

Suitability of Social Credit System in Modern Society

A Research Paper submitted to the Department of Engineering and Society

Presented to the Faculty of the School of Engineering and Applied Science
University of Virginia • Charlottesville, Virginia

In Partial Fulfillment of the Requirements for the Degree
Bachelor of Science, School of Engineering

Jiaxu (Josie) Li

Spring 2020

On my honor as a University Student, I have neither given nor received unauthorized aid on this assignment as defined by the Honor Guidelines for Thesis-Related Assignments

Advisor

S. Travis Elliott, Department of Engineering and Society

I. Introduction

The Social Credit System (SCS) is a national reputation system launched by the Chinese government in 2014 to raise public awareness of integrity and enhance credit level. However, since its introduction, there has been heated debate about whether the SCS is a technology bliss or an Orwellian nightmare. Therefore, this article explores the answer to the following question: Is the SCS suitable as a novel governance system for China or any country?

In order to understand the basis and controversy of the Social Credit System (SCS), the paper has two objectives. The first is to comprehensively examine the SCS and its implications for different stakeholders. The second is to investigate the suitability of the SCS in modern Chinese society and potential concerns for its future development. More specifically, section I outlines the development of this article. Section II discusses the foundation of the prevalent credit rating system and how the SCS extended it. Section III documents the current development and stakeholders of the SCS in modern Chinese society using the Social Construction of Technology (SCOT) theory. Section IV examines the perspectives of proponents and opponents, as well as the theories on which these opinions are based, in order to clarify misconceptions. Section V considers the suitability of the SCS for the current state of China and potential problems of similar systems in any country.

II. Social Credit System Basis & Stakeholders

Traditional governance is based on regulatory laws and legislations to restrain behavior and maintain stable social development. Laws establish the behavioral and social norms together with punishment and incentive mechanisms to make people comply with them (Willis, 1926). However, traditional governance normally performs minimum conduct requirements and

supervision, because it involves significant investment in resources such as deployment of police to enforce laws in real time (Backer, 2019). In China, rapid economic and industrial development contrasts with social and cultural development. Despite enhanced living standards, public ethical standards and awareness of legal compliance still require improvement (“The World Bank In China”, 2019). Moreover, economic internationalization has also exposed the differences in transparency and the degree of government intervention in the economy between China and the West. In response to the repeated social and economic issues that the country has been facing for decades such as food safety and commercial fraud, the Chinese government proposed a novel mechanism, the Social Credit System (SCS), to set social norms and reform the legislative institutes (Backer, 2018).

“Planning Outline for the Construction of a Social Credit System (2014-2020)” is the national guidance issued by the Central People’s Government of the People's Republic of China (PRC) to municipal governments. The document specifies guidelines for the implementation of the SCS on a national pilot system to promote integrity based on laws, norms and contracts (Creemers, 2015). The system is based on rewards and punishments, in which higher social credit will be awarded through tax incentives or other means, while lower social credit may be publicized online, blocked from entering the market, etc. (Creemers, 2015).

“Social credit” is a measure of “sincerity” and the central developmental idea of the Chinese SCS is to use quantitative data to reflect qualitative judgement of “sincerity” based on analytics and algorithms (Backer, 2019). The system aims to raise public awareness of integrity and enhance credit level through innovative governance, in order to develop a self-policing nation guided by appropriate behaviors (Backer, 2018). As of now, the SCS is merely a collection of pilot programs implemented by municipal governments and technology companies

(Matsakis, 2019). There is no single social credit score to measure one's integrity (Creemers, 2018).

In order to provide a holistic analysis of the SCS's implementation in China, it is important to identify relevant social groups and inspect their corresponding expectations using the Social Construction of Technology (SCOT) theory. This paper focuses on the definition and perspectives of the five major stakeholders: Chinese government, citizens, local companies, western countries (governments and media) and international companies.

i. Chinese Government

As the ultimate owner of the SCS, the Chinese government has both created the system and been monitored by it. Laws and administrative regulations are necessary in the early stages of establishing the framework of the SCS, and then formulating operating rules during the implementation phase (Backer, 2018). While the central government sets the moral norms for the SCS, municipal governments and private companies define the algorithms that judge morality for social credit. However, implementing SCS also touches the gap between government affairs and judicial credibility (Backer, 2018). In recent decades, rapid economic development and social reform have also led to increasing corruption and various social issues, reducing people's confidence in the government. Therefore, the SCS aims to enhance government credibility by making government and legislation decisions more transparent and restricting power abuse (Creemers, 2018).

