

Challenging Western Legal Orientalism

A Comparative Analysis of Chinese Municipal Social Credit Systems

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Abstract

In 2014 the Chinese State Council announced the establishment of a nationwide comprehensive social credit system. Western narratives often describe the initiative as a technologically enhanced tool of autocratic control for scoring people. Yet, as the paper aims to show, similar accounts are tainted by several misunderstandings which perpetuate Western orientalist postures towards Chinese law.

For the purpose of comparatively assessing the Chinese social credit system, the paper analyses the pilot programs set up to monitor people and enterprises' behaviour by twenty-eight Chinese cities. The analysis will demonstrate that these pilot programs rely on low-tech methodologies, have limited strings attached, and are based on a relatively transparent legal framework. From a comparative perspective, our findings suggest that Chinese cities' experiments raise problems that are similar to those posed by measurement practices widely employed in the West.

Keywords

legal Orientalism – Chinese law – social credit system – rating – nudging – quantification – model cities

Since the publication in 2014 of the Chinese State Council's 'Notice concerning Issuance of the Planning Outline for the Construction of a Social Credit System (2014–2020)',¹ Western media and scholarship have devoted considerable attention to what they have described as the establishment of a technologically enhanced system for scoring of compliance by people and enterprises with required legal and social behaviour.

Relying upon experiences such as the measures of video-surveillance, facial recognition and bio-metric data collection implemented in the province of Xinjiang,² Western newspapers and scholarly literature often depict the Chinese 'social credit system' (SCS) as a mechanism relying on proprietary algorithms, artificial intelligence and massive data harvesting to establish a total surveillance society.³ "China's movement toward algorithmic processes involving feedback loops and automated decision-making" is thus defined as

- 1 Chinese State Council, *Notice concerning Issuance of the Planning Outline for the Construction of a Social Credit System (2014–2020)*, 14 June 2020, chinacopyrightandmedia.wordpress.com/2014/06/14/planning-outline-for-the-construction-of-a-social-credit-system-2014-2020/ (English translation) (all the online materials here in cited were retrieved on June 15, 2020).
- 2 Cf W. Callahan, *Sensible Politics. Visualizing International Relations* (New York: OUP, 2020), 288–289; N. Loubere and S. Brehm, 'The Global Age of Algorithm: Social Credit and the Financialisation of Governance in China', in I. Franceschini, N. Loubere, K. Lin, E. Nessori, A. Pia, C. Sorace (eds), *Dog Days. Made in China Yearbook 2018* (Canberra: ANU Press, 2019), 146–147; Trivium China, *Understanding China's Social Credit System. Trivium China Special Report*, 23 September 2019, socialcredit.triviumchina.com/wp-content/uploads/2019/09/Understanding-Chinas-Social-Credit-System-Trivium-China-20190923.pdf; S. Mistreanu, 'Fears about China's social-credit system are probably overblown, but it will still be chilling', *Washington Post*, 8 March 2019, www.washingtonpost.com/opinions/2019/03/08/fears-about-chinas-social-credit-system-are-probably-overblown-it-will-still-be-chilling/.
- 3 See J. Black, 'The red and the black: China's social credit experiment as a total test environment', *British Journal of Sociology* 71 (2020) 489–502; V.Q. Nguyen, S. Lafrance, H.H. Ngoc, H.A. Nguyen, 'Legal and Social Challenges Posed by the Social Credit System in China', *International Journal of Innovation, Creativity and Change* 14(5) (2020) 413–428; J. Räwel, 'Reputation as a Mechanism for Coping with the Contingency of Social Addressing', *Swiss Journal of Sociology* 46 (2020) 154–161; E. Timofeeva, 'The Transition to a Digital Society in the People's Republic of China (Development and Implementation of the Social Credit Score System)', in S. Ashmarina, A. Mesquita, M. Vochozka (eds), *Digital Transformation of the Economy: Challenges, Trends and New Opportunities* (Cham: Springer, 2020), 103–110; P. Filippi, 'The Social Credit System as a New Regulatory Approach: From 'Code-Based' to 'Market- Based' Regulation', *EUI Working Paper RSCAS* 94 (2019) 25–28; W. Reijers, 'How to Make 'The Perfect' Citizen', *EUI Working Paper RSCAS* 94 (2019) 1–4; J. Weaver, 'Everything Is Not Terminator: Is China's Social Credit System the Future?', *Journal of Robotics, Artificial Intelligence & Law* 2 (2019) 445–451; F. Lagioia and G. Sartor, 'Scoring Systems: Levels of

“troubling from both a scientific and human rights perspective”.⁴ Claims that “the Chinese government is preparing a more sweeping version that could combine the social credit scoring with AI-enabled tools like facial-recognition

Abstraction’, *EUI Working Paper RSCAS* 94 (2019) 36–38; X. Qiang, ‘The Road to Digital Unfreedom: President Xi’s Surveillance State’, *Journal of Democracy* 30(1) (2019) 53–67; C. Lee, ‘Datafication, dataveillance, and the social credit system as China’s new normal’, *Online Information Review* 43(6) (2019) 952–970; C. Campbell, ‘How China Is Using “Social Credit Scores” to Reward and Punish Its Citizens’, *Time*, 16 January 2019, <https://time.com/collection/davos-2019/5502592/china-social-credit-score/>; S.W. Mosher, ‘China’s New ‘Social Credit System’ Is a Dystopian Nightmare’, *New York Post*, 18 May 2019, <https://nypost.com/2019/05/18/chinas-new-social-credit-system-turns-orwells-1984-into-reality/>; Frank Pasquale, ‘Quantifying Love’, *Boston Review*, 4 April 2019, <http://bostonreview.net/print-issues-politics/frank-pasquale-quantifying-love>; S. Hoffman, ‘Engineering global consent. The Chinese Communist Party’s data-driven power expansion’, *Australian Strategic Policy Institute – International Cyber Policy Centre, Policy Brief Report No. 21/2019*, www.aspi.org.au/report/engineering-global-consent-chinese-communist-partys-data-driven-power-expansion; S. Hoffman, ‘Social Credit. Technology-enhanced authoritarian control with global consequences’, *Australian Strategic Policy Institute – International Cyber Policy Centre, Policy Brief Report No. 6/2018*, <https://apo.org.au/node/180186>; S. Hoffman, ‘Managing the State. Social Credit, Surveillance, and the Chinese Communist Party’s Plan for China’, in *AI, China, Russia, and the Global Order: Technological, Political, Global, and Creative Perspectives*, December 2018, 48–54, <https://t.co/XHmnm6EFY>; S. Ahmed, ‘Credit Cities and the Limits of the Social Credit System’, in *AI, China, Russia, and the Global Order: Technological, Political, Global, and Creative Perspectives*, December 2018, 55–61, <https://t.co/XHmnm6EFY>; Y. Chen, L. Fu, L. Wei, ‘Rule of Trust: The Power and Perils of China’s Social Credit Megaproject’, *Columbia Journal of Asian Law* 32(1) (2018) 1–36; A. Ma, ‘China has started ranking citizens with a creepy ‘social credit’ system’, *Business Insider*, 29 October 2018, www.businessinsider.com/china-social-credit-system-punishments-and-rewards-explained-2018-4; L. Backer, ‘Next Generation Law: Data-driven Governance and Accountability-Based Regulatory Systems in the West, and Social Credit Regimes in China’, *Southern California Interdisciplinary Law Journal* 28 (2018) 123–172; Y. Chen and A. Cheung, ‘The Transparent Self Under Big Data Profiling: Privacy and Chinese Legislation on the Social Credit System’, *Journal of Comparative Law* 12(2) (2018) 356–378; F. Liang, V. Das, N. Kostyuk, M. Hussain, ‘Constructing a Data-Driven Society: China’s Social Credit System as a State Surveillance Infrastructure’, *Policy and Internet* 10(4) (2018) 415–453; L. Lucas and E. Feng, ‘Inside China’s surveillance state’, *Financial Times*, 20 July 2018, www.ft.com/content/2182eebe-8ar7-11e8-bf9e-8771d5404543; S. Mistreanu, ‘Life Inside China’s Social Credit Laboratory’, *Foreign Policy*, 3 April 2018, foreignpolicy.com/2018/04/03/life-inside-chinas-social-credit-laboratory/; J. Chin and C. Bürge, ‘Twelve Days in Xinjiang: How China’s Surveillance State Overwhelms Daily Life’, *Wall Street Journal*, 19 December 2017, www.wsj.com/articles/twelve-days-in-xinjiang-how-chinas-surveillance-state-overwhelms-daily-life-1513700355; M. Hvistendahl, ‘Inside China’s Vast New Experiment in Social Ranking’, *Wired*, 12 April 2017, www.wired.com/story/age-of-social-credit/.

4 A. Devereaux and L. Peng, ‘Give us a little social credit: to design or to discover personal ratings in the era of Big Data’, *Journal of Institutional Economics* 16 (2020) 1–19.

and predictive policing” in order “to enhance authoritarianism and consolidate its social control”⁵ emphasize the highly technological and deeply oppressive character of the Chinese plan, dubbing it as a data-driven model of autocratic control and equating it to a dystopian nightmare that “turn Orwell’s 1984 into reality”.⁶

Against such a framework, which stems and perpetuates deeply rooted Western postures vis-à-vis the Chinese legal tradition, the present paper aims to dispel some common misunderstandings about the Chinese scs. We will first make it clear that, far from being a unitary system, Chinese scs initiatives are multiform and different from one another. As a case study, we will focus on the pilot social credit programs that have been set up by many cities, mostly located in the East-Coast provinces, to control the behaviour of the resident population and enterprises. We chose these programs since they are often taken by Western media and scholarship as anecdotal evidence of the progressive establishment of a technologically-advanced Panopticon.⁷ Our empirical analysis will demonstrate that, at least for the time being, the majority of pilot programs established by the Chinese cities make limited use of social scoring, largely rely on low-tech and backward-looking methodologies, and are based on a relatively transparent legal framework. It is still uncertain, also in light of the impact that the outbreak of the coronavirus pandemic has had on current experiments,⁸ whether and to what extent such pilot programs will be confirmed or harmonized into a unified system. While the assessment of potential uses of Chinese cities’ pilot social credit programs is beyond the scope of this paper, our study offers a comparative analysis of these programs’ architecture and management. The study will hopefully help shed light on the actual reach and impact of Chinese scs initiatives, and contribute to a more informed evaluation of the real-world challenges and risks these programs raise. We will first survey some of the most frequent misconceptions affecting the assessment of Chinese scs, both from an internal and an external perspective (section 2). We will then provide some information about the plurality of scss currently in use (section 3). Our attention will then dwell on municipal pilot experiments. After some explanations about the methodology we have followed (section 4),

5 Chen, Fu, Wei, *supra* n 3, 6.

6 Mosher, *supra* n 3.

7 E.g., Campbell, *supra* n 3; G. Sabrié, ‘A Surveillance Net Blankets China’s Cities, Giving Police Vast Powers’, *New York Times*, 17 December 2019, www.nytimes.com/2019/12/17/technology/china-surveillance.html; Qiang, *supra* n 3; Lee, *supra* n 3; Mosher, *supra* n 3.

8 A. Chipman Koty, ‘China’s Social Credit System: COVID-19 Triggers Some Exemptions’, *China Briefing*, 26 March 2020, <https://www.china-briefing.com/news/chinas-social-credit-system-covid-19-triggers-some-exemptions-obligations-businesses/>.

we will analyze the programs established by the twenty-eight cities selected by the government, in 2017 and 2019, as model cities (section 5). Our data show that the relevant regulations cover economic and legal behaviour of both people and businesses, but as many as half of them avoid scoring; even cities which adopt a scoring system, preferably limit it to only individuals. While some model cities make use of cameras, facial recognition devices and smart programs, the extent to which such devices are linked to social credit management is unclear; if there is a link, it is at best indirect. The conclusions will review the findings in comparative perspective, suggesting that mainstream Western views about the Chinese experience are tainted by several misunderstandings, factual inaccuracies, and biases (section 6).

