The process of urban expansion, illustrated in Fig. 1, plays out very differently between the global north and south, and within the south[28–31]. There is a clear, statistically significant difference in almost all social and environmental indicators between cities in the south and the global north, with just two exceptions: rates of literacy and homicide in southern Asian cities are not significantly different from global north cities (Fig. 2 and Supplementary Section 3). In addition, although sharing many challenges in common, there is no typical 'global south city' either. As Fig. 2 suggests, the lived experience of residents in cities in different regions of the global south — Africa, Asia and Latin America — is drastically different, reflected by the difference in ambient environmental quality, degree of inequality in income, education, social and physical infrastructure, and health and wellbeing.

As Fig. 3 demonstrates, the city prosperity index, infrastructure development index, quality of life index and environmental sustainability index are significantly lower in cities of the global south compared with the global north ($P < 0.05$). There are clearly discernible regional variations between Africa, Latin America and Asia as well, especially in their level of provisioning of urban infrastructure. Water and sanitation infrastructure and waste treatment represent

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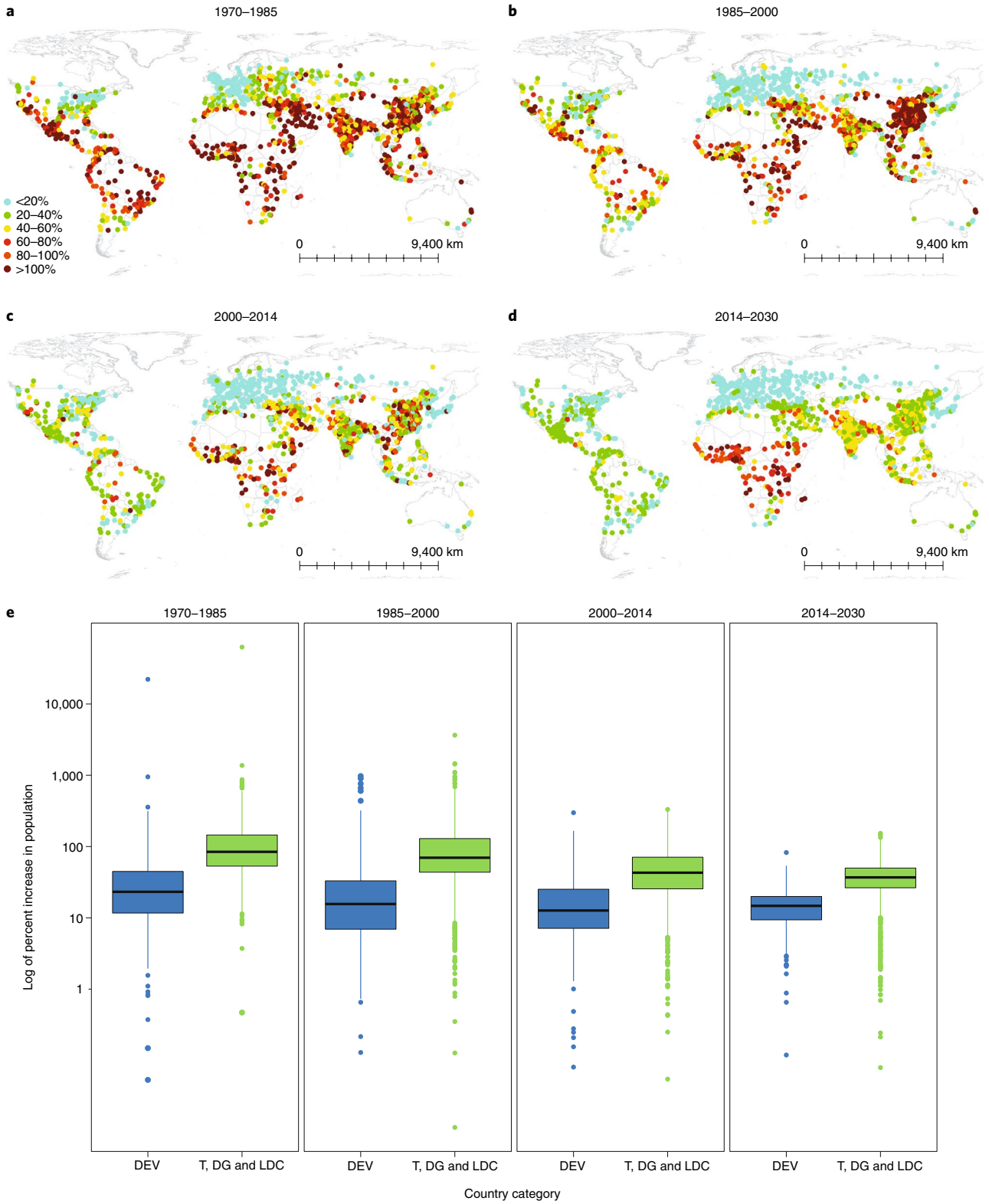