Therefore, for China's central and municipal governments, the SCS has two functions. Firstly, the SCS is an external tool to reflect and augment its influence and governance not only within the nation, but also abroad. Being the only authority to found moral norms and related

regulatory laws for the SCS, the government maintains social stability and even public viewpoints through surveillance. Moreover, the SCS assists the Chinese government to penetrate its influence and ideas in other countries. Given China's expanded influence in Asian and African countries through projects such as the "Belt and Road," China uses the SCS to enlarge its impact and control on the countries involved (Backer, 2019). Secondly, the SCS is an internal self-reflecting mechanism for the central and municipal governments, in order to increase the public's trust in the government (Backer, 2018).

ii. Chinese Companies

The SCS invests lots of attention in monitoring and evaluating Chinese companies in order to achieve a more self-discretionary and transparent economic environment (Creemers, 2015). The short-term "elevation" development based on sacrificing the environment in the past 30 years has made the current economy difficult to sustain and has even caused it to lose order, leading to commercial fraud, environmental exploitation, etc. (Zhou, 2012). Despite the impression of "a rigid control-based governance model," Chinese regulatory enforcement in business is often sporadic and selective, but ruthless once it chooses to address a specific case or conduct a special crackdown (Daum, 2019a). Such ineffective enforcement not only decreases public confidence but also makes business attempts to violate the seemingly helpless law (Daum, 2019a). Hence, the market needs a fair and transparent system to manage companies and make the economic growth sustainable. The market and commercial principles advanced by the SCS include anti-monopoly, environmental protection, commercial fraudulent, arrears of wages, tax-cheating, etc. (Creemers, 2018).

Under the SCS, social credit score is an indicator of corporate credibility. Because the score is closely related to the company's tax payment, compliance with market rules, and

environmental impact, a higher score means that the company is more “credible” (Backer, 2018). In this way, customers can use social credit as a direct and unified indicator to learn and observe the company's performance. If the system is applied properly, it will solve China's long-standing economic problems by letting the public and government oversee companies (Backer, 2018). It also allows local small companies or startups to better present themselves because the government rewards them for higher social ratings (Creemers, 2015). However, while enjoying the benefits, companies must disclose details or even secrets of the company's management and operations to credit assessors.

iii. Chinese Citizens

As a basic component of a country, citizens are one of the monitoring targets of the SCS. Over the past few decades, imbalanced distribution of education and economic resources and the chaotic information age have reduced citizens’ trust in their governments, companies and fellow citizens. Therefore, the SCS aims to advocate a "people-oriented" nature and "build a strong atmosphere of honor and trustworthiness," so that honesty and trustworthiness become “the standard of conscious behavior for all people” (Creemers, 2015). In order to increase the transparency of social services, the guidelines require that the SCS’s regional systems, developed by municipal governments or companies, disclose drug prices, monitor social assistance, etc. (Creemers, 2015). At the same time, the government official website displays a “blacklist” (a list of people who severely and repeatedly break the rules) integrated from various regional systems for people's attention and vigilance (Horsley, 2018). In this way, citizens have the right to access the relevant government and company data through the SCS system, and at the same time need to be monitored by the SCS to obtain information related to social credit records.