2 Chinese Social Credit through a Glass, Darkly

As mentioned above, mainstream views on the Chinese scs as a centralized system relying upon smart technologies to frame and control people and business behaviour are affected by several shortcomings. Western narratives about the Chinese scs are often based on a superficial analysis of China's framework, which on the one hand fails to appreciate social credit initiatives in the background of the country's history and culture, and on the other hand tends to overemphasize Chinese exceptionalism, while underestimating patterns of controlling social behaviour through ratings, scores and rankings which are widely acknowledged and used in the West.⁹

Commentators who are familiar with the Chinese tradition have stressed that the State Council's Planning Outline stands in historical continuity with Chinese (first Confucian and Legalist, then Imperial and subsequently Communist) approaches to social management and deeply ingrained practices

9 As it often happens in Western postures towards the Chinese legal tradition: see, e.g., J. Kroncke, *The Futility of Law and Development: China and the Dangers of Exporting American Law* (New York: Oxford University Press, 2016); T. Zhang, 'Beyond Methodological Eurocentricism: Comparing the Chinese and European Legal Traditions', *American Journal of Legal History* 56 (2016) 195–207; T. Ruskola, *Legal Orientalism: China, the United States, and Modern Law* (Cambridge: Harvard University Press, 2015); M. Bussani, 'Comparative Law beyond the Trap of Western Positivism', in S. Mancuso and T.-I. Cheng (eds), *New Frontiers of Comparative Law* (Hong Kong: LexisNexis HK, 2013), 1–10; more recently, T. Coendet, 'Critical Legal Orientalism: Rethinking the Comparative Discourse on Chinese Law', *American Journal of Comparative Law* 67 (2019) 775–824.

of controlling individual behaviour.¹⁰ In this light, the Chinese scs, far from being a revolutionary system fuelled by new technologies, would appear to be in consonant with Chinese culture and visions of societal relationships and national power¹¹ – a consonance that would be further demonstrated by the rate of approval of the government's plan by the population, and especially by the country's educated élites.¹²

In a different direction, some commentators¹³ have underlined that the very idea of creating a scs (mostly thought in terms of measurement of the economic reliability of individuals and businesses) emerged in China at the beginning of the 21st century¹⁴ (the first guiding opinions by the Chinese State Council on the matter being issued in 2007),¹⁵ when China was negotiating to enter the World Trade Organization. According to such voices, the establishment of a scs may therefore be traced back to US pressures for mechanisms allowing foreign partners to assess the trustworthiness of Chinese businesses.¹⁶

Along similar lines, others have noticed that, if looked at with unbiased lenses, the Chinese embracement of social credit seems nothing but a

10 Among those who have stressed the historical continuity between the establishment of a social credit system and traditional Chinese approaches to society's administration and management, cf E. Dubois de Prisque, 'Le système de crédit social chinois. Comment Pékin évalue, récompense et punit sa population', *Futuribles* 434 (2020) 27–45, at 38–44; Nguyen, Lafrance, Ngoc, Nguyen, *supra* n 3, 415–417; C. Liu, 'Multiple social credit systems in China', *Economic Sociology* 21(1) (2019) 22–32, at 28–29; R. Creemers, 'China's Social Credit System: An Evolving Practice of Control', 9 May 2018, 5–7, <https://ssrn.com/abstract=3175792>; M. von Blomberg, 'The Social Credit System and China's Rule of Law', *Mapping China Journal* 2 (2018) 79–112, at 85–86.

11 See W. Wu, 大国信用——全球视野的中国社会信用体系 (*Credit of a Great Nation. Global Vision of China's Society Credit System*) (Beijing: China Planning Press, 2017) (in Chinese).

12 See the results of the survey carried out by G. Kostka, 'China's social credit systems and public opinion: Explaining high levels of approval', *New Media & Society* 21(7) (2019) 1565–1593; Chen, Fu, Wei, *supra* n 3, 28. See also the sociological and anthropological surveys carried out by M.O. Rieger, M. Ohlberg, M. Wang, 'What do young Chinese think about social credit? It's complicated', *Merics – China Monitor*, 26 March 2020, <https://merics.org/en/report/what-do-young-chinese-think-about-social-credit-its-complicated>; X. Wang, 'China's social credit system: The Chinese citizens' perspective', 9 December 2019, <https://blogs.ucl.ac.uk/assa/2019/12/09/chinas-social-credit-system-the-chinese-citizens-perspective/>.

13 Cf S. Arsène, *China's Social Credit System: A Chimera with Real Claws* (Paris: Institut français des relations internationales, 2019) 10–11; Dubois de Prisque, *supra* n 10, 36–37; Chen and Cheung, *supra* n 3, 359; Liang, Das, Kostyuk, Hussain, *supra* n 3, 424–425.

14 J. Lin, 社会信用体系原理 (*Social Credit System Theory*) (Beijing: China Founder Press, 2003) (in Chinese).

15 Chinese State Council, 'Guiding Opinions Concerning the Construction of a Social Credit System', 2 April 2007, www.gov.cn/jwqk/2007-04/02/content_569314.htm (in English).

16 See Dubois de Prisque, *supra* n 10, 36; Weaver, *supra* n 3, 446.

state-directed version of private quantitative devices gathering and providing data on the performance, solvency or quality of the data subjects that are also widespread in the West.¹⁷ Suffice it to think about the many forms of reputation-based (and more or less technologically-enhanced) practices of measuring people, business and countries that are used in the West to help assess trust among strangers and to steer social behaviour in specific directions.¹⁸ In the West, the measurement of participants' reputation and performance is a fundamental pillar of sharing economy transactions.¹⁹ Beyond (and before) sharing economy, many Western companies daily rely on smart programs to track and quantify people's creditworthiness, reliability, preferences and habits.²⁰ The business model of credit rating agencies is built on the supply of individual and sovereign ratings for a fee.²¹ Scoring and ranking nations are also at the core of the service rendered by global indicators, which are almost exclusively produced in the Global North but aim to measure the performance of all countries in the world.²² In spite of the normalization and internalization of such and related practices in the West, they raise questions

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- 17 Devereaux and Peng, *supra* n 4, 4, 7; Loubere and Brehm, *supra* n 2, 143; D. Sithigh and M. Siems, 'The Chinese Social Credit System: A Model for Other Countries', *Modern Law Review* 82(6) (2019) 1034–1071, at 1036–1046.
 - 18 Similarities between Chinese scs and Western reliance upon rating and scoring mechanisms have been noticed, among others, by Devereaux and Peng, *supra* n 4, 8–13; Sithigh and Siems, *supra* n 17, 1039–1047; A. Devereaux, 'The Nudge Wars: A Modern Socialist Calculation Debate', *Review of Austrian Economics* 32(2) (2019) 139–158.
 - 19 Cf S. Ranchordás, 'Online Reputation and the Regulation of Information Asymmetries in the Platform Economy', *Critical Analysis of Law* 5 (2018) 127–147; M. Fertik and D. Thompson, *The Reputation Economy: How to Optimise Your Digital Footprint in a World Where Your Reputation Is Your Most Valuable Asset* (New York: Random House, 2015); P. Resnik and R. Zeckhauser, 'Trust Among Strangers in Internet Transactions: Empirical Analysis of eBay's Reputation System', in M. Baye (ed), *The Economics of the Internet and E-commerce* (Bingley: Emerald, 2002), 127–157.
 - 20 See N. Packin and Y. Aretz, 'On Social Credit and the Right to Be Unnetworked', *Columbia Business Law Review* 2 (2016) 339–425; F. Pasquale, *The Black Box Society: The Secret Algorithms that Control Money and Information* (Cambridge: Harvard University Press, 2015); C. O'Neill, *Weapons of Math Destruction: How Big Data Increases Inequality and Threatens Democracy* (New York: Random House, 2016).
 - 21 Cf A. Cooley, 'The emerging politics of international rankings and ratings. A framework for analysis', in A. Cooley and J. Snyder (eds), *Ranking the World. Grading States as a Tool of Global Governance* (Cambridge: Cambridge University Press, 2015), 1–38; M. Bussani, 'Credit Rating Agencies' Accountability: Short Notes on a Global Issue', *Global Jurist* 10(1) (2010) 1–13.
 - 22 See J.G. Kelley and B. Simmons (eds), *The Power of Global Performance Indicators* (New York: Cambridge University Press, 2020); M. Infantino, 'Quantitative Legal Comparisons: Narratives, Self-Representations and Sunset Boulevards', *Journal of International &*

about authority, legitimacy and governance that are similar to those posed by Chinese social credit experiments.²³

For reasons of space and because most readers will be familiar with them, we will not dwell upon Western measurement practices and their similarities with Chinese SCSS, although the former should be kept in mind as an implied point of comparison when investigating the latter. From our perspective, some of the gravest shortcomings of current views about the Chinese SCSS lie elsewhere and are mostly of a factual nature. Mainstream narratives assume that China is building up, if not already relying on, a single, unified and technologically smart system of social credit. The following analysis will show that such a system does not exist yet.²⁴ Nor does it seem that it will be established in the near future. What exists rather is a complex web of experimental and pilot programs, carried out by a number of public and private, national and local actors, sometimes in collaboration with one another, and characterized by a highly varied reliance on smart technologies.

3 A Web of Scores

Visions of Chinese SCSS as a centralized mechanism are largely misconceived. In recent years a plethora of social credit experiments have been conducted by different actors, often with little coordination with one another, by different means and with different consequences. These experiments differ not only because of the array of actors who run them, the technologies they rely upon, and the legal strings attached to them, but also because of their legal basis, the notion of ‘credit’ they embrace, the aspects they measure, the data they

Comparative Law 6(2) (2019) 287–306; D. Malito, N. Bhuta, G. Umbach (eds), *The Palgrave Handbook of Indicators in Global Governance* (London: Palgrave, 2018); J.G. Kelley, *Scorecard Diplomacy. Grading States to Influence their Reputation and Behavior* (New York: Cambridge University Press, 2017); M. Infantino, ‘Global Indicators’, in S. Cassese (ed), *Research Handbook on Global Administrative Law* (Cheltenham: EE, 2016), 347–367; A. Broome and J. Quirk, ‘The Politics of Numbers: The Normative Agenda of Global Benchmarking’, *Review of International Studies* 41(5) (2015) 813–838; S. Merry, *The Seductions of Quantification. Measuring Human Rights, Gender Violence, and Sex Trafficking* (Chicago: University of Chicago Press, 2015).

²³ See the literature quoted *supra* n 19–22.

²⁴ The same point has been made, e.g., by X. Dai, ‘Enforcing Law and Norms for Good Citizens: One View of China’s Social Credit System Project’, *Development* 63 (2020) 38–43; J. Chen, ‘Putting ‘Good Citizens’ in ‘The Good Place’?’, *EUI Working Paper RSCAS* 94 (2019) 22–24; Kostka, *supra* n 12, 1566; Trivium China, *supra* n 2; Liu, *supra* n 10; Creemers, *supra* n 10; von Blomberg, *supra* n 10, 84–85.

rely on, and the concrete forms taken by their measurements, which range from point-based scoring, to letter grading systems, to inclusion in a black or red list. The variety of such experiments is so diverse that the few commentators who acknowledge it disagree about how many forms of SCSS exist in China. Some distinguish between two basic types of programs – those focused on social credit on the one hand, and those centred on financial data on the other.²⁵ Others recognize three main models, articulated in China-wide red- and black-listing initiatives, public and private commercial initiatives, and initiatives established by cities.²⁶ Still others argue that there are four main kinds of SCSS: the public financial credit system headed by the People's Bank of China, private systems of commercial credit ratings, the nationwide governmental systems of black and red lists, and the governmental cities' systems.²⁷ For this article's sake, we will rely on a tripartite division between financial (public and private) scoring systems, nationwide black/red lists systems, and the social credit systems of cities.

3.1 *Financial (Public and Private) Scoring Systems*

Early experiments with measurements, in the form of financial scorings, started in the 1990s, when China developed its own market of credit rating companies, to provide ratings on the economic stability of corporations.²⁸ When, at the beginning of the 2000s, the idea of 'social credit' first emerged as centred on economic reliability, the People's Bank of China (PBoC) translated it into the generation of a public financial credit system. The current system is managed by a PBoC's agency, the Credit Reference Centre (established in 2006), and covers both natural persons and corporations, providing credit reports about their economic activities and status.²⁹ As of June 2019, the PBoC's Credit Reference

25 Trivium China, *supra* n 2.

26 von Blomberg, *supra* n 10, 84; Sítigh and Siems, *supra* n 17, 1048.

27 Cf Liu, *supra* n 10, 23; D. Fickling, 'China's Social Credit System Is More Kafka Than Orwell', *Bloomberg*, 19 June 2019, www.bloomberg.com/opinion/articles/2019-06-19/china-s-social-credit-system-is-disorganized-and-little-used.

28 For instance, the PBoC approved in 1994 the establishment of Dagong Global Credit Rating Co. Ltd., which has now become the most powerful non-Western credit rating agency. See DaGong Global, 'What We Do', 2016, <http://en.dagongcredit.com/index.php?m=content&c=index&a=lists&catid=10>, as well as J. Sheng, 'The Debt Ratings Debate and China's Emerging Credit Rating Industry: Regulatory Issues and Practices', *Athens Journal of Law* 5 (2019) 375–404.

29 For a short history of the PBoC's role in the establishment of a rating system for people's and business' creditworthiness and economic reliability, see Liu, *supra* n 10, 23.