Fig. 1 | Population growth in cities. a–d, Global urban population growth for 1970–1985 (**a**), 1985–2000 (**b**), 2000–2014 (**c**) and 2014–2030 (**d**). **e**, Urban population growth for developed countries (DEV) versus transition economies (T) and developing (DG) and least-developing countries (LDC) for the same periods as in **a**–**d**. Differences between categories are statistically significant at $P < 0.05$ for all time periods, using a Wilcoxon-Mann-Whitney test.

the most problematic categories to address. In Latin America and the Caribbean alone, it is estimated that cities will need US$23.5 billion infrastructure investment to meet the demand[32]. Even if financially possible, the resource and environmental impacts exceed local and global capacities. The diversity of institutions and their impact on urban sustainability, rural–urban migration, property systems and growth patterns also need to be better understood. For instance, in China and many other Asian cities, there is a strong influence

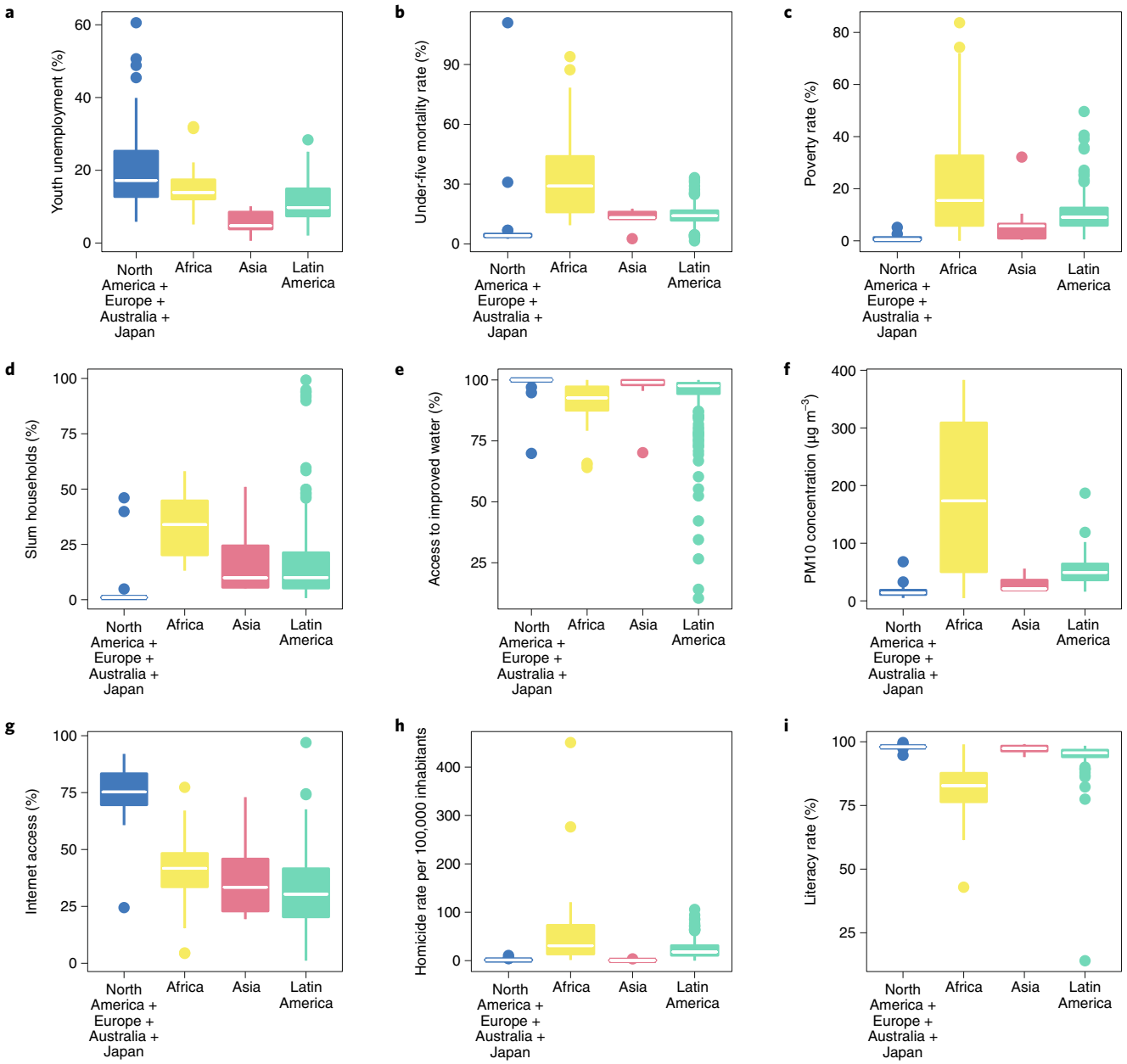

Fig. 2 | Inter-regional comparison of indicators of infrastructure, social and environmental conditions of urban areas. a, Youth unemployment. **b**, Under-five mortality rate. **c**, Poverty rate. **d**, Slum households. **e**, Access to improved water. **f**, Particulate matter <10 µm (PM_{10}) concentration. **g**, Internet access. **h**, Homicide rate. **i**, Literacy rate. These figures include a sample of 295 urban areas in 48 countries that are part of the UN-Habitat's city prosperity index database 2016. Inter-regional comparisons between the global north and other regions are statistically significant at $P < 0.05$ using a Wilcoxon-Mann-Whitney test with the exception of indicators for literacy and homicide rates between low- and middle-income countries in Asia. Source: UN-Habitat city prosperity index database 2016 (http://cpi.unhabitat.org/download-raw-data). For a description of the boxes and whiskers, see Fig. 1 caption.

of the national government as a driver of urbanization[9,33]. In many large cities of Latin America and Africa however, organized crime plays a significant role in shaping urbanization outcomes[34].

A global north-based urban knowledge production system

Current 'urban theories' are predominantly based on Western perspectives. The knowledge gap on differences in contexts and drivers in different regions of the global south constitutes a major challenge for urban sustainability. We acknowledge some universal aspects of urban knowledge[35,36]. Yet, the uniqueness of urban issues in the global south means that knowledge on the global north is not readily and widely transferable. Many ideas suggested for transformation of urban science, such as the innovative use of big data, and computer models of interaction between human activity and biophysical processes[37], are difficult to translate to the south, where basic information as essential as accurate urban population censuses can be inadequate[16,24,38,39]. Many metrics of sustainable cities were developed using data from European and North American cities[40], and may not sufficiently take into account the vastly different per-capita consumption levels between the north and south, as well as within the south. The complexity and context-specific diversity of urban issues in the global south requires more contextualized

