

Blacklists and Redlists in the Chinese Social Credit System: Diversity, Flexibility, and Comprehensiveness



Topic space: China; Social credit systems; Reputation systems; Digital socio-technical systems

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Exploratory study of digital blacklists and redlists across 30 Chinese provincial-level administrative divisions

Background:

The Chinese Social Credit System (SCS, 社会信用体系) is a novel digital socio-technical credit system. The SCS aims to regulate societal behavior by reputational and material incentives and sanctions. To this end, the SCS deploys an infrastructure of digital blacklists and redlists.

Blacklists showcase natural and legal persons that have transgressed a regulation, law, or social norm. Redlists, as their normative counterpart, highlight entities for their compliance. Scholarship on the SCS has offered a variety of legal and theoretical perspectives.

Corresponding to China's current policy-making cycle, the SCS entered its final development phase in 2020. However, there is little knowledge about its actual implementation.

→ Based on a unique data set of blacklists and redlists in 30 Chinese provincial-level administrative divisions (AD), we show the diversity, flexibility, and comprehensiveness of the SCS listing infrastructure.

Research questions:

RQ1: Are there technological and design differences in lists and records between the provincial SCS platforms?

RQ2: How do provincial SCS platforms differ in the number and types of blacklists and redlists?

RQ3: How do SCS blacklist and redlist records of the same type of list differ in terms of the information displayed across provincial SCS platforms?

Methodological approach:

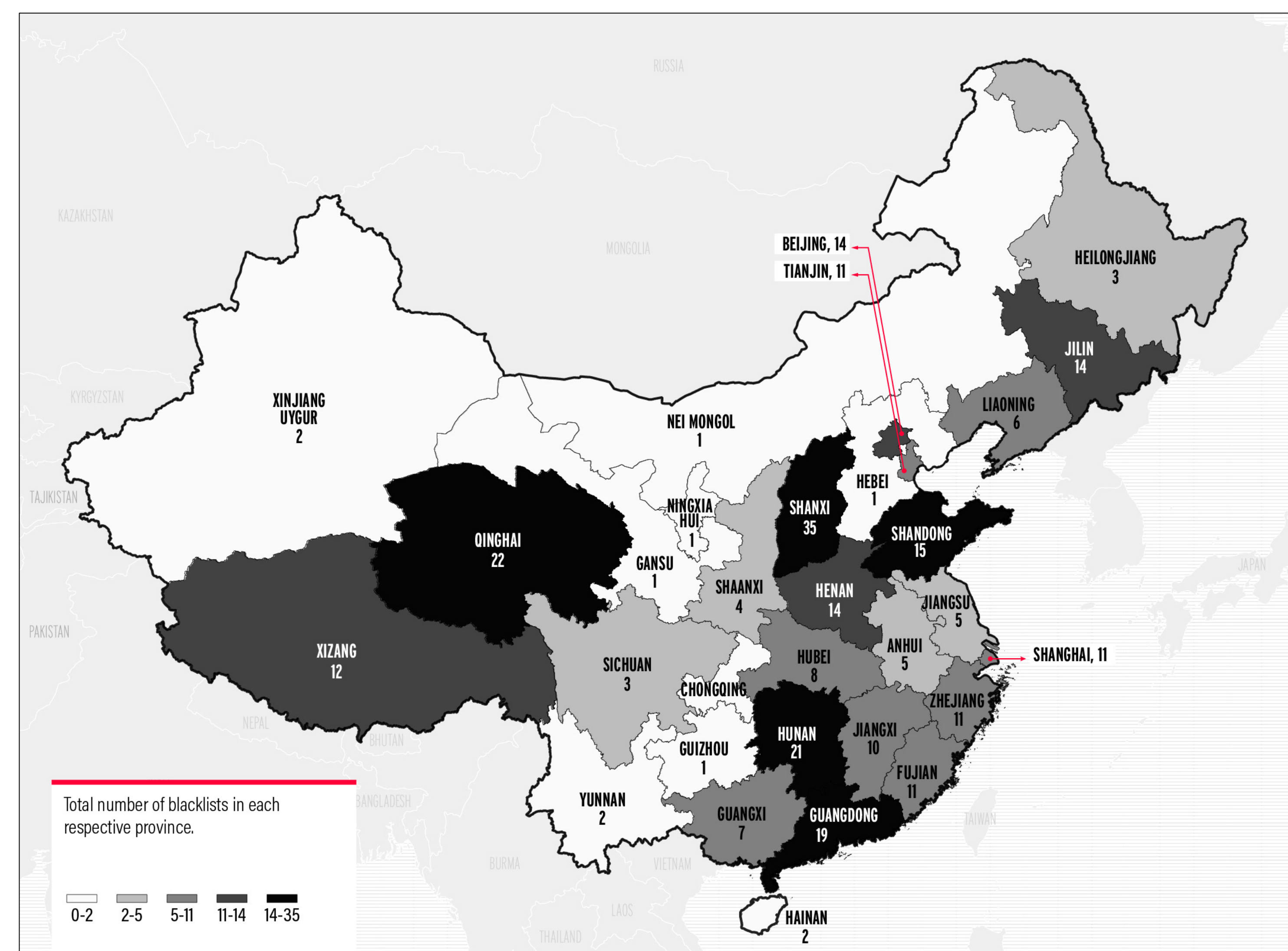
While documenting the different types of lists for each province, we observed that each AD operated a different web server with different implementation of front-end, back-end and database design. Moreover, we did not find a public API on any of the AD SCS platforms. This made data collection for credit records complicated, as each AD SCS platform required the programming of a unique web crawler and scraper.