Centre had collected information on 990 million natural persons and 25.91 million enterprises and other institutions.³⁰

In the initial days of 2015, the PBoC considered issuing licences to develop experimental credit ratings for use in assessing applicants for small business loans and consumer credit.³¹ It, therefore, granted to eight tech companies, including Alibaba, a trial licence to build their own individual credit rating and score system.³² At the end of January 2015, Ant Financial, a company affiliated with Alibaba, launched its Sesame credit score application, which put together consumers' financial data (such as payment timeliness) and personal data (such as educational level, ownership of cars, consuming preferences, quantity and quality of relationships on social networks). The application produced a score that was shared with other public and private platforms in order to allow, speed up or deny people's access to some services, such as bike rentals, online dating and visa applications.³³ However, after the end, in 2017, of the trial period of the individual credit rating system, the PBoC decided not to issue the prospected licenses.³⁴ In 2018, the National Internet Finance Association of China, another governmental agency under the PBoC, and the eight companies selected for the trial became funders and shareholders of a new public-private company devoted to commercial individual credit scoring, Baihang Credit, which is nowadays the only commercial credit rating agency licensed to issue credit reports on individuals.³⁵

3.2 *Nationwide Black/Red List Systems*

The notion of 'social credit' embraced in the 2014 Chinese State Council's Planning Outline extends far beyond the economic sphere, covering social

30 See China Banking News, 'The Credit Reference Centre of the People's Bank of China', September 2019, www.chinabankingnews.com/wiki/the-credit-reference-center-of-the-peoples-bank-of-china/ (in English).

31 See People's Bank of China, '关于做好个人征信业务准备工作的通知' ('Notice on Preparatory Work for Personal Credit Reporting'), 5 January 2015, www.gov.cn/xinwen/2015-01/05/content_2800381.htm (in Chinese).

32 Ibid.

33 Alibaba's experiment with Sesame Credit has attracted a great deal of attention by Western scholarship: cf Devereaux and Peng, *supra* n 4, 5–6; Sithigh and Siems, *supra* n 17, 1052–1053; Trivium China, *supra* n 2, 44–46; Chen and Cheung, *supra* n 3, 361–363; Creemers, *supra* n 10, 22–25; von Blomberg, *supra* n 10, 93–95; Chen, Fu, Wei, *supra* n 3; M. Ke, S. Chen, N. Cai, L. Zhang, 'The Current Situation and Problems of Zhima Credit', *Advances in Social Science, Education and Humanities Research* 264 (2018) 741–744.

34 For the reasons underlying the choice, see Arsène, *supra* n 13, 19–20; Liu, *supra* n 10, 24.

35 Baihang Credit, '公司简介' ('Company Profile'), 2018, www.baihangcredit.com/about/companyProfile.html (in Chinese). On the establishment of Baihang Credit, see Liu, *supra* n 10, 24; Trivium China, *supra* n 2, 37.

sincerity and civil virtue. Such aspects, which were traditionally not considered by financial ratings, were already captured – before and after the 2014 Planning Outline – by a vast array of other governmental initiatives, aimed at tracing and measuring the behaviour of businesses and people beyond the economic sphere.

The Chinese Supreme People's Court (SPC) played in this regard a pioneering role. In line with the government's project of educating people and nudging appropriate behaviour through the establishment of a social credit system, the SPC has since 2013 taken the decision to publish public blacklists of persons and businesses who did not comply with judicial orders – typically, with orders of paying debts.³⁶ The practice has rapidly been adopted by other courts and internalized by Chinese society: a new word, *laolai* (老赖, literally 'very dishonest person who refused to pay his debts'), now denote those who are discredited judgment debtors, either by the SPC or by other courts issuing such lists.³⁷

The same practice of issuing blacklists (and, more rarely, redlists, that is, lists of businesses and people complying with model behaviour) has steadfastly been embraced by a number of governmental and local public agencies. For instance, the Civil Aviation Administration of China (CAAC) has developed two blacklists, one for civil aviation enterprises and personnel and another for passengers not complying with aviation rules.³⁸ The Office of the Central Cyberspace Affairs Commissions (CCAC) has developed a list of those who

36 Supreme People's Court, 'Interpretation No. [17]', 6 July 2013, www.chinalawtranslate.com/en/court-blacklist/ (in English). On the Supreme People's Court's regulatory power and on the forms in which such power might express itself, see, for all, D. Qi, *The Power of the Supreme People's Court: Reconceptualizing Judicial Power in Contemporary China* (London: Routledge, 2020).

37 On the rise of the new expression, Arsène, *supra* n 13, 7; Liu, *supra* n 10, 24–25; Trivium China, *supra* n 2, 13.

38 See Civil Aviation Administration of China, '民航行业信用管理办法(试行)' ('Civil Aviation Industry Credit Management Measures (Trial Measures)'), 2017, www.caac.gov.cn/ZTZL/RDZT/XYMH/ZCWJ/201808/P020180806570926081325.pdf (in Chinese); State Taxation Administration, Civil Aviation Administration of China, National Development and Reform Commission, Supreme Court, Ministry of Finance et al., '国家发展改革委 民航局 中央文明办 最高人民法院 财政部 人力资源社会保障部 税务总局 证监会 关于在一定期限内适当限制特定严重失信人乘坐民用航空器 推动社会信用体系建设的意见' ('Opinions on Promoting Building of Social Credit System by Appropriately Restricting Specific Seriously Dishonest Persons from Taking Civil Aircraft within Certain Periods'), 2018, www.chinatax.gov.cn/n810341/n810755/c3359637/content.html (in Chinese); see also Trivium China, *supra* n 2, 20.

spread rumours online.³⁹ The consequence of getting on different blacklists varies: for instance passengers who are blacklisted in the CAAC's blacklist are limited in their possibility of air travel, while people blacklisted by the CCAC are limited in their internet use.⁴⁰

Since the beginning of these experiments, there have been efforts to coordinate the management of such lists and their consequences. In 2015, the National Public Credit Information Centre, under the guidance of the National Development and Reform Commission (NDRC) and the PBoC, has created the 'National Credit Information Sharing Platform' (NCISP), whose online portal, CreditChina, is a publicly available central database of social credit files on citizens and corporations collected by several other agencies.⁴¹ In the same year, the NDRC launched the Unified Social Credit Number, an 18-digit identifier which replaced traditional business license numbers and allowed the collection of unified information on China-registered companies.⁴² In 2016, the State Council issued an opinion inviting state agencies to sign memoranda of collaboration.⁴³ Since then, many courts and governmental agencies have signed agreements to share data and jointly punish (and sometimes reward) people

39 Office of the Central Cyberspace Affairs Commissions, '互联网信息服务严重失信主体信用信息管理办法(征求意见稿)' ('Measures for the Management of Credit Information of Internet Information Services Seriously Dishonest Subjects (Draft for Soliciting Opinions)'), 22 July 2019, www.cac.gov.cn/2019-07/22/c_1124782573.htmRUE? (in Chinese).

40 Liu, *supra* n 10, 24.

41 See Credit China, '信用中国' ('Credit China'), 2020, www.creditchina.gov.cn (in Chinese); see also Arsène, *supra* n 13, 12–13.

42 National Development and Reform Commission, '法人和其他组织统一社会信用代码制度建设总体方案' ('Comprehensive Plan for Introducing a Unified Social Credit Number System for Legal Entities and other Organizations'), 2015, www.sdpc.gov.cn/zc/zcqt/201506/t20150623_696786.html (in Chinese).

43 See Chinese State Council, 'Guiding Opinions concerning Establishing and Perfecting Incentives for Promise-keeping and Joint Punishment Systems for Trust-Breaking, and Accelerating the Construction of Social Sincerity', 30 May 2016, <https://chinacopyrightandmedia.wordpress.com/2016/05/30/state-council-guiding-opinions-concerning-establishing-and-perfecting-incentives-for-promise-keeping-and-joint-punishment-systems-for-trust-breaking-and-accelerating-the-construction-of-social-sincer/> (in English); see also Chinese State Council (General Office), '国务院办公厅关于加快推进社会信用体系建设构建以信用为基础的新型监管机制的指导意见' ('Guiding Opinions on Accelerating the Construction of a Social Credit System and Building up a New Credit-Based Regulatory Mechanism'), 9 July 2019, www.gov.cn/zhengce/content/2019-07/16/content_5410120.htm (in Chinese).

on different black and red lists.⁴⁴ While these systems contain a wide range of information, they are neither high-tech nor generate new data.⁴⁵

3.3 *Cities' Social Credit Systems*

At the local level, experiments by cities with the scs started in the early 2000s and multiplied soon after the publication, in 2007, of the State Council's Guiding Opinions Concerning the Construction of a Social Credit System.⁴⁶ Actually, the experiments commenced at different levels of Chinese territorial administration. Under the 1982 Constitution China is divided into autonomous regions, provinces and municipalities (such as Beijing and Shanghai) that are directly under the Central Government; provinces are further divided into autonomous prefectures, counties, autonomous counties and cities.⁴⁷ Following the State Council's Guiding Opinions of 2007 and 2014,⁴⁸ many provinces, prefectures, counties and cities issued their plans about a social credit system. We are however not interested in all these wide-ranging plans, but rather in the experiments which took place at the lower level, in cities, since these experiments have attracted a great deal of attention by Western media and literature.

The first municipal attempts of setting up scss made their appearance at the beginning of the 2000s, and were mostly conceived as systems for measuring companies' reliability in light of promoting trust and efficiency in trade.⁴⁹ What is widely regarded as the first trial of a scs applying to the behaviour of local citizens (rather than businesses) was launched in 2010 by Suining, a county-level city in the Jiangsu province (with a population of approximately 1.4 M persons). The Suining social credit system, with its heavy-handed rewards and punishments, is commonly reported as a failure. Residents and state media accused it of being based on unfair and arbitrary criteria and of being similar to the infamous 'good citizens' certificates issued by Japan during its war-time occupation of China.⁵⁰

44 Cf Trivium China, *supra* n 2, 17–20; Chen, Ching-Fu, Han-Wei, *supra* n 3, 17–20; Creemers, *supra* n 10, 13–15.

45 Trivium China, *supra* n 2, 11.

46 See Chinese State Council, *supra* n 15.

47 Article 30(1)–(2) of the 1982 Constitution. Under Article 30(3) of the Constitution, counties, autonomous counties and cities are further divided into townships and towns.

48 See Chinese State Council, *supra* n 15; Chinese State Council, *supra* n 1.

49 See Chengdu, '成都市企业信用信息管理办法' ('Management Measure of Chengdu Municipality Enterprise Credit Information'), 29 March 2003; Anshan, '鞍山市企业信用信息管理暂行办法' ('Interim Measure of Anshan Municipality on Enterprise Credit Information Management'), 23 September 2004.

50 Cf Trivium China, *supra* n 2, 34; Liu, *supra* n 10, 25; Creemers, *supra* n 10, 10; von Blomberg, *supra* n 10, 91–92.

After the publication of the 2014 Planning Outline,⁵¹ the first city to launch its own quantified social credit scoring system was Rongcheng, a seaport county-level city in the Shandong province; the initiative raised much less controversy than the Suining experiment.⁵² The Rongcheng point-based system accorded to each citizen 1,000 points and added or subtracted points for any good/bad actions. Citizens with more than 1,050 point were ranked AAA (exemplary citizens), while those with less than 549 points were ranked the lowest possible category, D (dishonest citizens).⁵³ Since then, several other cities have adopted their own social credit systems, with many following the Rongcheng's precedent.

In 2017, the NDRC issued a list of twelve cities, including Rongcheng, which were selected as being 'model cities' "to take the lead in breaking through key difficulties and [...] promote excellent experience".⁵⁴ This was followed, in 2019, by the publication of a second list of an additional sixteen 'model cities'.⁵⁵ Many other cities not included in the list have adopted their own version of the SCS, associating good performance with access to public benefits (e.g., public transportation discounts, increased borrowing limits in public libraries, fast tracks for governmental services) and bad performance with denial of benefits.⁵⁶ It seems that the NDRC's strategy is to let cities test their own social credit systems and then assess possible further steps, which could include confirming the existing diversity of pilot programs, integrating them in a unified inter-connected system, or picking up one model and making it applicable nationwide.⁵⁷

⁵¹ Chinese State Council, *supra* n 1.

⁵² See, among the many, Dubois de Prisque, *supra* n 10, 31–32; Liu, *supra* n 10, 26.

⁵³ See Rongcheng People's Government, '荣成市社会成员信用积分和信用评价管理办法' ('Measures for the Management of Credit Points and Credit Evaluation of Social Members in Rongcheng'), 2019, www.rongcheng.gov.cn/module/download/downloadfile.jsp?classid=-1&filename=1902151651185292977.pdf (in Chinese). For a detailed overview of the Rongcheng's experiment, see Dubois de Prisque, *supra* n 10, 31–32.