In addition to passive and systematic governance, the SCS conducts nationwide “sincerity” education to change its platform from an “exogenous system of commands” to a “endogenous system of self-control” (Backer, 2018). Schools, companies and governments have begun to emphasize “sincerity” and the importance of keeping a good social credit score (Creemers, 2015). For citizens, SCS is not only a tool for them to participate in the government’s and community’s decision-making, but also a mechanism for understanding their own living conditions and holding themselves accountable to self-improving. However, the cost is that citizens’ daily lives are represented by social credit profiles and their standing in the system. Even though the current SCS only focuses on a person’s economic behavior, if the system continues to expand, a careless mistake could significantly affect a person's life.

iv. Foreign Companies

For international companies, the SCS is both a unified mechanism for deep cooperation with the Chinese government and a loophole that may completely expose the company’s business to another country. With the help of the electronic port management platform, foreign companies can better track their cooperation with Chinese companies, inquire of Chinese companies' credit scores, and formulate standardized trade regulations (Creemers, 2015). However, due to the differences between Chinese and other countries’ social and company culture, a small operation that conforms with one country’s standard might reduce the company’s social credit in the SCS (Backer, 2019). In this way, international companies have to reconsider whether to cooperate with China or not.

v. China’s Collaboration with Other Countries

With the globalization of China’s economy and culture, the construction of the SCS has not only influenced the international community through China’s technology and politics, but

has also increased China's willingness to take international opinions into account. As China increases its participation in the global economy, the introduction of the SCS means that other countries may need to adopt the system in order to trade with China. Moreover, section III will discuss in detail how Western countries might only be several steps away from becoming a surveillance country such as China (Grant, 2018). On the other hand, the fear of following China and the long-term aversion of socialist countries has evoked Western media to harshly criticize the SCS. Although many criticisms are speculative and unfounded, they are issues for China and other countries to consider when adopting national surveillance systems (which the paper discusses further in section V).

III. Credit Rating System & Social Credit System

The SCS is not a novel system developed by the Chinese government, as similar products have long been adopted by the Western private sector. As the first country to study the field, because of its more liberal social system and cultural environment, private organizations spontaneously established the United States' credit system (S. Ma, 2019). For example, rating mechanisms (such as insurance discount provided by StateFarm's "Drive Safe and Save" program for good drivers (O'Leary, 2020)) and credit scoring (such as increased difficulty when people with low credit scores apply to loans (Daum, 2019b)) have been around for decades. Institutions and governments welcome them as a convenient tool to monitor people's compliance to federal standards in real time (Backer, 2018).

Rating or credit systems are not simple collections of big data and technology, they involve a sophisticated design of governance structure and require the cooperation among all stakeholders. Although rating systems might be considered as a substitution or dilution of the traditional regulatory law system which is based on commands and obedience, they are actually

an expression of the law itself (Backer, 2018). As a two-way system, the rating mechanism performs constant observation, while the targets of observation, aware that they are under surveillance, adjust their behaviors accordingly through systematic feedback (Backer, 2008). In this way, moral norms that originally formed the basis of the system will gradually evolve into a set of regulatory rules based on incentives and compliance (Backer, 2018). In addition, although the introduction of the rating mechanism has weakened the significance of some traditional laws, the implementation of each phase of the system requires establishing a new set of rules. As proposed by Larry Backer, there is a triangular relationship between the governmentalization, the mass of population and statistics (Backer, 2013). For example, governments and companies need legal permission to collect data, and the public relies on laws to protect their data from misuse (Backer, 2013). Hence, the rating mechanism proposes a new form of combining governance and the law with the help of technology, which changes the definition of governance from passive obedience to active compliance (Backer, 2018).

The difference between the Chinese SCS and rating systems is twofold. The first aspect describes the extent of the system's impact and the goals behind it. Unlike the rating mechanism, which aims primarily to maximize economic objectives, the SCS adds the objective of promoting socialist ideas to traditional rating systems' incentives (Creemers, 2015). The second aspect is the authority that enacts and implements the system. While private institutions and local governments normally own rating systems in Western countries, the Chinese SCS is possessed by the central government, or more precisely the Communist party of China (CPC) (Backer, 2019). The difference in ownership can be explained by Western and Chinese government structure and the public's perception of the law in both cultures. While law is considered as "a guarantor of rights" and "a measure of freedom and justice," societies have historically used it as

a ruling tool to maintain the stability of Chinese society and leadership (Z. Liang, 1989).