Consequently, different crawling and data extraction (scraping) robots were programmed to extract pre-specified information on credit records from the most common type of blacklist and redlist. No SCS platform had specified a *robots.txt* file. For more information on our methodological procedure and initial ethical considerations of data-driven research on the SCS see paper Sections 2.2 and 5, respectively.

Given substantial data collection obstacles (see paper), it took 6 months to access all SCS platforms and to document the different types of lists, verify them through revisits, and collect credit records for each AD.

Types of blacklists	Types of redlists																			
	Blacklists of untrustworthy entities (general)	Blacklists of commercial and transactional activities	Other blacklists	Employment relationship blacklists	Product quality blacklists	Blacklists of financial fraud	Industry blacklists	Blacklists of social fraud	Coronavirus blacklists	NA	Redlists of trustworthy entities (general)	Redlists of commercial and transactional activities	Redlists of moral behavior & good political ideology	Employment & customer relationship redlists	Product quality redlists	Industry redlists	Redlists of professions & awards	Redlists of intellectual property	Other redlists	Coronavirus redlists
Beijing	2	4	3	0	1	4	0	0	NA	1	5	2	2	2	4	8	0	NA	1	1
Shanghai	4	2	2	0	0	2	1	0	1	1	1	0	0	0	0	0	0	0	0	0
Tianjin	6	1	0	1	0	3	0	0	1	0	3	5	0	0	0	3	0	0	0	0
Hebei	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
Shanxi	5	5	5	1	3	2	12	2	1	0	3	2	0	0	1	0	1	0	0	0
Liaoning	2	1	3	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0
Jilin	1	6	3	1	2	1	0	0	NA	1	0	0	0	0	0	0	0	0	0	NA
Heilongjiang	3	0	0	0	0	0	0	0	1	1	2	0	0	0	0	0	0	0	0	1
Shandong	2	6	2	1	1	2	1	0	1	1	3	0	0	1	1	0	1	1	1	1
Jiangsu	2	0	2	0	0	1	0	0	1	0	1	0	1	0	0	0	0	0	0	0
Zhejiang	3	4	2	0	1	1	0	0	1	0	2	1	0	0	0	0	0	0	0	1
Anhui	4	0	1	0	0	0	0	0	1	0	0	3	0	0	0	0	0	0	0	1
Fujian	3	2	2	2	0	1	1	0	NA	1	3	1	1	0	0	0	0	0	0	NA
Jiangxi	2	2	1	1	0	2	2	0	1	0	2	4	0	0	3	1	0	0	0	0
Henan	5	4	1	0	1	1	2	0	1	0	3	0	0	0	0	1	0	0	0	1
Hubei	2	5	0	0	1	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0
Hunan	5	5	3	1	4	0	3	0	0	0	2	2	0	0	3	4	0	0	0	0
Sichuan	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Guangdong	1	5	5	4	2	1	1	0	0	0	7	1	0	0	1	5	0	0	0	0
Gansu	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1
Hainan	2	0	0	0	0	0	0	0	NA	1	0	0	0	0	0	0	0	0	0	NA
Qinghai	3	4	2	1	3	2	7	0	NA	0	2	1	0	0	1	1	0	0	0	NA
Guizhou	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
Yunnan	2	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
Shaanxi	1	1	1	1	0	0	0	0	1	1	3	1	0	0	2	0	0	0	0	1
Tibet	1	4	0	6	0	0	1	0	0	0	4	1	0	2	2	1	2	0	0	0
Inner Mongolia	1	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0
Guangxi	3	1	1	2	0	0	0	0	0	0	1	0	0	0	0	6	0	0	0	0
Ningxia	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
Xinjiang	2	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0

Different types of blacklists and redlists implemented by ADs. Shading indicates the number of blacklists or redlists for a given type. N/A denotes no access to the SCS platform.



Number of blacklists implemented across 30 listed ADs. Shanxi had implemented the most blacklists (35), followed by Qinghai (22), Hunan (21), and Guangdong (19).



Two-column example credit record of the "Lao Lai" blacklist published on Ningxia's SCS platform. Translations by the authors.

Results:

RQ1: Currently, the design of the SCS lists serves as a digitally accessible repository for citizen and company records and does not use any advanced features that are possible for a digital reputation system.

RQ2: Our data provide evidence for substantial differences in the number and types of lists between ADs. For example, Beijing operated more than ten different types of blacklists and redlists. Inner Mongolia had implemented only one blacklist and one redlist.

RQ3: We found informational inconsistencies in credit records of the same type of blacklist and redlist. This also confirms that provincial-level administrative divisions independently implement SCS listings.

Takeaways:

- 1) We observe differences in accessibility, interface design and credit information across SCS blacklists and redlists.
- 2) SCS listings are flexible: During the COVID-19 outbreak, we observed a swift addition of blacklists and redlists focused on strengthening the compliance with coronavirus-related norms and regulations.
- 3) Third, the SCS listing infrastructure is comprehensive. Overall, we can identify 273 blacklists and 154 redlists across provincial-level ADs. Our blacklist and redlist taxonomy highlights that the SCS listing infrastructure prioritizes law enforcement and industry regulations. We also identify redlists that reward political and moral behavior.