⁵⁴ National Development and Reform Commission, '首批社会信用体系建设示范城市名单的通知' ('Notice of the First Batch of Social Credit System Construction Model Cities'), December 2017, www.ndrc.gov.cn/xxgk/zcfb/tz/201801/t20180109_962643.html (in Chinese).

⁵⁵ National Development and Reform Commission, '第二批社会信用体系建设示范城市(区)名单的通知' ('The second batch of social credit system construction demonstration cities (districts)'), August 2019, www.ndrc.gov.cn/xxgk/zcfb/tz/201908/t20190813_962496.html (in Chinese).

⁵⁶ See Liu, *supra* n 10, 26; Sîthigh and Siems, *supra* n 17, 1050–1052.

⁵⁷ This is noted by many: see, e.g., Dubois de Prisque, *supra* n 10, 31; Loubere and Brehm, *supra* n 2, 143.

Such local experiments are often quoted by Western media and literature as illustrations of the Chinese government's progressive establishment of a high-tech system of total surveillance through measurement and control of social behaviour. The following analysis is meant to show that these claims are deprived of any factual basis. On the one hand, SCSS of model cities differ as to their scope and form. As many as half of them lack any form of scoring; even cities which have a scoring mechanism build it in different ways. On the other hand, two common traits of these SCS experiments are that they provide interested parties access and correction rights and that they make little or no use of digital technologies. The majority of SCS regulations have quite a sophisticated infrastructure allowing interested parties to access their data, rectify them when incorrect and prevent third parties from viewing them. Further, current SCSS are relatively low-tech, being little more than electronic and centralized archives of information recorded by public authorities. As the following analysis aims to show, there is no evidence that data are either gathered or processed by algorithms or AI technologies.

4 The Research Methodology

In order to inquire into the content and form of SCSS developed by model cities, we follow an empirical path of analysis similar to that embraced by other researchers who have analyzed the text of the regulations and documents establishing SCSS at the local level.⁵⁸

Needless to say, a textual inquiry of SCS city regulations suffers from many limitations. It does not capture how the SCS works in practice and fails to give a reliable picture of the formal and informal ways in which the SCS is managed on a daily basis. Further, a textual analysis implies the adoption of a distant reading approach, which refrains as much as possible from judging the substantial fairness of the SCS and from assessing its real-world present and future consequences. Yet, tracking how SCSS are concretely applied and evaluating their fairness and risks would prove a daunting task for anyone, requiring many competences, energy and resources. We therefore focus on a textual

⁵⁸ Liu, *supra* n 10; Trivium China, *supra* n 2, 25–31; Chen and Cheung, *supra* n 3; others have by contrast focused on the data and scores concretely collected by a city with SCS: see, with reference to the city of Beijing, S. Engelmann, M. Chen, F. Fischer, C. Kao, J. Grossklags, 'Clear Sanctions, Vague Rewards: How China's Social Credit System Currently Defines Good and Bad Behavior', *Proceedings of the Conference on Fairness, Accountability, and Transparency FAT** '19 (2019) 69–78.

TABLE 1 The Twenty-Eight Model Cities

NDRC 2017	Hangzhou	Nanjing	Suqian	Suzhou
	Xiamen	Huizhou	Wenzhou	Yiwu
	Rongcheng	Weifang	Weihai	Chengdu
NDRC 2019	Qingdao	Wuhan	Anshan	Pudong New Area
	Jia ding	Wuxi	Hefei	Huaibei
	Wuhu	Anqing	Fuzhou	Zhengzhou
	Xianning	Yichang	Putian	Luzhou

reading of the main legal sources governing the SCSS of cities. In spite of the several shortcomings stemming from this choice, we believe that an empirical exploration of the legal regulations governing these SCSS provides a useful perspective to understand the contents and functions officially assigned to these experiments as well as the approach of local authorities in adopting them.

Other limitations of the study are due to our methodological choices. Given the large number of cities which have embraced the SCS, we had to restrict our analysis to a selected number of them. We focused on the twenty-eight model cities identified by the NDRC in 2017 and 2019. A list of these cities is provided in Table 1.⁵⁹

For each of these cities, we analyzed general regulations setting up the local SCS. As we did for the word ‘city’, we understood the notion of ‘regulation’ in a broad sense. Under Article 82 of the 2015 Chinese Legislation Law, only “the People’s governments of provinces, autonomous regions, directly governed municipalities, districted cities and autonomous prefectures, may enact rules on the basis of laws and administrative regulations, as well as local regulations of their respective provinces, autonomous regions or directly governed municipalities”. This means that acts regulating SCS issued by small cities, such as Rongcheng,⁶⁰ are not technically ‘regulations’ under the law, but rather administrative measures. Yet, for the limited purpose of this paper, we consider them as ‘regulations’ as well. Further, many of the cities herein analysed issued many regulations/measures, plans and opinions about how to build SCS, sometimes focusing on specific activities and industries (e.g., social credit scores

59 It should be noted that Pudong New Area and Jia ding are not cities, but districts of the municipality of Shanghai (which, technically speaking, is a municipality ‘directly under the Central Government’ as per Article 30(1) of the 1982 Constitution of the People’s Republic of China).

60 See also above, section 3.3.

for workers or for food companies working in special sectors). When multiple regulations were available, we chose to devote our attention to the ones with the broadest scope (eventually complemented by the most recent texts). This however implied a great deal of discretionary decisions about what regulations were taken into account.⁶¹ An additional caveat is related to the circumstance that we could not retrieve general regulations from all twenty-eight

61 The list of the acts considered (all in Chinese) is the following: Hangzhou, ‘杭州市公共信用信息管理办法’ (‘Management Measures of Hangzhou Municipality Upon Public Social Credit Information’), 16 August 2016; Nanjing, ‘南京市社会信用条例’ (‘Nanjing Social Credit Regulation’), 27 December 2019; Suqian, ‘宿迁市关于个人信用积分体系建设与积分等级评价试行规定’ (‘Experimental Rules of Suqian Municipality about personal social credit scoring system installation and score degrees evaluation’), 7 March 2018; Suzhou, ‘苏州市公共信用信息归集和使用管理办法（试行）的通知’ (‘Management Measures of Suzhou Municipalities on Public Credit Information Gathering and Use’), 17 July 2014; Xiamen, ‘厦门经济特区社会信用条例’ (‘Xiamen Social Credit Regulation’), 29 April 2019; Huizhou, ‘惠州市社会信用征集和管理试行办法’ (‘Huizhou City Social Credit Collection and Implementation Interim Measures’), 20 June 2013; Wenzhou, ‘温州市信用信息管理暂行办法’ (‘Interim measures of Wenzhou Municipality on Credit Information Management’), 1 January 2015; Yiwu, ‘义乌市公共信用信息归集和使用试行办法’ (‘Interim Measures of Yiwu Municipality upon Public Credit Information Gathering and Use’), 21 December 2015; Rongcheng, ‘荣成市社会法人和自然人征信管理试行办法’ (‘Interim Measures of Rongcheng Municipality on Legal Persons and Natural Persons Credit Information Management’), 1 January 2014 (but see also Rongcheng, ‘荣成市社会成员信用积分和信用评价管理办法’ (‘Management Measure of Rongcheng Municipality on Credit Scoring and Credit Evaluation of Its Social Members’), 17 January 2019; Weihai, ‘威海市公共信用信息管理办法’ (‘Management Measures of Weihai Municipality Upon Public Credit Information’), 17 November 2016; Chengdu, ‘成都市公共信用信息管理暂行办法’ (‘Interim Management Measures of Chengdu Municipality Upon Public Credit Information’), 15 May 2017 (but see also Chengdu, ‘成都市企业信用信息管理办法’ (‘Management Measure of Chengdu Municipality Enterprise Credit Information’), 29 March 2003; Chengdu, ‘成都市企业信用信息收集和公布管理规定’ (‘Management measures of Chengdu Municipality upon Enterprises credit information gathering and Publishing’), 15 April 2015); Qingdao, ‘青岛市公共信用信息管理暂行办法’ (‘Interim Management Measures of Qingdao Municipality Upon Public Credit Information’), 29 April 2016; Wuhan, ‘武汉市公共信用信息管理办法’ (‘Measure of Wuhan Municipality on Public Credit Information Management’), 12 June 2016; Anshan, ‘鞍山市企业信用信息管理暂行办法’ (‘Interim Measure of Anshan Municipality on Enterprise Credit Information Management’), 23 September 2004; Shanghai (Pudong New Area and Jia ding), ‘上海市社会信用条例’ (‘Shanghai Social Credit Regulation’), 23 June 2017; Hefei, ‘合肥市公共信用信息征集和使用管理暂行办法’ (‘Interim Management Measure of Hefei Municipality on Public Credit Information Gathering and Use’), 8 October 2016; Huaibei, ‘淮北市公共信用信息征集共享使用实施细则（试行）’ (‘Interim implementing rules of Huaibei Municipality on gathering and using public credit

model cities. For seven cities (i.e., Weifang, Wuxi, Anqing, Xianning, Yichang, Putian and Luzhou), it proved impossible to collect information from servers not based in China. A similar observation applies to the scoring model applied by some cities,⁶² which could not be accessed because the city's database and its information are open only to city residents – a feature that, as we will see in more detail below (section 5.6), works as a technological guarantee for limiting the circulation of SCS information beyond the city's borders.

5 SCS in the Twenty-Eight Model Cities: the Data

In spite of the above limitations, we were able to gather significant information. We will start by an overview of the cities selected by the government as models, in terms of their location, population size and per capita GDP (section 5.1). We will then analyze the subjective scope of SCS regulations in these model cities, as well as the presence/absence of a scoring mechanism (section 5.2). Section 5.3 will explain which data make up the notion of social credit, while section 5.4 will explore how information is collected and treated. Section 5.5 will go into more detail about the way in which scoring mechanisms, when available, are built. Section 5.6 will be devoted to the effects associated with high or low levels of social credit/scores and to the possible circulation and other uses of social credit/scores. Section 5.7 will highlight the prerogatives and remedies available to social credit holders to contain the use of social credit/scores and to challenge their results.

5.1 *Model Cities' Geography, Population and GDP*

What are the main features of the twenty-eight cities included by the Chinese government in the 2017 and in 2019 lists? A common trait is their position in the country: the twenty-eight selected cities come from eleven different provinces,

information'), 25 December 2015; Wuhu, '芜湖市公共信用信息征集共享使用暂行办法' ('Interim measure of Wuhu Municipality on Public Credit Information Gathering and Sharing Use'), 12 November 2016; Fuzhou, '福州市公共信用信息管理暂行办法' ('Interim measure of Fuzhou municipality on public credit information management'), 6 November 2017 (but see also Fuzhou, '福州市社会信用管理办法' ('Management Measure of Fuzhou Social Credit') 24 May 2019; Zhengzhou, '郑州市公共信用信息管理暂行办法' ('Interim measure of Zhengzhou municipality upon public credit information management'), 11 July 2017.

62 Notably, this is the case of the scoring models applied in Hangzhou, Wuhu and Fuzhou. See also below, section 5.5.

plus the metropolitan area of Shanghai, which are mostly located in the richest part of the country, that is, the East Coast.

MAP 1 The Geography of Model Cities



Besides their location on the East Coast, the majority of the cities selected have in common their relatively big size and population. In terms of population, as shown in Table 2, the list includes six super-cities, with a population higher than 5 M but lower than 10 M,⁶³ seventeen big cities, with a population higher than 1 but lower than 5 M,⁶⁴ and five medium-sized cities, with a population between 0.5 M and 1 M.⁶⁵ The size of the cities contained in the second governmental list is more uniform; there are marked differences in size among the cities in the first group, which comprises, at one extreme, Weihai (645,000 inhabitants) and, at the other extreme, Chengdu (8,901,100 inhabitants). This enhanced focus on big and medium-sized cities suggests that, in

63 The super-cities included in the two lists are Hangzhou, Nanjing, Chengdu, Wuhan, Pudong New Area, Anqing, among which Chengdu and Wuhan have a population higher than 5 M, with roughly 9 M and 7.5 M residents respectively.

64 Among the big cities, Suzhou, Xiamen, Huizhou, Wenzhou, Weifang, Qingdao, Anshan, Jia ding, Wuxi, Hefei, Wuhu, Fuzhou, Zhengzhou, Xianning, Wichang, Putian, Luzhou.