Although this understanding of the law has slowly shifted to prioritize the protection of human rights in recent years (Z. Liang, 1989), historical inertia still makes Chinese people more dependent on government (Qu, 2015). These differences in Chinese and Western cultures lead to two distinct views of the SCS, which the paper will discuss more thoroughly in later sections.

Even though Western countries may think they are very unlike China, the large amount of data owned by private companies and governments and the temptation for a new form of governance make them only several steps away from implementing a regime that resembles China's (Grant, 2018).

When United States firms first implemented credit reporting systems, its purpose for imposing “discipline” on people was explicit (Creemers, 2018). Credit assessors collect information about each subject's marriage, education, gender and racial prejudices, and the McCarthyite biases of the 1950s (Creemers, 2018). It was not until the Fair Credit Reporting Act of 1970s that data security and anti-discrimination were incorporated into the Federal Law (Creemers, 2018). Contemporary Western liberal democracies tend to hide the goal of social management in credit systems. Public opinions are guided by internal biases and external unconscious decision-making strategies (Creemers, 2018). For example, a 2018 report demonstrates that the Swedes welcomed the implantations of microchips by the government for public transportation (Backer, 2018). Although not explicitly stated, its governance implication is self-evident with this novel technology. Comparatively, the SCS widely publicizes its goal for social management to promote public awareness of “sincerity” and individual behavior (Creemers, 2018).

IV. Proponents' View, Opponents' View, and Misconceptions

i. Proponents' View

Proponents of the SCS believe that in reality people do not follow the rules and moral norms spontaneously (Peng, 2006). Therefore, proper guidance and regulatory arrangement of the system are necessary to make transactions trustworthy (Peng, 2006). Furthermore, proponents regard the SCS as an essential system to change China's current social and economic situation. If implemented properly, the SCS could help to reform governments, reduce social disparities, improve economic order, and promote moral ethics, with voluntary compliance and moral norms (Backer, 2019). Government documents mainly call for the SCS as a means for streamlining regulation to eliminate onerous requirements on businesses and allow market forces to provide guidance (Daum, 2019a). In addition to economic construction, the SCS's core idea of "sincerity" is slowly becoming the glue for a society that has long appreciated social stability and trust (Creemers, 2018). Proponents of the system state that it paves the way for China to demonstrate its national strength and propose a possible integration of technology and society at the international level (Peng, 2006).

ii. Opponents' View

Opponents of the SCS regards it as a violation of basic human rights and business privacy, as well as a weapon of the CCP's oppression of opposition. Although the Chinese government claims that the SCS is a national financial rating system and a supplement to law enforcement, Western critics see SCS as a surveillance tool by the Communist Party to solidify its power by violating public privacy and punishing dissidents (Matsakis, 2019). Widely circulated stories in many media today depict the SCS as a massive surveillance ranking system that will monitor the daily behavior of China's enormous population and give everyone a ranking

in society (A. Ma, 2018). These reports emphasize that the SCS illegally collects data from facial recognition, online transactions and social media, and uses this information to unreasonably punish citizens (Marr, 2019). Therefore, the prevalent image of the SCS in the West is an Orwellian system in which daily actions that do not comply with government requirements can lead to demeaning punishments in all aspects of life (Gertz, 2019).

iii. Misconceptions

A careful study of the issue reveals that many information provided by media are second-handed, have no evidence or source, and are contorted in circulation (Matsakis, 2019). Although China does use extensive facial recognition in crime investigations and traffic monitoring, the introduction of the SCS has not expanded the scope of data collection (Matsakis, 2019). The existing data adopted by municipal governments or technology companies' subsidiary SCS systems fall within legal constraints (Backer, 2018). For example, many news reported that nine million people with low scores were banned from purchasing domestic flight tickets and were publicized on the Internet (A. Ma, 2018). However, the blacklists posted on the SCS's website only included those who had seriously violated the Supreme Law and traffic regulations (F. Liang, Das, Kostyuk & Hussain, 2018). As stated in the 2016 State Council document, the main items of deductions are bribery, tax fraud, violations of Internet order, refusal to execute judicial or administrative decisions, and evasion of military service (F. Liang, Das, Kostyuk & Hussain, 2018; Qu, 2015). These point deductions are due to violations of legal obligations, instead of an integrated behavioral assessment (Daum, 2019b).