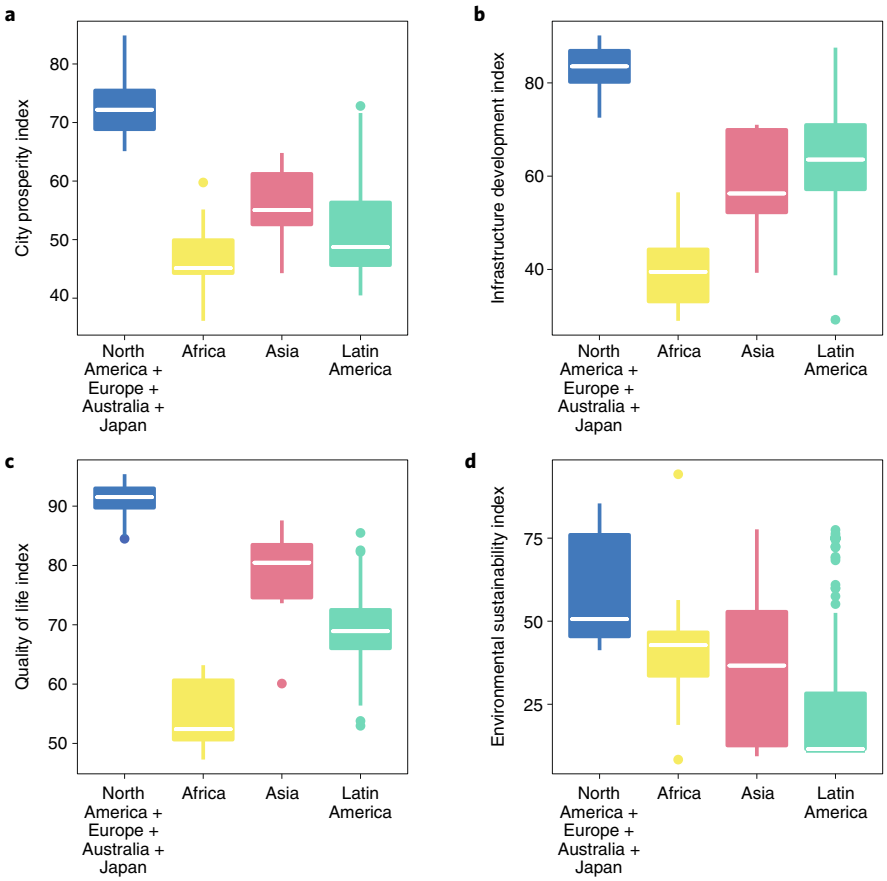

Fig. 3 | Inter-regional comparison of aggregated indices for urban prosperity, infrastructure, quality of life and sustainability. a, City prosperity index 2016, which includes six sub-dimensions: productivity index, infrastructure development index, qualify of life index, environmental sustainability index, and urban governance and legislation index. **b**, Infrastructure development index, which includes four sub-dimensions: housing infrastructure index (improved shelter with cement floor; access to improved water), social infrastructure index (physicians density), information and communication technology index (Internet access) and urban mobility index (use of public transport, average daily travel time, traffic fatalities). **c**, Quality of life index, which includes three sub-dimensions: health index (life expectancy at birth, under-five mortality rate), education index (literacy rate, mean years of schooling), and safety and security index (homicide rate). **d**, Environmental sustainability index, which includes two sub-dimensions: air quality index ($PM_{2.5}$, PM_{10} concentration, CO_2 emissions) and water and energy index (share of renewable energy consumption). These figures include a sample of 295 urban areas in 48 countries that are part of the UN-Habitat's city prosperity index database 2016. Inter-regional comparisons between the global north and other regions are statistically significant at $P < 0.05$ using a Wilcoxon-Mann-Whitney test. Source: UN-Habitat city prosperity index database 2016 (http://cpi.unhabitat.org/download-raw-data). For a description of the boxes and whiskers, see Fig. 1 caption.

and locally based knowledge, that is, greater scholarship from the south, on the south.

Despite the clear need, and compared with the diversity of research on the urban north, our knowledge about the urban south is limited — confined to specific geographies, with large blind spots in critical locations such as sub-Saharan Africa and the Amazon. The relatively limited research on the global south is also largely driven by scholarship from the global north.