65 The medium-sized cities are Suqian, Yiwu, Rongcheng, Weihai, Huaibei.

TABLE 2 Population and GDP of the Twenty-Eight Model Cities

NDRC 2017	Province	Population (as of 2010)*	GDP per capita (as of 2018)**	scs Regulation Date
Hangzhou	Zhejiang	5,849,537	140	16 August 2016
Nanjing	Jiangsu	5,827,888	153	27 December 2019
Suqian	Jiangsu	783,376	56	7 March 2018
Suzhou	Jiangsu	4,083,923	28	17 July 2014
Xiamen	Fujian	3,119,110	118	29 April 2019
Huizhou	Guangdong	1,807,858	85	20 June 2013
Wenzhou	Zhejiang	2,686,825	65	1 January 2015
Yiwu	Zhejiang	878,903	N/A	21 December 2015
Rongcheng	Shandong	670,000	N/A	1 January 2014
Weifang	Shandong	1,261,582	66	9 January 2018
Weihai	Shandong	645,000	124	17 November 2016
Chengdu	Sichuan	8,901,100	95	15 May 2017
NDRC 2019	Province	Population (as of 2010)*	GDP per capita (as of 2018)**	scs Regulation Date
Qingdao	Shandong	4,556,077	128	29 April 2016
Wuhan	Hubei	7,541,527	135	12 June 2016
Anshan	Liaoning	1,504,996	44	23 September 2004
Pudong New Area	Shanghai	5,047,000	135	23 June 2017
Jia ding	Shanghai	1,472,000	135	23 June 2017
Wuxi	Hubei	2,757,736	174	N/A
Hefei	Anhui	3,098,727	97	8 October 2016
HuaiBei	Anhui	854,696	42	25 December 2015
Wuhu	Anhui	1,108,087	88	12 November 2016
Anqing	Anhui	5,311,000	37	N/A
Fuzhou	Fujian	3,102,421	34	6 November 2017
Zhengzhou	Henan	3,677,032	101	11 July 2017
Xianning	Hubei	2,462,583	53	N/A
Yichang	Jiangxi	1,049,363	98	N/A
Putian	Fujian	1,107,199	77	N/A
Luzhou	Sichuan	1,086,000	39	N/A

*population extracted from <http://www.citypopulation.de/en/china/cities/>, relying upon (2010) China National Bureau of Statistics (except for Rongcheng, Weihai, Pudong New Area, Jia ding, Anqing Xianning and Luzhou, whose population data were obtained from <https://www.ceic-data.com/en/china/>).

** GDP per capita extracted from <https://www.ceicdata.com/en/china/gross-domestic-product-per-capita-prefecture-level-city> and expressed in thousands of RMB. Data not available for Yiwu and Rongcheng. The data for Pudong New Area and Jia ding are available for Shanghai as a whole.

the government's view, social credit is increasingly seen as an instrument for easing the objective management of public administration and the assessment of interpersonal trust in rapidly urbanized environments where social mobility and accelerated growth have created disconnected communities of strangers.⁶⁶

As to their per capita GDP, seventeen cities have a GDP per capita equal to or higher than the national average (which, in 2018, was equal to 66,000 RMB⁶⁷) and nine cities are below the national average (data are not available for two cities).

Another interesting clue is related to the date in which model cities enacted their general regulation on SCSS. Two cities, Chengdu and Anshan, adopted a regulation on corporate credit information which is an important part of the SCS as early as, 2003 and 2004, respectively, when nation-wide discussions about social credit were just starting. But the majority of model cities enacted their regulations between 2013 and 2019, with a peak of seven cities promulgating a general SCS regulation in 2016 (see Table 2). Four of the twelve cities included in the first governmental list of 2017 had no general SCS regulation in place before their inclusion in the list; at least five of the sixteen cities included in the second list had such regulations in place at least one year before the first governmental list was published.

The fact that the SCSS included in the two governmental lists have followed different patterns of development, if combined with the relative variety in the size and wealth of the selected cities, might be understood in light of the experimental character of the government's initiative and, more in general, of the Chinese approach to legislation, which blends bottom up coordination with top down reform.⁶⁸ This would explain why, instead of focusing only on

66 Among the many, W. Li, L. Fan, Li. Zhang, P. Diao, Y. Cui, 'Urbanization and Improvements in People's Living Standards: An Overview', in P. Li (ed), *Urbanization and Its Impact in Contemporary China* (Singapore: Springer, 2019), 21, 46–53; H. Zhu, 'Trust', in X. Zhou (ed), *Inner Experience of the Chinese People: Globalization, Social Transformation, and the Evolution of Social Mentality* (Singapore: Springer, 2017), 73–86; S. Ali, 'The jurisprudence of responsive mediation: an empirical examination of Chinese people's mediation in action', *Journal of Legal Pluralism and Unofficial Law* 45 (2013) 227–248; S. Wong, 'Gender Relations, Migration, and Urban Social Capital in Hong Kong', in J. Lewandowski and G. Streich (eds), *Urban Social Capital. Civil Society and City Life* (Farnham: Ashgate, 2012), 265–276.

67 See www.ceicdata.com/en/country/china. In 2019 national GDP per capita raised to 72,000 RMB.

68 See for instance M. Martinek, *Experimental Legislation in China between Efficiency and Legality. The Delegated Legislative Power of the Shenzhen Special Economic Zone* (Cham: Springer, 2018), 185–225; Y. Bi, 'Experimentalist approach of Chinese legislation model:

cities with a well-established SCS, the government has picked up cities that were (of different size and wealth, and) in different stages of development of their local SCSs.

5.2 *SCSs Regulations Scope and Scoring*

As we just noticed, the older regulated experiments of SCSs amidst the model cities are the ones carried out by the cities of Chengdu and Anshan, which issued a regulation on corporate social credit respectively in 2003 and 2004. Probably because of the period in which they were issued – in which the notion of social credit was mostly directed at improving the country's economic reliability, and the regulatory environment regarding social credit was nascent –, these older regulations are remarkably different in scope from newer ones. Most notably, as evidenced in Table 3, Anshan's SCS regulation only applies to legal persons, while all the other SCS regulations, including the current general Chengdu's SCS regulation, focus on both natural and legal persons (with the only exception of Suqian, whose SCS regulation applies to natural persons only), reflecting the progressive broadening of the notion of social credit and its increased emphasis on social, rather than purely economic, morality.

Although precise definitions in SCSs regulations vary, the notion of 'legal persons' covered by the regulations include profit-oriented and non-profit oriented entities, as originally defined by Article 36 of the General Principles of Civil Law of 1986 and now defined by Article 57 and following of the Chinese Civil Code of 2020,⁶⁹ provided that such entities have their principal place of business (that is, their domicile under Article 63 of the Chinese Civil Code) in the city's administrative zone.⁷⁰ Natural persons are by contrast individual human beings, as originally defined by Article 9 of the General Principles of Civil Law of 1986 and now by Article 13 of the Chinese Civil Code, who are domiciled in the city's municipal administrative zone.⁷¹ A few regulations further specify that only people older than 18 years old⁷² or people with full

From passive response to institutional design', *Theory and Practice of Legislation* 3 (2015) 141–167; J. Chen, *Towards an Understanding of Chinese Law, Its Nature and Development* (Kluwer: The Hague, 1999), 122–125.

69 For an analysis of the meaning of such notions, see M. Timoteo, 'China Codifies. The First Book of the Civil Code between Western Models to Chinese Characteristics', *Opinio Juris in Comparatione* 1(1) (2018) 24–44, at 32–33; Chen, *supra* n 69, 230–236.

70 See for instance Yiwu, *supra* n 61, Article 3; Chengdu (2015), *supra* n 61, Article 6.

71 See, e.g., Yiwu, *supra* n 61, Article 3.

72 Cf Nanjing, *supra* n 61, Article 2; Yiwu, *supra* n 61, Article 3.

TABLE 3 Dates and Scopes of SCS Regulations in the Twenty-Eight Model Cities

NDRC 2017	SCS Regulation Date	SCS Regulation Scope*	SCS Regulation Scoring**
Hangzhou	16 August 2016	N + L	YES (N)
Nanjing	27 December 2019	N + L	NO
Suqian	7 March 2018	N	YES (N)
Suzhou	17 July 2014	N + L	YES (N)
Xiamen	29 April 2019	N + L	YES (N)
Huizhou	20 June 2013	N + L	NO
Wenzhou	1 January 2015	N + L	YES (N)
Yiwu	21 December 2015	N + L	YES (N)
Rongcheng	1 January 2014	N + L	YES (N)
Weifang	9 January 2018	N/A	N/A
Weihai	17 November 2016	N + L	YES (N)
Chengdu	15 May 2017	N + L	YES (L)
NDRC 2019			
Qingdao	29 April 2016	N + L	NO
Wuhan	12 June 2016	N + L	NO
Anshan	23 September 2004	L	NO
Pudong	23 June 2017	N + L	NO
New Area			
Jia ding	23 June 2017	N + L	NO
Wuxi	N/A	N/A	N/A
Hefei	8 October 2016	N + L	NO
Huaibei	25 December 2015	N + L	NO
Wuhu	12 November 2016	N + L	YES (N)
Anqing	N/A	N/A	N/A
Fuzhou	6 November 2017	N + L	YES (N)
Zhengzhou	11 July 2017	N + L	NO
Xianning	N/A	N/A	N/A
Yichang	N/A	N/A	N/A
Putian	N/A	N/A	N/A
Luzhou	N/A	N/A	N/A

*‘N’ stands for natural persons and ‘L’ for legal persons. ‘N/A’ means that no information could be retrieved.

** ‘NO’ and ‘YES’ stand respectively for the absence or presence of a form of scoring. ‘(N)’ and ‘(L)’ after ‘YES’ denote whether the scoring applies to natural or legal persons. ‘N/A’ means that no information could be retrieved.

capacity⁷³ qualify. The personal/territorial limitation makes it clear that cities' social credit only applies to local entities and resident population, considered as individuals rather than as families or other forms of grouping. Whoever is not domiciled in the city is not included in the SCS (more accurately, they might be included in another city's SCS). The emphasis on a person's domicile suggests that these SCSs are conceived as tools for localized management of social behaviour rather than as nationwide instruments for unified social governance. This is also confirmed by another feature of these SCSs, that is, their reliance (or not) on social scoring.

The results of our survey, inasmuch as the scoring is concerned, are quite surprising. Of the twenty-one cities on which we have clear data, ten cities keep track of the social credit of entities and/or individuals, but do not express it in a single, summarized form. By contrast, eleven other cities – mostly belonging to the first governmental list – have adopted a form of scoring, that is, a formalized way to express, either in numbers, letters or rating categories, the accomplishments of the evaluated subjects. With the exception of Hangzhou and Chengdu, which are super-cities of almost 6 and 9 M resident population, respectively, cities adopting the scoring are (by Chinese standards) medium-sized cities with a resident population around or below 4 M. In other words, Hangzhou and Chengdu aside, all other super-cities and big cities in the government lists have SCSs in place but do not embrace social credit scoring. Further, among the cities which adopt a scoring system, Chengdu applies the scoring to legal persons only, while all other cities limit the scoring to natural persons only. Most of the cities embracing a scoring system are included in the first governmental list (where nine cities out of eleven have a scoring system – data are not available for Weifang); cities included in the second list display a remarkable tendency not to have any form of scoring (only two out of eight cities have a scoring system – data are not available for six cities⁷⁴).

All of the above tells us that social credit is one thing, and social credit scoring is quite another. It seems that, contrary to Western cries against China's turn to a scored society, neither the model cities nor the Chinese government favour the use of scores. When cities adopt scores, they almost invariably focus on individuals rather than on organizations (which are nowadays covered by many other SCSs initiatives: see sections 3.1 and 3.2). The attention is once again on the social behaviour of individuals rather than on corporate economic activity.

73 Cf Hangzhou, *supra* n 61, Article 9; Xiamen, *supra* n 61, Article 2; Huizhou, *supra* n 61, Article 2; Wuhan, *supra* n 61, Article 11; Shanghai, *supra* n 61, Article 2.

74 Wuxi, Anqing, Xianning, Yichang, Putian, Luzhou.

We will go back to the scoring issue and the way in which it is expressed below (section 5.5). However, before we get there, we need to understand which data make up the notion of social credit (and its possible translation into a score) and how they are collected and treated.