V. Suitability & Concerns

The prevalent concern for the SCS, or any credit rating systems, is whether it is or is likely to become an Orwellian nightmare: an omniscient system surveils everyone's daily life,

making people live in a unified form and with unified ideology to deliver a quantified score (Creemers, 2018). The establishment of the SCS is based on the CCP's belief in systematic science and social engineering intervention methods for society (Creemers, 2018). Although the SCS guideline promises transparency and autonomy, it remains a question whether these visions have the potential to be realized in their ideal or abused in a centralized country. The unfree social media environment and the different government structure and social value make the development of the SCS even more "boundless" in China. Because Chinese culture historically values social stability and collectivism as opposed to individualism, the Chinese are likely to agree with the SCS's regulations even though they might be harmful to minority groups. Moreover, the unfree social media ensures that some dissenting voices cannot be heard by more Chinese people, especially the authorities.

Nevertheless, the current system is more of a patchwork of regional pilots and experimental projects, with few indications that it could be implemented nationally (Creemers, 2018). The chaos of the integrated system raised many questions about the legal and enforcement aspects of regional pilots. For example, Tencent applied social credit scores to its gaming industry to promote player activity and gaming culture norms (Horwitz, 2017). Even though this is within the law, the practice of automatically counting customer activities into the SCS has drawn concerns of the impact if the scope is expanded and one assigns a single score for the system. Moreover, data evaluation and collection are unorganized even within each subsystem, which consists of municipal governments, technology companies, and banks (S. Ma, 2019). In order to implement the SCS robustly, a third party that is independent from all other stakeholders yet has enough power should be established. Although such institutions, local credit system service agencies, already exist, they still rely on municipal governments and do not have much

power and credibility (S. Ma, 2019). Therefore, the SCS service agency could be directly supported through legislation and have equal power with local governments in future development.

These developments confront potential problems in countries where the boundaries of the government's rights are not clearly defined. In China, the pilot programs have revealed problems with data collection, algorithm determination, and punishment judgments due to unclear government power boundaries. For example, the personal information of those who have seriously violated the law are archived in a blacklist, which is publicly available on the "Credit China" website (Horsley, 2018). Although the SCS aims to use public criticism to punish “insincere” individuals, many people see such behavior as a violation of privacy. This will put pressure on people who have already suffered the consequences of violating the law (Matsakis, 2019). In addition, the SCS needs to carefully consider the form and scope of penalties imposed by the legislature. For example, some have suggested to strengthen the punishment for breaking the law by allowing parents' low credit scores to prevent their children from going to college [Business Insider]. These are ethical issues to consider, and because the Chinese legislature is not separated from the government, the lack of restraint may make the borderline too large (Daum, 2019b). In this process, the SCS also needs to consider whether the existing laws are correct or consistent with ethics.

Fortunately, under the current globalization of China and the public's shift in social values towards Western culture, the government, though still possessing a centralized power, cannot do everything it wants. Although it is not easy for Chinese citizens to oppose government resolutions, there have been many cases where governments need to reconsider or withdraw their decisions to meet the needs of the people (Creemers, 2018). For example, the government's

closing of Tencent's social credit trial and condemning Alibaba in response to increasing concerns about the privacy of users on mainstream online platforms has further emphasized the need to ensure the rights of citizens (Creemers, 2018). Of course, this does not guarantee that the centralized government will gradually tighten its governance in the unknown future. However, conjecturing too much into the future risks disguising true problems, such as whether the law is correct instead of whether the SCS is violating the law (Backer, 2018). As mentioned earlier, while some liberal democracies are utilizing unnoticeable social control techniques to guide the public (Creemers, 2018), putting China at an extreme end of the spectrum of authoritarianism might misguide people to accept novel systems and technologies that are "slightly less intrusive" than the SCS (Daum, 2019b).

