China's Social Credit System: Levels of Approval of Chinese and Dutch Citizens

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EXECUTIVE SUMMARY

In 2014, the Chinese State Council announced the implementation of a so-called 'Social Credit System' (SCS), which would attach a 'Personal Credit Score' (PCS) to every Chinese citizen and business (Hvistendahl, 2017). Depending on one's PCS, which would be influenced by behaviours considered 'desired' or 'undesired', individuals would be rewarded or punished (e.g., cheaper/more expensive loans, faster/slower bureaucratic processes, being redlisted/ blacklisted[1] etc.) [2] (Creemers, 2018; Kobie, 2019; Drinhausen & Brussee, 2021). As a result, 'desired' behaviours would be incentivised, and 'undesired' behaviours would be discouraged (Creemers, 2018). Although at the time of writing the 'full' SCS – as outlined in "Guidelines of Social Credit System Construction (2014-2020)" – has not been implemented yet, the SCS has received a lot of criticism.

As presented in the "Guidelines of Social Credit System Construction (2014-2020)", the SCS comprises multiple and different social credit systems (SCSs) run by governmental as well as commercial actors, that will together, by collection and sharing of data collection and sharing, form the 'full' SCS. What, when, how and with whom data is shared has not been specified and remains opaque at the moment of writing. Mostly because of this opaqueness combined with the fact the system makes use of online and offline surveillance technologies, makes that the system is often portrayed as a 'mass-surveillance tool' facilitating development of an 'Orwellian[3] state. Induced by this image, concern with regard to disproportional sanction, suppression of minorities (e.g., Uighurs), predictive policing and privacy and autonomy of individuals are raised (Creemers, 2018; Devereaux & Peng, 2020; Drinhausen & Brussee, 2021; Hockett, 2019; Hoffman, 2017; Kobie, 2019; Lyon, 2016; Wong & Dobson, 2019). Yet, line of reasoning advocating implementation used by the CCP seems to tap into an opposite, benefit generating dimension as the CCP states the SCS addresses three existential issues China is facing today: 1. instability of the financial credit sector, 2. limitations in financial services, and 3. threats of social instability.

In order to address these issues, the SCS would (re)shape the financial credit sector, by increasing the collection and centralization of (personal) data, which would result in increased control and transparency (State Council of the People's Republic of China, 2015; Horsley, 2018; Diab, 2017; Meissner, 2017; Devereaux & Peng, 2020; Drinhausen & Brussee, 2021). Social instability would be addressed by rewarding good behaviours and punishing bad ones[4], eventually inducing mechanisms of self-regulation (Wübekke et al., 2016).

On account of the differentiating views that are present on the SCS, it is of interest how the SCS is perceived by Chinese citizens themselves and therefore, whether they perceive the system as 'suppressive' or as 'beneficial'. Accordingly, this thesis has studied the opinion of Chinese citizens on the SCS. Therefore, more specifically, this thesis has studied approval of the SCS among Chinese citizens.

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[1] Being 'redlisted' indicates one is perceived to be a model citizen performing exemplary behaviour, whereas being 'blacklisted' indicates one is perceived to be a(n) unworthy citizen performing non-exemplary behaviour
[2] Ex.: If an individual is caught jaywalking (*undesired behaviour*), his PCS will decrease after which he/she will experience higher interest on his/her loans (*punishment*)
[3] Used to describe a political system in which the government tries to control every part of people's lives, similar to that described in the novel "Nineteen Eighty Four", by George Orwell (*Cambridge Dictionary*)
[4] From what is known from existing literature behaviour the SCS keeps track off, ranges from financial transactions and social media activity, to how often you walk your dog or if you sort your waste properly (Ma, 2018; Wübbeke et al, 2016). Benefits given to 'trustworthy' persons include: cheaper mortgage loans, discounts or faster bureaucratic processes (Kobie, 2019; Devereaux & Peng, 2020). Drawbacks that can be faced are: denied access to high-speed travel or more expensive mortgage loans (Kostka, 2019; Wong & Dobson, 2019).