5.3 *The Ingredients of Cities' Social Credit Systems*

As to which data is fed into social credit and its possible scoring mechanisms, all scs regulations make reference, although with slightly different wordings, to information gathered by public institutions and entities in the exercise of their powers about the natural and legal persons domiciled in the city's administrative zone. Obviously, the notion of 'public institutions and entities' should be understood broadly and in light of China's public-oriented vision of corporate and association law and preeminence of state-directed economy.⁷⁵

For instance, Yiwu's scs regulation states that social credit refers to "the records about legal persons, other organizations as well as personal credit of individuals that administrative departments and other agencies which are entrusted by the law and administrative regulations with public affair management came to possess when they are taking up their responsibilities and providing services".⁷⁶ Similarly, Hangzhou scs regulation defines social credit as "the information that administrative departments and other agencies who are bestowed with the function of public affair management by law and administrative regulations, as well as public or social entities (hereafter "information providers subjects") have acquired or produced to identify natural persons, legal persons and other organizations (hereafter "information subjects") when they are taking up their responsibilities and providing services".⁷⁷ A similar wording recurs in a number of other regulations.⁷⁸

75 Among the many, L. Che, *China's State-Directed Economy and the International Order* (Singapore: Springer, 2019); H. Jiang, 'Freedom of Contract under State Supervision', *George Mason Journal of International Commercial Law* 7 (2016) 202–254; X. Yu, 'State Legalism and the Public/Private Divide in Chinese Legal Development', *Theoretical Inquiries in Law* 15 (2014) 27–52; I. Castellucci, *Rule of Law and Legal Complexity in the People's Republic of China* (Trento: Università degli Studi di Trento, 2012), 102–113; B. Tip, 'Privatisation', in C. Tubilewicz (ed), *Critical Issues in Contemporary China* (Abingdon: Routledge, 2006), 49–78; Chen, *supra* n 68, 43–48.

76 Yiwu, *supra* n 61, Article 3.

77 Hangzhou, *supra* n 61, Article 3.

78 See, for instance, in the first governmental list, Nanjing, *supra* n 61, Article 2; Suqian, *supra* n 61, Article 8; Suzhou, *supra* n 61, Article 3; Huizhou, *supra* n 61, Article 2; Wenzhou, *supra* n 61, Article 9; as to the model cities included in the second governmental list, cf Qingdao, *supra* n 61, Article 3; Wuhan, *supra* n 61, Article 3; Anshan, *supra* n 61, Article 3; Shanghai,

Concretely, such information mostly include (i) recorded data about persons' identity (such as hukou – residence registration –, age, marital status, profession and social security status for natural persons; unified social credit number and shareholder structure for legal persons), (ii) data collected by public agencies and courts about legal and social behaviour (such as criminal sanctions, tax evasions, administrative fines, non-compliance with legal judgments, but also certificates, degrees, prizes, patents, volunteering activities), and (iii) economic data about payment defaults and contractual breaches. In other words, the information collected in the social credit record is made up of data archived by public entities about one person's identity, compliance with legal rules, commercial behaviour and, to a lesser extent, social behaviour.⁷⁹

The data collected in the SCS can largely be qualified as public, inasmuch as they are reflected in materials, records and documents held by public bodies and agencies. In this regard, it should also be kept in mind that China does not only embrace a broad conception of public entities and public powers, but also lacks a general legal framework about individual privacy comparable to what, in the European Union, is nowadays the General Data Protection Regulation.⁸⁰ For some time, the most comprehensive text in this regard has been the Chinese Cybersecurity Law of 2016, which however applies to internet network operators and businesses, rather than to public authorities.⁸¹ In 2020, the newly adopted Chinese Civil Code has introduced a few norms about natural persons' personal information and privacy.⁸² The new norms, inter alia, prohibit organizations and individuals from “unlawfully collecting, using, processing or transferring any personal information of natural persons”,⁸³ and provide that “whoever manages natural persons' personal information should abide by the principles of legality, reasonableness and necessity [...] and should

supra n 61, Article 8; Hefei, *supra* n 61, Article 3; HuaiBei, *supra* n 61, Article 2; Fuzhou (2017), *supra* n 61, Article 2; Zhengzhou, *supra* n 61, Article 2.

79 J. Daum, 'Untrustworthy: Social Credit Isn't What You Think It Is', *Verfassungsblog*, 27 June 2019, <https://verfassungsblog.de/untrustworthy-social-credit-isnt-what-you-think-it-is/> (also published in *EUI Working Paper RSCAS* 94 (2019) 39–41).

80 Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC (General Data Protection Regulation).

81 E. Leplay, 'China's Approach on Data Privacy Law: A Third Way between the U.S. and the EU?', *Penn State Journal of Law & International Affairs* 8(1) (2020) 49–117; Chen and Cheung, *supra* n 3, 372.

82 See Article 111 and Articles 1034–1038 of the Chinese Civil Code.

83 Article 111 of the Chinese Civil Code.

act with the consent of the concerned persons [...], unless law and administrative regulations provide otherwise”.⁸⁴ Yet, the scope of application of these provisions (is still to be tested in practice, and anyway) seems to concern only private-to-private relationships.⁸⁵

Considering all the above, it is quite consequential that, for the collection of social credit data, consent of the data subject is not required. What may be more surprising are the limitations and guarantees surrounding the collection and the nature of data to be harvested also in light of the fact that all scs regulations herein analyzed predate the enactment of the 2020 Civil Code.

First of all, scs regulations make it clear that, when the information gathered should be considered as private – as is most often the case with regard to commercial and economic behaviour –, the authorization of the data subject is needed to include such information in that person’s social credit record. For instance, Huizhou’s scs regulation holds that the collection of “personal credit” data “must be consented to by the information subject, unless the law and regulation provide otherwise”.⁸⁶ Nanjing scs regulation provides that “collecting market credit information must be sought with the social credit subject’s authorization or consent; inasmuch as the information involves a natural person’s personal data, the collecting activity must be consented to by the natural person involved. However, consent is not necessary for market credit information which, according to the law and regulations, must be open to the public”.⁸⁷ The notion of “personal” information in these provisions is clearly blurred, and their application might be easily circumvented by collecting generalized consent from data subjects or through dubious administrative management. Yet, it should be noted that, although in the absence of any legal requirement in this regard, many scs regulations are careful in drawing a boundary between public and personal data.

Second, some of the newest scs regulations are clear in setting up limits to what can be collected, excluding data such as religious beliefs, genes,

84 Article 1035 of the Chinese Civil Code.

85 The only provision mentioning public bodies is Article 1039 of the Chinese Civil Code, according to which ‘state bodies and other organizations performing administrative functions [...] shall keep the privacy and natural persons’ personal information confidential’.

86 Huizhou, *supra* n 61, Article 22.

87 Nanjing, *supra* n 61, Article 29; a similar provision is present in Hangzhou, *supra* n 61, Article 16; Qingdao, *supra* n 61, Article 13; Shanghai, *supra* n 61, Article 14; Zhengzhou, *supra* n 61, Article 9.

fingerprints, diseases and medical history.⁸⁸ For instance, according to Nanjing scs regulation, “private data of natural persons such as income, deposits, negotiable securities, commercial insurance, real estate, as well as taxation amounts are prohibited from collection, unless law and regulations stipulate otherwise [...]. Personal information such as religious belief, DNA, fingerprints, blood type, disease, and medical records as well as other information provided by law and regulation, are prohibited from collection”, under any circumstance.⁸⁹ Although this and similar provisions raise many doubts as to their actual implementation, the remedies in case of their violation, and the practice in cities not adopting such rules, they have to be remarked on as a substantial and self-imposed limitation for data collection.

Finally, the majority of scs regulations provide that all data – public and personal – which are highly ‘discrediting’ should be deleted after some years from the recorded behaviour, either a three or a five years time limit.⁹⁰ Some cities complement these rules by providing detailed (and shorter) time spans for the expiry of mildly discrediting information.⁹¹ The duration of positive social credit seems to be less clear. Some cities explicitly fix a time limit in this regard too,⁹² while many other cities do not specify for how long positive data are going to be stored.⁹³ In spite of such gap, the three to five-year time limit for negative information is a guarantee and its presence should be acknowledged,

88 Cf Hangzhou, *supra* n 61, Article 16; Nanjing, *supra* n 61, Article 29; Xiamen, *supra* n 61, Article 16; Weihai, *supra* n 61, Article 15; Chengdu (2017), *supra* n 61, Article 10; Qingdao, *supra* n 61, Article 13; Wuhan, *supra* n 61, Article 15; Shanghai, *supra* n 61, Article 14; Fuzhou (2017), *supra* n 61, Article 19; Fuzhou (2019), *supra* n 61, Article 11; Zhengzhou, *supra* n 61, Article 9.

89 Nanjing, *supra* n 61, Article 29.

90 A time limit of three years is adopted by Nanjing, *supra* n 61, Article 56; Wenzhou, *supra* n 61, Article 26; as to the time limit of five years, cf Hangzhou, *supra* n 61, Article 24; Suqian, *supra* n 61, Article 22; Suzhou, *supra* n 61, Article 10; Xiamen, *supra* n 61, Article 24; Huizhou, *supra* n 61, Article 20, Article 23; Yiwu, *supra* n 61, Article 13; Rongcheng (2019), *supra* n 61, Article 20(1)-(2); Weihai, *supra* n 61, Article 19; Chengdu (2015), *supra* n 61, Articles 14–15; Qingdao, *supra* n 61, Article 18; Wuhan, *supra* n 61, Article 20; Shanghai, *supra* n 61, Article 35; Hefei, *supra* n 61, Article 8; Wuhu, *supra* n 61, Article 18; Fuzhou (2017), *supra* n 61, Article 21; Zhengzhou, *supra* n 61, Article 20 – the latter for natural persons’ discredit only –.

91 Cf Suqian, *supra* n 61, Article 22; Rongcheng (2019), *supra* n 61, Article 20; Nanjing, *supra* n 61, Article 56.

92 For instance, Suqian, *supra* n 61, Article 22(4)-(5) and Rongcheng (2019), *supra* n 61, Article 20(3) determine a 1 to 5 years time-limit for the storage of positive social credit score, while Wenzhou, *supra* n 61, Article 26, applies its three years time-limit to both positive and discrediting information.

93 Devereaux and Peng, *supra* n 4, 4.

although, of course, its concrete application lies in the hands of those in charge with social credit management.⁹⁴

5.4 *Methodologies of Data Collection and Treatment*

In light of the above, it is crucial to understand who builds social credit, where the data collected come from, and how they are treated.

What all scs regulations make clear is that the establishment of social credit initiatives implies the constitution of a dedicated office and service in the city's administration. The city office charged with social credit management is often identified by scs regulations as the 'municipal credit information centre/agency'.⁹⁵ In some cases it is specified that the office's services are mostly to be rendered through a website, an electronic platform or a mobile application.⁹⁶

The municipal credit information centre gathers the data making up the notion of social credit seen in the previous section through administrative data-sharing with the public (and public-related) entities identified as information providers in the scs regulations. Such entities include administrative bodies and agencies, courts, and other organizations carrying out public and/or social services and empowered to collect and transfer data by law and administrative regulations – the latter entities include banks and energy suppliers, as well as, under some regulations, education facilities and hospitals.⁹⁷ A few scs regulations also mention, as possible information providers, "enterprises doing business"⁹⁸ and "social entities and natural persons".⁹⁹

94 For an overview of the remedies available to data subjects to challenge the information contained in scs, including the expiry of the time-limit for retaining the data, see below, section 5.7.

95 Cf Hangzhou, *supra* n 61, Article 8; Suzhou, *supra* n 61, Article 10; Huizhou, *supra* n 61, Article 2; Wenzhou, *supra* n 61, Article 9; Anshan, *supra* n 61, Article 3.

96 Cf Hangzhou, *supra* n 61, Article 8; Nanjing, *supra* n 61, Article 30; Suzhou, *supra* n 61, Article 10; Qingdao, *supra* n 61, Article 22; Anshan, *supra* n 61, Articles 11 and 13; Huaibei, *supra* n 61, Article 15; Zhengzhou, *supra* n 61, Articles 6 and 17.

97 Cf, as to the model cities included in the first governmental list, Hangzhou, *supra* n 61, Article 3; Nanjing, *supra* n 61, Article 2; Suqian, *supra* n 61, Article 8; Suzhou, *supra* n 61, Article 3; Xiamen, *supra* n 61, Article 2; Huizhou, *supra* n 61, Article 2; Wenzhou, *supra* n 61, Articles 9–10; Yiwu, *supra* n 61, Article 3; Weihai, *supra* n 61, Article 2; Chengdu (2015), *supra* n 61, Article 6; as to the model cities included in the second governmental list, cf Qingdao, *supra* n 61, Article 3; Wuhan, *supra* n 61, Article 3; Anshan, *supra* n 61, Article 3; Shanghai, *supra* n 61, Article 8; Hefei, *supra* n 61, Article 3; Huaibei, *supra* n 61, Article 2; Wuhu, *supra* n 61, Article 2; Fuzhou (2017), *supra* n 61, Article 2; Zhengzhou, *supra* n 61, Article 2.

98 Nanjing, *supra* n 61, Article 2; Huizhou, *supra* n 61, Article 2; Shanghai, *supra* n 61, Article 8; Fuzhou (2019), *supra* n 61, Article 3.