VI. Summary

This article discussed the foundation, background and controversy behind the Social Credit System. The SCS, supplanting traditional regulatory laws based on commanding and obedience, is a novel governance mechanism that China is implementing to promote "sincerity" in its economic and social environment. If the system is implemented as stated in the 2014 State Council document, it will affect five stakeholders-the Chinese government, Chinese companies, Chinese citizens, foreign countries and foreign companies-and address the repeated development issues China has been facing, such as commercial fraud, food safety, etc. The SCS is not a novel system developed by the Chinese government, because similar products, such as credit rating systems, have long been adopted by the West. However, SCS differs from existing credit rating systems in two aspects. First, it aims to promote socialist ideas and ethics in economic and social activities, rather than focusing solely on economic objectives. Second, the SCS is a collection of

subsystems implemented by local governments and technology companies, while rating systems are usually owned by Western private sectors.

These differences have led to discussions about whether the SCS is a blessing in technology or an "Orwellian" nightmare. Although there are misconceptions in the western reports, these concerns cannot be ignored given China's centralized political structure and undemocratic social environment. For example, pilot projects have revealed problems of unclear boundaries of government rights and lack of laws during data collection, algorithm determination and punishment judgements. Nevertheless, even though the CCP has clearly expressed its belief in social intervention methods of social engineering, the current SCS is a patchwork of regional experiments rather than a centralized mastering machine with a single score for every citizen. In addition, with China 's globalization and the shift of public preference from social stability to free speech, there are many cases of government reconsidering or abolishing policies in response to citizens 'rejection. Of course, this does not guarantee whether the centralized government will gradually strengthen its governance in the unknown future. In fact, problems may arise not only in China, but also in some liberal democratic countries that are using unnoticeable social control techniques to guide the public (Creemers, 2018).

Considering China's political landscape, social issues, and gaps with the rest of the world, the SCS may be a necessary product. However, improvements should be made to further protect human rights and prevent abuse of rights. In this regard, the article recommends the establishment of a third-party SCS agency that is independent of all stakeholders and supported by the legislature at the end.

VII. Bibliography

- Backer, L. C. (2008). Global Panopticism: States, Corporations, and the Governance Effects of Monitoring Regimes. *Indiana Journal of Global Legal Studies*, 15(1), 101–148.
Retrieved from
<https://www.repository.law.indiana.edu/cgi/viewcontent.cgi?article=1368&context=ijgls>
- Backer, L. C. (2013). Transparency and Business in International Law: Governance between Norm and Technique. In A. Bianchi & A. Peters (Eds.), *Transparency in International Law* (pp. 477-501). Cambridge: Cambridge University Press.
doi:10.1017/CBO9781139108843.026
- Backer, L. C. (2019, October 7). "Social Credit and Foreign Enterprises Along the Silk Road": Remarks prepared for a Lecture Delivered at the Institute for East Asian Studies Cologne, Germany October 2019. Retrieved from <http://lcbackerblog.blogspot.com/2019/10/social-credit-and-foreign-enterprises.html>
- Backer, L. C. (2018). Next Generation Law: Data Driven Governance and Accountability Based Regulatory Systems in the West, and Social Credit Regimes in China. Retrieved from <http://dx.doi.org/10.2139/ssrn.3209997>
- Creemers, R. (2015, April 25). Planning Outline for the Construction of a Social Credit System (2014-2020). Retrieved from
<https://chinacopyrightandmedia.wordpress.com/2014/06/14/planning-outline-for-the-construction-of-a-social-credit-system-2014-2020/>
- Creemers, R. (2018). China's Social Credit System: An Evolving Practice of Control. Retrieved from https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3175792