We support our argument with two meta-analyses comparing respectively the most cited 100 and 1,000 articles on urban sustainability from 2007 to 2017 on Web of Science, which we use to represent the most influential urban knowledge (Supplementary Table 1 and Supplementary Fig. 1). Figure 4 shows an analysis of the top 100 most-cited articles, a pattern similar to that of the top 1,000 most-cited articles (Supplementary Fig. 1). This analysis demonstrates that the most influential and mainstream urban knowledge on sustainability predominantly emanates from the global north.

The vast majority (78%) of the papers have a first or lead author from the global north, predominantly from the United States and Europe (with Australia, Japan and Singapore playing smaller roles). Just 5% have a first author with joint affiliation from the United States and China, and one paper has a sole author with joint affiliation in Europe (London) and Jamaica. Only 16% of the papers have a first author only from the global south — without exception, all are from China. In both groups, a typical (median) paper would have 100% authorship from either the global north or global south.

The location of the first author is also related to the overall composition of authorship. Authors from the global south are present in some papers led by authors from the global north, but their average share of authorship is just 3% (excluding first authors with dual affiliations). In contrast, the share of authors from the global north in papers led by global south authors is 15%. This demonstrates that researchers from the global south collaborate more with those from the north than vice versa, a further indication of an unequal relationship.

While 49% of the studies focused on global reviews and analyses of global or multi-city datasets, 23% examined cities in the global

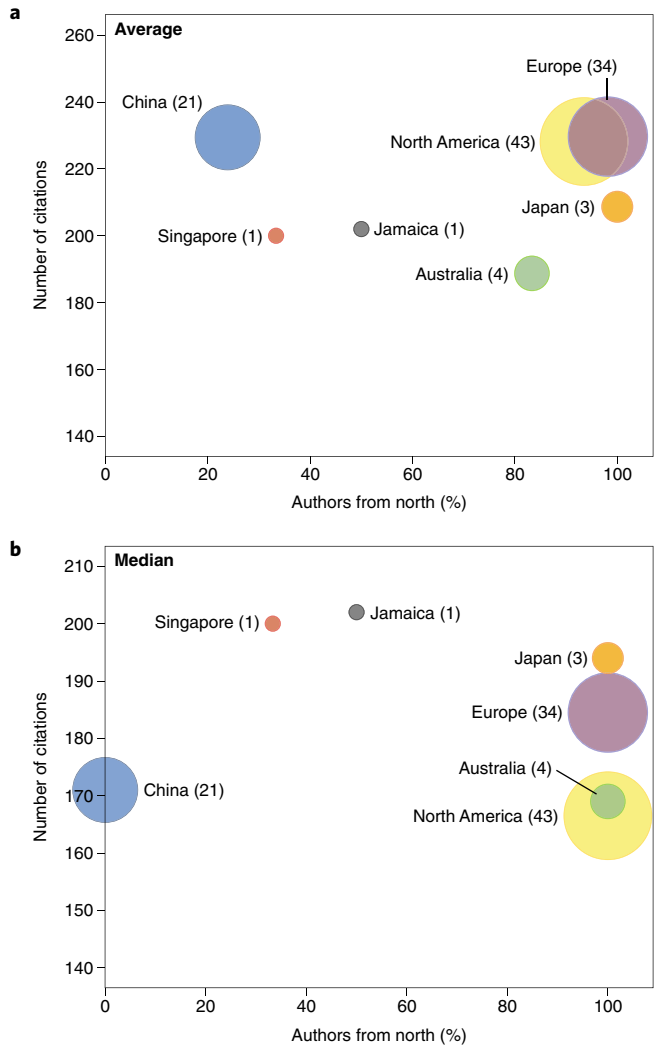

Fig. 4 | Relationship between number of citations and proportion of authors from the global north, organized by geographic region of the first author. **a**, Average citations in Web of Science. **b**, Median citations in Web of Science. Details of the papers used for the review are in Supplementary Table 1.