99 Wenzhou, *supra* n 61, Article 10; Suqian, *supra* n 61, Article 8, no. 5.

There are several blind spots in such definitions. While a few SCS regulations specify that data are gathered only from the *city's* administrative and judicial institutions,¹⁰⁰ the majority of SCS regulations do not pose such a limit, suggesting that their SCS might be based on the aggregation of data stemming from agencies and courts located in different places and at different levels of the state's administration. It remains unclear whether cities share their data on social credit with one another and with entities managing other forms of SCSS. Some commentators for instance argue that municipal credit information centres share data with one another¹⁰¹ and that financial ratings collected by semi-private companies (such as the ones mentioned above, 3.1) are shared with municipalities and included in the city's SCS.¹⁰² Others by contrast note that there is no evidence of such data-sharing practice.¹⁰³ Actually, much seems to depend on actual administrative practices of municipal credit information centres and on the latter's interpretation of the identity of information providers.

SCS regulations usually speak very little of the methodology of data collection and treatment. This is hardly surprising if one keeps in mind that cities' SCSS are mostly centralized electronic archives of public (or quasi-public) records of legal and natural persons. In other words, in spite of outcries by foreign observers of total state surveillance, cities' SCSS are "actually pretty low-tech [...] much of the new information is being gathered not by a cutting-edge, cloud-based AI, but is entered manually or via Excel spreadsheets".¹⁰⁴ There is no evidence of municipal credit information centres' reliance on artificial intelligence (AI) to collect social credit data, which is rather gathered through digital data sharing between public bodies and agencies. While, in their daily administration, cities might use real-time data, camera surveillance, facial recognition, automated decision making programs and other artificial intelligence (AI) technologies to collect data and issue fines, this is done by public bodies and agencies in the exercise of their functions. It is only the ensuing information that might end up in the municipal credit information centres' database keeping track of legal and natural persons' behaviour and recording it in electronic format. Nor is there any evidence that cities' SCSS rely on machine learning or big-data analysis to treat the information collected

100 See Wenzhou, *supra* n 61, Article 9; Chengdu (2015), *supra* n 61, Article 6; Wuhan, *supra* n 61, Article 3; Hefei, *supra* n 61, Article 3.

101 As claimed by Chen and Cheung, *supra* n 3, 365–369.

102 Cf Dubois de Prisque, *supra* n 10, 33–34; Chen and Cheung, *supra* n 3, 367–369; Ahmed, *supra* n 3, 55.

103 Liu, *supra* n 10, 35–36.

104 Trivium China, *supra* n 2, 49; on the same lines, see Arsène, *supra* n 13, 7–8.

and work on them from a forward-looking perspective.¹⁰⁵ The only evidenced use of digital technologies in the treatment of the data collected comes from the relatively simple and inward-looking publication of the information in the electronic format on the city's official website or dedicated platforms/applications,¹⁰⁶ and from their inclusion in the algorithms underlying the scoring system, to which we now turn.

5.5 *Building a Score*

As said above, in section 5.2, only eleven model cities have adopted a scoring mechanism, transforming social credit records into a condensed rating. In many cities, such rating systems are conveyed by evocative and catchword names connected to the city's rivers, flowers and other meaningful symbols, such as 'Qian River' (钱江) score in Hangzhou and 'Ou River' (瓯江) credit in Wenzhou, 'Osmanthus Fragans' (桂花) credit in Suzhou and 'Jasmine' (茉莉) score in Fuzhou, 'Litte Egret' (白鹭) score in Xiamen and 'Seashell' (海贝分) score in Weihai. Wuhu adopts the more prosaic brand of 'enjoy benefits' (乐惠分) score.

Of the eleven cities embracing social scoring, only Chengdu (whose original regulation dates back to 2003) applies the scoring exclusively to legal persons; the other ten cities apply scores to natural persons only, meaning that they collect social credit information on both legal and natural persons, but assign a score only to the latter (see Table 3). Such a choice might be explained by the parallel establishment of many other concurrent scoring mechanisms for enterprises and businesses and with the general emphasis of cities' social credit on moralizing people's behaviour rather than easing economic activities.

If there is near unanimity about the applicability of the scoring mechanism to natural persons only, the rating system and the number of entries upon which the rating is based vary from city to city. The score can take the form of numbers (such as in Suzhou), letters (from a minimum of four letters in Rongcheng and Chengdu to a maximum of eight letters in Suqian; Weihai stands in the middle

¹⁰⁵ See, on the same lines, Arsène, *supra* n 13, 7–8; Devereaux and Peng, *supra* n 4, 7; Dubois de Prisque, *supra* n 10, 30; Trivium China, *supra* n 2, 49; R. Creemers, 'The International and Foreign Policy Impact of China's Artificial Intelligence and Big-Data Strategies', in *AI, China, Russia, and the Global Order: Technological, Political, Global, and Creative Perspectives*, December 2018, 129–135, at 131, <https://t.co/XHmnm6EfY>; Chen, Fu, Wei, *supra* n 3, 6.

¹⁰⁶ As to the first batch of model cities, cf Hangzhou, *supra* n 61, Article 8; Suzhou, *supra* n 61, Article 10; Huizhou, *supra* n 61, Article 2; as to the second batch, cf Qingdao, *supra* n 61, Article 22; Anshan, *supra* n 61, Article 11; Huaibei, *supra* n 61, Article 15; Zhengzhou, *supra* n 61, Article 6, Articles 16–17.

with six letters), or categories into which the numerical score is translated (there are five categories in Hangzhou, Wenzhou and Wuhu, six in Fuzhou, seven in Yiwu). The number of entries feeding the score varies from a minimum of 26 in Chengdu to a maximum of 1,503 in Weihai (see Table 4).

As to scoring formats, what should be noted is that the majority of cities adopt a scale in which positive categories outweigh negative ones. For instance, in Suqian, there are as many as six possible categories above the average grading of 'C', and only one category below the average ('D'). In Wenzhou, there are three categories which are above 'average', and only one ('to be improved') below the average. The only exception is the city of Yiwu, whose scoring mechanisms is balanced with three categories above the 'average' and three below it (see Table 4).

Scoring entries reflect the items of information that can be collected to make up social credit, such as criminal and administrative sanctions, violations of traffic law, failure to pay local taxes, being in arrears on the payment of electricity supply or stealing electricity, indulging in insurance frauds, receiving public rewards or awards, making donations, volunteering for the Red Cross, and reporting illegal hunting.¹⁰⁷ Scoring entries, as well as the possible information providers for the relevant data, the value associated with each entry, and the way in which these values would be translated into letter and/or categories, are detailed either in the concerned city's scs regulations or on the websites offering the scores, with varying degree of precision and detail.¹⁰⁸

In the management of scores of natural persons, there is evidence of reliance upon algorithms to manage the prioritization and selection of the multiple variables and criteria underlying the system. For instance, the city of Suzhou explains its social credit scoring relative values as based on an AHP (analytic hierarchy process) methodology.¹⁰⁹ Yet, AHP is simply a mathematical model for controlling and adjusting the relative value of several variables,¹¹⁰ the digital deployment of which does not change the substance of the measurement process, but only makes it faster. Nothing indicates cities' use of artificial intelligence for scs data mining, machine learning and predictive

107 See Trivium China, *supra* n 2, 26–31, discussing Fuzhou scoring entries and relative values.

108 Cf Fuzhou's regulation in Trivium China, *supra* n 2, 26–31 and Credit Suzhou, '一键了解苏州桂花分' ('Understand Suzhou Osmanthus Fragans with one click'), 2014, <https://credit.suzhou.com.cn/news/show/25634.html> (in Chinese).

109 Suzhou, *supra* n 108.

110 See T. Saaty, *The Analytic Hierarchy Process: Planning, Priority Setting, Resource Allocation* (London: McGraw-Hill, 1980); more recently, M. Brunelli, *Introduction to the Analytic Hierarchy Process* (Cham: Springer, 2015).

TABLE 4 Scopes and Forms of Scoring in Model Cities

NDRC 2017	SCS Scoring Scope*	SCS Scoring Forms	Scoring Entries (number)**
Hangzhou	N	numerical score converted in the following categories: extremely excellent, excellent, good, average, to be improved	N/A
Suqian	N	AAA, AA, A+, A, A-, B, C, D	80
Suzhou	N	numerical score starting from 100	243
Xiamen	N	N/A	750
Wenzhou	N	numerical score converted in the following categories: extremely excellent, excellent, good, average, to be improved	between 50–60
Yiwu	N	numerical score converted in the following categories: extremely excellent, excellent, good, average, slight credit loss, significant credit loss, extreme credit loss	175
Rongcheng	N	A, B, C, D	391
Weihai	N	AAA, AA, A, B, C, D	1503
Chengdu	L	A, B, C, D	26
NDRC 2019			
Wuhu	N	numerical score converted in the following categories: extremely excellent, excellent, good, average, relatively bad	N/A
Fuzhou	N	numerical score converted in the following categories: extremely excellent, excellent, good, average, relatively bad, extremely bad	N/A

*N and L stand respectively for scoring applying to natural and legal person only.

** The exact number of scoring entries is not available (N/A) for some cities because only city residents can access to the city's platform.

analytics. The real-time and hyper-smart social credit Panopticon governing people's behaviour portrayed by Western media and literature seems to be a nightmare produced by Western fears, bearing little correspondence to what these SCSS actually are. This is further confirmed by the impact of cities' SCSS on the life of the data subject.

5.6 *Effects and Circulation of Social Credit/Scores*

When examining the effect of social credit systems of these cities and (where available) scores, one should distinguish between direct and indirect consequences. The former refer to the ensemble of rewards and punishments associated with the SCS regulations themselves with high or low level of social credit/scores, while the latter are related to the possible uses that third parties might make of the data collected, and are therefore strictly connected to the publicity and accessibility of such data.

On the one hand, SCS regulations set in detail benefits that are associated with high or low social credit; they are less precise on possible drawbacks. As it has been rightly noted, "achieving good classifications or high scores in the municipal SCS will result in various benefits supported by governmental agencies and commercial organizations. The most common reward is public transportation discounts, increased borrowing limits in public libraries, and fast track for governmental services".¹¹¹ Other examples might include school gym services,¹¹² access to public housing tenancy without deposit,¹¹³ parking service facilitations and discounts,¹¹⁴ access to city bike services without deposit and free bike services from one to two hours,¹¹⁵ and free access to cultural and tourist sites.¹¹⁶ By contrast, "punishment for low municipal SCS scores are smaller in scope and items. Most cities do not even elaborate specific punishments, and in cities that do, punishments are mostly about honour and suspending promotions for people who work in public institutions".¹¹⁷ Differently from what happens with other forms of social credit, such as those

¹¹¹ Liu, *supra* n 10, 26.

¹¹² See Hangzhou, '杭州推出个人信用 '钱江分' ('Hangzhou launched personal credit – 'Qian River Credit'), 2018, www.hangzhou.gov.cn/art/2018/11/17/art_812262_25174917.html (in Chinese).

¹¹³ Hangzhou, *supra* n 112.

¹¹⁴ Cf Hangzhou, *supra* n 112, and Wenzhou, '温州个人诚信分 '瓯江分' 上线试运行' ('Wenzhou Personal Trust Credit 'Ou River Credit' is online and now in trial process'), 21 October 2019, www.wenzhou.gov.cn/art/2019/10/21/art_1217832_39047101.html (in Chinese).

¹¹⁵ Suzhou, *supra* n 108.

¹¹⁶ Cf Hangzhou, *supra* n 112; Suzhou, *supra* n 108; Wenzhou, *supra* n 114.

¹¹⁷ Liu, *supra* n 10, 26.

related to financial scores, to nationwide blacklisting by specialized agencies and to judicial lists of default debtors, which have clear consequences in terms of denial of services and bad commercial reputation (see above, sections 3.1 and 3.3), the punishments associated with the SCSS of model cities are most of the times nominal (especially if compared with the actual legal sanctions associated with the behaviours concerned). As Daum has stressed, “even the most prominent point systems have so little impact on employment, education, and daily life that most citizens remain totally unaware of them.”¹¹⁸

On the other hand, one should also consider the possible uses that third parties might make of social credit data and scores. Looking for evidence of such uses would require investigating how social credit data and scores travel outside municipal credit information centres and penetrate administrative, corporate and societal practices. Since, for the time being, there is no evidence of such uses, a good proxy for third parties’ reliance upon social credit comes from checking who can access social credit data and, when available, scores, and for what purpose.

Considering the SCSS’ moralizing aim, and given that most of the information collected by model cities under SCS regulations is of a public character (insofar as it is mostly produced and/or obtained by public bodies and agencies), one might expect social credit data and scores to be available without limitation to public bodies and agencies themselves, and perhaps even to the general public. Yet, at least on paper, this seems to not be the case.