- Daum, J. (2019a). Keeping track of social credit. Retrieved from <https://www.chinalawtranslate.com/en/keeping-track-of-social-credit/>
- Daum, J. (2019b). Untrustworthy: Social Credit Isn't What You Think It Is. Retrieved from <https://verfassungsblog.de/untrustworthy-social-credit-isnt-what-you-think-it-is/>
- Gertz, B. (2019, December 9). 'Social credit score': China set to roll out 'Orwellian' mass surveillance tool. Retrieved from <https://www.washingtontimes.com/news/2019/dec/9/social-credit-system-china-mass-surveillance-tool-/>
- Grant, T. (2018, May 7). The West could be closer to China's system of 'social credit scoring' than you think. Retrieved from <https://thehill.com/opinion/technology/386524-the-west-could-be-closer-to-chinas-system-of-social-credit-scoring-than>
- Horsley, J. (2018, November 16). China's Orwellian Social Credit Score Isn't Real. Retrieved from <https://foreignpolicy.com/2018/11/16/chinas-orwellian-social-credit-score-isnt-real/>
- Horwitz, J. (2017, August 9). China's Tencent is quietly testing a "social credit score" based on people's online behavior. Retrieved from <https://qz.com/1049669/chinas-tencent-hkg-0700-is-quietly-testing-a-social-credit-score-based-on-peoples-online-behavior/>
- Liang, F., Das, V., Kostyuk, N., & Hussain, M. (2018). Constructing a Data-Driven Society: China's Social Credit System as a State Surveillance Infrastructure. *Policy & Internet*, 10(4). Retrieved from <https://doi.org/10.1002/poi3.183>
- Liang, Z. (1989). Explicating law: comparative perspective of chinese and western legal culture. *Journal of Chinese Law*, 3(1), 55–92. Retrieved from <https://heinonline.org/HOL/Page?handle=hein.journals/colas3&id=105&collection=journals>

- Ma, A. (2018, October 29). China has started ranking citizens with a creepy 'social credit' system - here's what you can do wrong, and the embarrassing, demeaning ways they can punish you. Retrieved from <https://www.businessinsider.com/china-social-credit-system-punishments-and-rewards-explained-2018-4/?r=UK>
- Ma, S. (2019). Research on Government Responsibility in the Construction of Personal Social Credit System (个人信用体系建设的政府责任研究). Retrieved from <https://kns.cnki.net/KCMS/detail/detail.aspx?dbcode=CMFD&dbname=CMFD202001&filename=1019670872.nh&v=MDcxMjBGckNVUjdxZlpPUm9GQ3ZtVjd2UFZGMjZGN1cvSHRuTHJaRWJQSUI4ZVgxTHV4WVM3RGgxVDNxVHJXTTE=>
- Marr, B. (2019, January 21). Chinese Social Credit Score: Utopian Big Data Bliss Or Black Mirror On Steroids? Retrieved from <https://www.forbes.com/sites/bernardmarr/2019/01/21/chinese-social-credit-score-utopian-big-data-bliss-or-black-mirror-on-steroids/#2f8cd30e48b8>
- Matsakis, L. (2019, October 25). How the West Got China's Social Credit System Wrong. Retrieved from <https://www.wired.com/story/china-social-credit-score-system/>
- O'Leary, M. (2020, February 25). State Farm Drive Safe and Save review: Are drivers saving money? Retrieved from <https://clearsurance.com/blog/state-farm-drive-safe-and-save-review>
- Peng, P. (2006). *Credit System in China* (dissertation).
- Qu, Z. (2015). The Political Logic of Contemporary Chinese Legal Regimes. Retrieved from <http://kreader.cnki.net/Kreader/CatalogViewPage.aspx?dbCode=cdmd&filename=1015589389.nh&tablename=CDFDLAST2015&compose=&first=1&uid=>

The World Bank In China. (2019, December 13). Retrieved from

<https://www.worldbank.org/en/country/china/overview>

Willis, H. E. (1926). A Definition of Law. *Articles by Maurer Faculty*. Retrieved from

<https://www.repository.law.indiana.edu/facpub/1250/>

Zhou, J. (2012). Study on Development of China's Economy View of Internal and External

Imbalance. Retrieved from

<https://kns.cnki.net/KCMS/detail/detail.aspx?dbcode=CDFD&dbname=CDFD1214&filename=1013007848.nh&v=Mjg0OTVsVlx6TFZGMjZlYk80R2RuSXA1RWJQSXI4ZVgxTHV4WVM3RGgxVDNxVHJXTTFGckNVUjdxZlpPZG9GaXo=>