north — largely from United States and Europe. The remaining papers predominantly studied Chinese cities (21%), with the addition of just 3 from Mexico, 1 each from India and Bangladesh, and 2 comparing southern and northern cities. This analysis further underlines that the influential research on urbanization draws largely on studies focused on the north. While internally and nationally published research on urban problems is robust in many countries of the global south, internationally published research on southern cities is severely limited in terms of amount and influence and spotty in coverage.

To better understand whether a northern dominance is presented in research on the global south, we conducted a separate analysis. We compared the authorship for each of the 100 top-cited papers on global or global north issues, on China (given the dominance of papers from China in the top-cited papers in Fig. 4) and on the global south (except China). As shown in Table 1, over 97% of all papers on global or global north issues, and over 60% of papers on the global south (except China) are dominated by authors from the global north. Papers on China display a different trend, with 74% being authored by China-based researchers, perhaps reflecting the exponential growth of research output from the country across all research fields.

Table 1 | The differences in authorship from the global north and south, and citations from the north and south, organized by geographic focus of the research

Metric	Papers on global or global north	Papers on China	Papers on global south (excluding China)
Average authorship from the north (%)	94.1	25.3	61.4
Median authorship from the north (%)	100.0	9.2	70.0
First author from the north (%)	93.0	15.0	60.0
First author from the south (%)	3.0	74.0	32.0
Joint north–south first authorship (%)	4.0	11.0	8.0
Average citations in Web of Science	222.0	144.2	105.7
Median citations in Web of Science	184.5	116.0	94.5

Analysis based on Web of Science records between 2008 and 2017 for a search of the top 100 papers on urban sustainability for each of the following categories: global or urban north focus; China; global south excluding China. This search was conducted between 15 and 16 March 2018.

The northern bias in authorship is echoed by a strong inequality in citations and thus the ability to shape academic discourse at large. Papers focusing on global or global north issues are cited more than twice on average than those focusing on the global south, and 1.5 times more than papers focusing on China. Further, within the top 100 papers on the global south (excluding China), we found that north-led papers (that is, where the first author has a northern affiliation) have a higher number of citation than south-led papers (109 versus 96). The results demonstrate the overwhelming dominance of global north-driven authorship, not just on the global north, but also on the global south — and importantly, the influence of global north authorship in shaping the most influential research on the global south, except in China.

There are important caveats to interpreting the results. The use of the Web of Science database has its limitations, for example, works published in languages other than English are not well represented. Citation numbers have well-known skews, and we stress that higher numbers do not necessarily translate to higher quality or impact of the research. Further, the categorization of global south authorship is complex, and open to dispute, with many scholars originating from the global south now located at institutions in the global north, or vice versa, authors from the global north taking joint positions in academic institutions from the global south. Given the limited amount of scholarship, global south-led research may also currently be concentrated to a small number of voices with strong contact to global north institutions, thus such authorship does not necessarily address concerns of inclusion and voice.

Nonetheless, this analysis shows a biased pattern in urban knowledge production and diffusion: the most influential recent international literature on urban sustainability emanates from and is dominated by a focus on the global north — with the singular exception of China. If the challenges in the global south are the same as the global north, then the global dominance of scholarship from the north would be less of a problem, as knowledge developed in the north would be readily applied to the south. Because the challenges are unique, the northern-dominant knowledge production system presents a real challenge to guiding urban practice in the location where most challenges lie.

Despite a longstanding tradition of research and increasing number of publications on global south cities and by southern authors (see for example Hardoy and Satterthwaite[41]), very few tend to become influential in typical scholarly measures. Even within the papers with a global focus, theoretical framings and conceptual developments are predominantly written by authors from the global north, and cite papers from the global north. At best, cities from the global south provide empirical evidence through case studies that contribute to and reinforce prevailing theoretical framings[42]. As a consequence, the dominant discourse on urban sustainability is built around north-leaning theoretical frames and/or types of urban problems that may not fit the unique characteristics of the global south.