Let us begin with the general public’s right to access someone else’s social credit data and/or scores. First of all, some cities code a technological limitation for access, since the social credit platforms and applications are available only to city residents; this is for instance the case of Hangzhou, Suqian, Suzhou, Xiamen, Wenzhou, Rongcheng, Weihai, Wuhu, Fuzhou. Second, the SCS regulations of many model cities (most of which are included in the second governmental list) draw a clear line between ‘public’ and ‘personal’ information. ‘Public’ information, by definition, can be freely consulted; by contrast, the consultation of somebody else’s ‘personal’ social credit data or score is possible only with that person’s authorization.¹¹⁹ For instance, the Shanghai SCS regulation clearly states that “without written consent from the information subject, it is forbidden to consult the subject’s non-public social credit information, unless the law and

¹¹⁸ Daum, *supra* n 79.

¹¹⁹ Cf, as to the model cities in the first governmental list, Suzhou, *supra* n 61, Article 10; as to the cities in the second governmental list, Qingdao, *supra* n 61, Article 22; Anshan, *supra* n 61, Article 16; Shanghai, *supra* n 61, Article 22; HuaiBei, *supra* n 61, Article 15; Zhengzhou, *supra* n 61, Article 18.

administrative regulations specified otherwise”.¹²⁰ Similarly, Huabei scs regulation provides that “for consulting public credit information that is not publicly disclosed, written consent of the information subject must be sought”.¹²¹ Qingdao scs regulation not only contains a similar limitation, but also adds that the municipal credit information centre should keep track of who consults which profiles, how many times, in what form and for what reasons.¹²²

The limitations just surveyed do not apply as such when the consultation is sought by public bodies and agencies. Nonetheless, several scs regulations from the second governmental list set up constraints on even public powers to access personal social credit data. Under Zhengzhou’s scs regulation, for instance, administrative and judicial bodies can access personal social credit data only if they present an ‘official request’ to the municipal credit information centre¹²³ – thus suggesting that the automatic sharing of data is unilateral, from information providers to the municipal centre, but not vice versa. Regulations of other cities make it clear that, notwithstanding the right of public institutions to freely consult social credit data, they shall consult information “following the principle of reasonableness” in light of “administrative management needs”,¹²⁴ and shall neither “use the information for purposes not included in their administrative duties”,¹²⁵ nor shall they “disclose public credit information that involves national or business secret, or personal privacy”.¹²⁶

5.7 *Challengeability of the Results*

The above limitations of use of personal credit information by third parties (including public bodies) demonstrate that cities’ scss have been built, in particular in model cities included in the second governmental list, with considerable attention to the protection of data subjects. Other expressions of the same attention are the prohibition of collecting certain personal data (either in absolute terms or without the data subject’s authorization), the expiry period for negative information, as well as the relative transparency of the legal frameworks surrounding scss – it should be reminded that our inability to gather information on regulations of some cities is due to obstacles in

120 Shanghai, *supra* n 61, Article 22.

121 Huabei, *supra* n 61, Article 15.

122 Qingdao, *supra* n 61, Article 22.

123 Zhengzhou, *supra* n 61, Article 18.

124 Shanghai, *supra* n 61, Article 22.

125 Huabei, *supra* n 61, Article 15.

126 Qingdao, *supra* n 61, Article 24; for similar observations as to the limitations of public institutions’ uses of social credit data, see Chen and Cheung, *supra* n 3, 368–369.

accessing Chinese servers from outside the country, rather than to the unavailability of the regulations themselves.

To such a list of legal and technical guarantees, it should be added that many regulations (the majority of which are in the second governmental list) specify that legal and natural persons can always check their own social credit data and/or scores upon proof of their identity.¹²⁷ Some scs regulations invite data subjects to report to the municipal credit information centre facts or details that they consider relevant for their own social credit.¹²⁸ Further, almost all regulations provide that data subjects may always ask for the rectification of information that they deem incorrect. Municipal credit information centres are then required to verify the accuracy of the information and to amend or delete any erroneous record.¹²⁹

It remains unclear how and to what extent the right to amendment might actually be enforced in case of refusal by a municipal credit information centre to proceed with the requested rectification or update.¹³⁰ However, even critics of the scss acknowledge that, although rules in cities scs regulations on access and correction rights are still “at a rather primitive stage, [...] the initiatives undertaken by local pilot schemes are broadly consistent with the regulatory trends of big data profiling in some pioneering jurisdictions such as the EU and the US”.¹³¹

6 Conclusions

The above survey makes it clear that, in the West, there is more confusion than clarity on the scss of Chinese cities. Western mainstream descriptions of

¹²⁷ As to the model cities included in the first governmental list, cf Suzhou, *supra* n 61, Article 10; as to the model cities included in the second governmental list, cf Qingdao, *supra* n 61, Article 22; Anshan, *supra* n 61, Article 14; Shanghai, *supra* n 61, Article 22; Huabei, *supra* n 61, Article 15; Zhengzhou, *supra* n 61, Article 18.

¹²⁸ See Nanjing, *supra* n 61, Article 30; Xiamen, *supra* n 61, Article 45; Shanghai, *supra* n 61, Article 13; Fuzhou (2019), *supra* n 61, Article 10.

¹²⁹ As to the model cities included in the first governmental list, cf Hangzhou, *supra* n 61, Article 27; Nanjing, *supra* n 61, Article 58; Suqian, *supra* n 61, Article 28; Suzhou, *supra* n 61, Article 13; Xiamen, *supra* n 61, Article 33; Huizhou, *supra* n 61, Article 32; Wenzhou, *supra* n 61, Article 33; Yiwu, *supra* n 61, Article 22; Rongcheng, *supra* n 53, Article 7; Weihai, *supra* n 61, Article 30; as to the model cities included in the second governmental list, cf Qingdao, *supra* n 61, Article 45; Wuhan, *supra* n 61, Article 31; Anshan, *supra* n 61, Article 19; Shanghai, *supra* n 61, Article 36; Huaibei, *supra* n 61, Article 21; Wuhu, *supra* n 61, Article 22; Fuzhou (2017), *supra* n 61, Article 39; Zhengzhou, *supra* n 61, Article 23.

¹³⁰ Devereaux and Peng, *supra* n 4, 4; Chen and Cheung, *supra* n 3, 373.

¹³¹ Chen and Cheung, *supra* n 3, 376.

such systems suffer from multiple mistaken assumptions. Western media, and sometimes scholarship, tend to conflate different forms of social credit with one another, confusing financial metrics with nationwide blacklists and cities' local SCSS, attributing features of one form to another, and assuming that a single, unitary policy underlies all forms of SCSS. Further, Western accounts frequently report local SCSS to be any measure and employment of AI undertaken by a city (such as the facial recognition and bio-metric data programs implemented in the province of Xinjiang), without checking whether they are actually adopted within the social credit umbrella, and then conclude that such initiatives are technologically-enhanced instruments for undermining people's freedom, limiting dissent and issuing punishments without legal basis. More generally, Western attention towards Chinese social credit and its integration of technology and governance often draws upon the West's mistrust of the Chinese state-driven political and legal system, and projects on Chinese experiments the typically Western "fears about technology's creeping reach into privacy and decision-making".¹³²

Our comparative study demonstrates that, at least as far as model cities' experiments with SCSS are concerned, much of Western biases and fears are misplaced and factually unchecked, or anyway require to be properly contextualized. Our research has in particular highlighted that there is no single, unitary form of SCS. There are rather many forms of SCSS, produced by different actors, by different means and for different purposes. Even if one considers only SCSS established by territorial administrative units, there are multiple and overlapping layers of SCS regulations, running across the entire span of the Chinese administrative hierarchy, from provinces to prefectures, from counties to cities. Multiplicity is marked even within units of a similar level; each city has built its SCS in its own way. The coexistence of all these initiatives is important because it shows that China's authoritarianism is much more fragmented than Westerners think. Moreover, the fact that each city's SCS is based upon its own requirements demonstrates that the commensurability of data from different systems is low and that, for the time being, the circulation and coordination of such data are quite hard. Our analysis also proved that most of the information making up the notion of social credit refers to compliance with legal rules and commercial behaviour (while non-economic private behaviour, such as donating blood and volunteering for the Red Cross, is only a minor component) and draw upon data stemming from public records – a feature

¹³² Daum, *supra* n 79.

that enhances the neutrality, objectivity and legibility of the procedure¹³³ and confirms that cities' SCSS could be seen as little more than instruments of digital bureaucracy.¹³⁴ We further demonstrated that, contrary to Western claims about China's movement toward automated decision-making, the SCSS of all model cities have an extremely simple technological profile; there is no proof that the data gathered are used from a forward-looking perspective. Besides, only half the cities analyzed adopt a scoring system; even when there is scoring, ratings are disproportionately focused on promoting good behaviour in urban areas, rather than on sanctioning deviations. Finally, almost all model cities' SCSS have a clear legal basis, providing basic guarantees to data subjects and limiting third party access to social credit data.

All the above, of course, does not mean that model cities' SCSS regulations cannot be improved or that the data they generate cannot be used to profile people and to manipulate their behaviour. It is for instance clear that the inclusion in (some of) the SCSS regulations of provisions fostering data quality, protecting privacy and providing data subjects with remedies might not be enough to ensure data accuracy, non-disclosure of personal information and protection from abuses by public officials. Equally clear is that these SCSS have the potential to induce behavioural changes in those who are subject to them, suggesting strategies to cope with (and perhaps to game) the system itself. Additionally, the extent to which the architecture and practice of model cities' SCSS correspond to those of other (i.e., non-model) cities and administrative units should be checked.

The analysis of the real-world effect and prospective consequences of model cities' SCSS, as well as their assessment vis-à-vis comparable practices in the West, remained outside the scope of this paper. Yet, notwithstanding the limitations of our study, we believe that we demonstrated that, at least as they stand now, the experiments by Chinese model cities raise problems that are not substantially different from those posed by Western technology-enhanced measurement and nudging practices.¹³⁵ As it has been said, "Chinese social credit should not be exoticised or viewed in isolation. Rather, it must be understood

133 On the same lines, Liu, *supra* n 10, 30.

134 Arsène, *supra* n 13, 7; Chen, *supra* n 24, 22–24.

135 Many have noticed that rating and scoring mechanisms widespread in the West (see *supra* n 18) raise a number of challenges, insofar as they often: collect and spread people's sensitive information; implement racial, gender, class and other forms of discrimination; enhance social disparity; limit freedom of thought and of expression; provide a basis for automated decisions on people's access to, and denial of, employment, credit and services; result in the application of sanctions without due process; surreptitiously elicit behavioural change; grant considerable power to unaccountable and unmonitored agents. Cf, among

as merely one manifestation of the global age of the algorithm”.¹³⁶ In a similar perspective, it has been noted that, from the Western point of view, overstating China’s use of technology “can be just as harmful as underestimating its use by our own governments and corporations”.¹³⁷ From this point of view, more comparative knowledge of Western and Eastern uses of social measurement devices is badly needed, in order to help us better understand others’ and our own approach to technology, quantification, and human behavior.

the many, S. Jones, ‘The Autonomous Mind: The Right to Freedom of Thought in the Twenty-First Century’, *Frontiers in Artificial Intelligence*, 26 September 2019, <https://doi.org/10.3389/frai.2019.00019>; H. Sætra, ‘The tyranny of perceived opinion: Freedom and information in the era of big data’, *Technology in Society* 59 (2019), <https://doi.org/10.1016/j.techsoc.2019.101155>; L. Casini, ‘Googling Democracy? New Technologies and the Law of Global Governance’, *European Journal of International Law* 29(1) (2018) 1071–1077; E. Benvenuti, ‘Upholding Democracy amid the Challenges of New Technology: What Role for the Law of Global Governance?’, *European Journal of International Law* 29(1) (2018) 9–82; J. Bartlett, *The People vs Tech: How the Internet is Killing Democracy (and How We Can Save It)* (London: Ebury Press, 2018); S. Noble, *Algorithms of Oppression. How Search Engines Reinforce Racism* (New York: NYU Press, 2018); C. Powell, ‘Race and Rights in the Digital Age’, *American Journal of International Law* 112 (2018) 339–343; Kelley, *supra* n 18; M. Madden, M. Gilman, K. Levy, A. Marwick, ‘Privacy, Poverty, and Big Data: A Matrix of Vulnerabilities for Poor Americans’, *Washington University Law Review* 95 (2017) 53–125; Infantino (2016), *supra* n 18, 362–367; O’Neill, *supra* n 18; Broome and Quirk, *supra* n 18, 813–838; Pasquale, *supra* n 18; D. Citron and F. Pasquale, ‘The Scored Society: Due Process for Automated Predictions’, *Washington Law Review* 89 (2014) 1–33; T. Zarsky, ‘Understanding Discrimination in the Scored Society’, *Washington Law Review* 89 (2014) 1375–1412; Bussani, *supra* n 18, 10–13.

¹³⁶ Loubere and Brehm, *supra* n 2, 143.

¹³⁷ Daum, *supra* n 79.