A number of urban theories influentially applied on the global south, including neoliberalization, inclusion, environmental justice, right to the city, co-production and informality, are developed by scholarship from the global north, barring a few exceptions[43–49]. Though influential in practice, the ways in which other sustainability concepts such as climate justice play out in the southern context are less researched and require field-based examination in these contexts[42]. For instance, a meta-analysis of urban vulnerability to temperature-related hazards finds that most published research focuses on cities in Europe and North America[50]. As a consequence, the role of power inequity and unequal resource allocations in shaping vulnerability in the global south is missing from many debates[51,52]. The dominance of the global north in the knowledge production system is of course not unique to the urban field, and similar issues exist in the broader sustainability literature[53,54]. However, the dominance in urban sustainability literature has its unique implications — given the scale, significance and urgency of dealing with urbanization and urban issues in the global south in terms of overall sustainability outcomes.

Many factors can play a role in the greater international prominence of urban sustainability scholars from the global north, including development and political processes, the overall size of the global north research community and output, large disparities in funding, scientific capacity, and even conscious and unconscious bias in academic structure and practices. Deducing the complex causes is in itself a task for future research. Yet regardless of the causes, such biases undeniably lead to a lost opportunity to better inform urban practices in the global south, where most of the current and future urbanization is expected.

Many urban 'solutions', developed in the context of northern cities, do not translate well to southern cities[55]. For example, in southern cities, technologies that convert waste to energy may be less effective because of the existence of large informal networks of waste pickers who manually extract high-value waste[56]. Equally, insights from studies of processes such as gentrification, urban renewal and shrinking cities rarely translate well to southern contexts[42]. Purely market-oriented solutions may be deeply problematic in many southern countries where poverty is high and affordability levels are low.

Harnessing opportunities in cities in the global south

Opportunities to confront urban challenges also largely lie in the global south. Cities in the global south typically have a much higher contribution to their national economy than their northern counterparts, for instance up to 80% in Asia[57]. The potential economic opportunities coupled with rapid future growth provide opportunities to experiment with alternative solutions.

There are a number of important advantages for cities in the global south to leverage, including the development of less emission-intensive materials, experimentation with green infrastructure and information technologies that lower barriers of entrance, offering new opportunities to leapfrog over some of the traditional development stages. The increasing attention to urban affairs in international policy processes such as the Sustainable Development Goals and the New Urban Agenda will hopefully increase their inclusion in national policy agendas. The 2030 United Nations Agenda for Sustainable Development emphasizes opportunities for sustainable development that can be facilitated through better planned urban transitions, for instance, by leveraging economies of scale.

Some inherent characteristics of global south cities might make them more apt and inducive to new ideas and innovations. First, the need to confront pressing problems combined with lack of financial capacity can spur progressively minded city leaders to look for radically disruptive but affordable solutions[58]. The bamboo cycle, an innovative social enterprise using locally available natural material in Ghana, the Mitticool in India — a mock-fridge modified from an earthen pot[59] — and the use of local clay on rooftops to mitigate local heating in Jordan[60] are some examples. The invention of the Bus Rapid Transition system in the Brazilian city of Curitiba, which has spread into many cities in the global south, is in part due to the fact that the city could not afford an expensive subway system, offering a great opportunity to innovate[61].

Second, inadequate urban basic infrastructure also means there is a lack of path dependency and lock-in effects in adopting new technologies. Bottom-up involvement of citizens, participatory budget processes, low-cost solutions to housing, alternative sewage and waste treatment, collective action through social media, and new forms of public–private and community–state partnership are emerging. In the Latin American cities of Manizalez, Colombia and Ilo, Peru, local environmental plans were developed by city municipalities in collaboration with community stakeholders[38]. In Durban, an ecosystem-based adaptation approach introduced by the municipality innovatively capitalized on community entrepreneurship via economic measures to encourage tree plantation[62]. The lack of centrally provided drinking water supply systems can be an opportunity to leapfrog to small and decentralized systems, which often require much lower investment but also gradually integrate urban disadvantaged groups into the economy[63]. Individuals, social movements and government sectors have also invested in bottom-up generative activities aiming at harnessing collective action around environmental remediation, urban food production and alternative green infrastructure.

Third, some of the perceived shortcomings in governance systems in the global south can also be surprisingly facilitative of terms of innovation and experiments. For example, the lack of a formal institutional setup can open space for innovation and experimentation[64]. Strong social supporting networks, informal economies, and resilience built around strong family ties and community interactions are fertile ground for grassroots experimentation and innovation. Projects such as Kolorob in Bangladesh and the Mapping Kibera project in Nairobi develop participatory approaches, via co-design with slum communities, to use mobile apps for community mapping[65]. In India, sacred traditions of conservation can act as common cultural nodes around which informal settlements organize[66]. Urban communities in many southern cities use social media to galvanize collective action and pressure governments to act on urban sustainability. The more centralized government system in China enables the national and city governments to conduct deliberate and systemized experiments, forming a nested structure of innovation that enables learning to be transferred and upscaled[67]. The adoption and proliferation of the sponge city concept in China, where urban green infrastructure is promoted at a large scale to reduce urban flood risks, is an example[68]. Similarly multi-level governance systems based on collaboration between citizens and city government have helped restore degraded urban water systems in Indian cities such as Bangalore[69].

Many innovations, and adaptation and up-taking of existing innovations at a much larger scale, are already emerging in cities in the global south. The flourishing bike-sharing system in Chinese

cities, proliferation of solar water heaters, experimentation with water ATMs in Indian cities, the advent of mobile payment systems, bamboo bikes, and the numerous innovations in green infrastructure, architecture and construction, are just some examples. Youth, including those in informal settlements, recognize the potential they have to enter into the economy and labour market through these initiatives[70,71].

Innovation and experimentation is an important topic in recent urban literature[72–75]. However, innovation in global south cities is perhaps one of the most stark knowledge gaps in the literature. There are several underlying reasons. Innovations are often framed as a phenomenon common in cities in the global north, and urban innovations in the global south are overlooked and not well documented in academic literature, except perhaps some work focusing on Asia[76]. In fact, the dominant theoretical framing of urban issues, such as neoliberal framing or the critique of it, can ignore or overshadow grassroot innovations in poverty alleviation initiated by urban managers with more progressive mindsets[42]. Several international platforms collecting urban best practices do exist and cover cities from the global south, but often with limited usage in academic literature. In addition, documentation of informally thriving practices is no guarantee of their being used by policymakers. Issues of communication and collaboration between scientists, practitioners and policymakers are fraught with complexity, especially so in the global south context.

Bringing southern cities centre stage

Many scholars argue for the need for a new type of urban science[37,77–80]. It is critical that research on and from cities in the global south play a central role in shaping these emerging research agendas. We do not presume to critique individual research, but instead seek to engage with larger issues of structural and systemic bias in knowledge production and dissemination. Agenda setting, framing of theoretical perspectives, and analyses of case studies and interventions need to better reflect the actual plurality of contexts from the north and south[81].

The context-specific issues of urban sustainability in the global south provide a fertile ground for new theory and analytical approaches. The knowledge gaps are many, including on alternative scalable solutions to sanitation, energy, transportation[82], and participatory governance of fast-growing small- and medium-sized cities, which generally lack financial and governance capacity[22,83]. Southern cities often have a strong spatial imprint of spontaneous settlements with long commuting distances. Opportunities are recognized in the New Urban Agenda as well as in Sustainable Development Goal 11[84,85]. A systems approach for evaluating trade-offs and potential benefits of urban sustainability is essential, including integrated planning that considers interactions between cities, their infrastructures and distant environmental impacts[86].

Urban sustainability research should also capitalize on the opportunity to expand the sphere of influence of home-grown concepts, theories and practices emanating from regions such as India (for example, Gandhian self-sufficiency), China (for example, sponge cities) and Brazil (for example, city of Curitiba urban planning model). The limited scope and lack of visibility of these locally influential concepts and ideas is a loss not only to southern researchers in other regions, but also to the urban sustainability discourse overall given the sheer contribution of the south to global urbanization. The restricted empirical evidence from southern cities in the top-cited literature also weakens the ability of existing research to provide a comprehensive picture of urban sustainability. This bias weakens the effectiveness of urban policymaking in the south as well, given that they are shaped in many countries by multi-lateral institutions, academics and consultants from the global north — inspired from 'international best practice', usually emanating from the global north.

Actions to address structural bias

How can the urban sustainability research community collectively engage with these structural issues? We offer four suggestions. First, the top-cited (most influential) research journals need to pay systematic attention to increasing the share of empirical research rooted in, and emanating from the global south. In our collective experience as authors and editors of several of these journals, empirical research from the global south is often dismissed from top-tier journals — because of a focus on a single case study, if they rely on home-grown concepts and theories, which may not conform to mainstream dominant theoretical framings of urban sustainability, or sometimes due to issues of language proficiency. Journal calls for submission should encourage authors from regions that represent particular knowledge gaps to send in their work, even if such work is focused on specific cities, as long as it can speak to less-studied regions, under-represented issues or alternative home-grown conceptual framings. Special issues and conference panels can provide additional avenues to encourage such submissions.

Getting the right mix of journal editorship including editorial board composition is critical for such initiatives to succeed. An examination of the editorial boards of the 59 journals publishing the top 100 most-cited papers in our analysis, which influence journal direction, aims and scope, reveal that they are dominated by scholars from institutions of the global north. In conjunction with the very important issue of gender disparity, which is gaining much needed attention in academia, journals need to ensure editorial boards are well represented by researchers from the global south, including from diverse cultural and non-English-speaking backgrounds. It is important to ensure such representation is not merely token, and scholars from the global south are actively recruited to take positions of influence in these journals, to overcome this power imbalance, and to deal with inadvertent bias.

Second, international funding programmes need to change the status quo, by enabling and promoting south-led international research. The current scenario of research funding on urban sustainability is dominated by funding from the global north, and largely favours a north-led agenda. Most calls for international or multilateral collaborative research on urban sustainability are based on a funding model where scientists receive funding from their respective countries. While important in promoting international collaborations, this process has flaws in design. The distribution of funding makes it almost impossible for researchers in many global south countries to be able to participate in, let alone drive and lead, multi-million dollar or Euro projects. Instead their contributions are limited in scope, being mostly confined to acting as collaborators who help in providing case studies and data points from the global south. International research grant calls should bypass such limitations, enabling global south researchers to access funds on an equal footing with researchers from the north. Many current urban agendas are also biased towards a northern focus, for example, on climate change — while this issue is undeniably important and would impact the global south disproportionally, it should not mask uniquely local southern issues of deprived social conditions, infrastructure deficiencies and changing ecosystems, which also exacerbate manifestations of climate change. Representations on committees for research grants can also amplify the south-focused research needs. Agendas for research and calls for funding should be set by groups that shift balance, seeking out and involving a majority of opinions from the global south. Efforts at addressing gender inequities in recent years have adopted many mechanisms that can be useful to address the north–south imbalance, for example, calling out 'manels' (for instance, 'north-els', urban panels and workshops dominated by keynotes from the global north, should be the first to be called out and changed).

Third, there is a need for academic institutions — both in the global north and in the global south — to reform evaluation

and incentive systems that put too much focus on single indicators such as Web of Science citations that have a strong northern bias[87], rewarding locally rooted research to help overcome "existing power asymmetries between Western science and indigenous and local knowledge"[88]. One approach is to provide special recognition and rewards for scholarship that engages with urban policy and action to achieve visible results, for instance, collaborating on urban reforms with governments and citizen groups, generating data for reformative civic action, or urban restoration with local communities. Scholarship in non-English native languages, which enables knowledge to have a wider reach, should also be supported by academic institutions and international bodies through funding and recognition.

Fourth, a revamped approach should be designed for urban sustainability capacity strengthening. Although changing, a number of international efforts on capacity building still walk the well-worn path of 'capacity building' workshops for young researchers from the global south, with training in theories and methods provided by senior scholars from the north. While these have had significant global impact in building the next generation of urban scholars, this approach inherently reinforces the structural bias in theory building. The notion of knowledge transfer, including that related to emerging 'solutions' and 'best practices' to sustainability problems, still refers to unidirectional north to south flows. But in light of the increasing innovations emerging from cities in the global south, one cannot overlook the role and potential of south to south, and indeed south to north flow of knowledge transfer, an increasingly fertile ground for collaboration. We need to envision and enact a very different version of capacity building, of the south by the south, and an explicit focus on knowledge transfer from the south to the north. For this, workshops in the hoary tradition of north–south learning transfers should be reframed to encourage south–south knowledge exchange and more equal south–north collaboration. Opportunities for northern researchers to receive training from the south also require brainstorming, crowdsourcing ideas and examining innovative approaches for changing the direction of knowledge flow. The goal is to emphasize an equal footing in terms of knowledge that includes both southern and northern scholars, encouraging mutual learning and cross-fertilization of ideas and innovations.

There is a pressing need for a systemic shift in the global urban sustainability research arena towards the global south, squarely recognizing and addressing geographic gaps, biases in theoretical perspectives, and historic inequities in access to funding and positions of scholarly influence. We hope this Perspective will provide a stimulus to the urban sustainability field by propelling a perhaps uncomfortable but much needed conversation on how to level the highly unequal playing field between the global north and south[89]. The ultimate goal is to promote a truly integrated global urban research agenda that meets the challenge of global, regional and local urban sustainability.

Received: 12 September 2017; Accepted: 14 June 2018;
Published online: 16 July 2018

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Acknowledgements

H.N. acknowledges research funding from Azim Premji University's Centre for Urban Ecological Sustainability. E.S.B. acknowledges support from the United States National Science Foundation for the project 'Catalyzing action towards sustainability of deltaic systems with an integrated modeling framework for risk assessment (BF-DELTAS)' (NSF # 1342898). We thank S. Agarwal, E. Bhar, C. Hilliker, S. Mundoli, A. Tabassum, P. Venkatram and Y. Zhang for assistance with data coding and figures. This Perspective is a contribution to the Future Earth Urban Knowledge-Action Network.

Author contributions

H.N. and X.B. conceived the paper. H.N., X.B. and E.S.B. designed and conducted the analysis. All authors wrote and commented on the manuscript.

Competing interests

The author declare no competing interests.

Additional information

Supplementary information is available for this paper at https://doi.org/10.1038/s41893-018-0101-5.

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