It has done so by conducting a survey among Chinese respondents (research group), in addition of a group of Dutch respondents (control group), to provide the study with a comparative aspect. Questions that were included went into trust, privacy and functioning of SCSs. A total sample of 352 Chinese respondents and 347 Dutch respondents was collected.

Within the Chinese sample an overrepresentation of male respondents was observed and within the Dutch sample an overrepresentation of female respondents was present. Both samples were found to be far younger and far more highly educated compared to the average population of each country. With respect to representativeness of trust-levels, the Chinese respondents appeared to be less government trusting, whereas the Dutch respondents reported a higher level of trust compared to the population average. As responses were not weighted, all skews present in the sample were not compensated for. Therefore bias might be present.

The main finding of this research has been that 'Chinese respondents show high-levels of approval' and 'Chinese respondents show higher levels of approval compared to Dutch respondents'. As the share of disapproving respondents is almost neglectable (3.4%), a substantial share of Dutch respondents reported disapproval (23.86%). Possibly this very small share of disapproving Chinese respondents can be accounted for by the authoritarian context as fear of sanctions might be present when the State/Party is criticized. A more satisfying explanation can be derived from explanatory factors that resulted. Explanatory factors that were identified are: 1. whether an individual perceives the SCS to improve 'accountability taken for actions' and 2. whether an individual perceives the SCS to improve 'quality-of-life'. Thereupon, it can be concluded Chinese individuals perceive the SCS more through a 'frame of benefit-generation', explaining the observed higher levels of approval.

Furthermore, Chinese respondents reported a nationwide SCS should be run by the government, which also supports this finding of Kostka (2019). Moreover, additional explanatory correlates that were found for the Chinese sample are trust in government with personal data, perceived fairness of scoring, and one's perceived score compared to friends and family. All four variables show a positive relationship with approval. As a nationwide SCS should be run by the government and 'higher trust in the government' and 'trust in the government with personal data' are positively associated with approval, privacy concerns of approving Chinese respondents most likely is low (or even absent) for government-run SCSs.

Consequently, if the outcome of this study is interpreted, the Chinese government is provided with the insight SCSs are highly approved as SCSs are perceived to increase accountability taken for actions and quality-of-life improving. Therefore, SCSs will likely increase social stability the Chinese government would be recommended to proceed with implementation of the SCS. Furthermore, if the findings with respect to Dutch respondents are considered, the Dutch government is provided with the insight SCSs are not highly approved, nor highly disapproved. However, as a relatively large group of 'strongly disapproving' respondents is present, social stability might be at stake for which recommendation would be not to use/implement SCSs.

In addition to a governmental interpretation, this study can also be understood from a more corporate point of view. With increasing demand by citizens, societies and governments of pension funds, banks, and other asset managers to justify investments on basis Environmental, Societal, and Governance (ESG) requirements, one could question whether investment in companies involved in the SCS (e.g., Alibaba, Tencent, Baidu etc.), would meet those ESG requirements. Mainly as a lot of criticism has been present on the SCS, going into human rights (privacy, autonomy and liberty), whether investing in companies involved, possibly contributing to those infringements, meets (ESG) requirements, can be questioned.

Accordingly, this study provides a comprehension from which it can be argued investing in companies involved in the SCS can be justified. By showing high approval is present among Chinese citizens, the SCS seems to be perceived as beneficial to Chinese citizens/society. Therefore, as the majority perceives the SCS as beneficial, one could argue from a Utilitarian point of view that utility is maximized, by which investing in companies involved can be justified.

At last, when implications regarding proceeding with implementation and the justification of investment are taken into account two things should be noted. At first, one should be aware it can still be debated whether no human rights are violated, as by approval of a majority suppression of minorities and disproportional sanction cannot be excluded. Second, because massive data-collection is used by the SCS, this might have (future) implications that are not known yet, which, if they were known already, citizens would not consent to. Examples of implications that could be thought of are the possible (future) use for predictive policing or other social management uses that are enabled by the massive collection and analysis of data that might constrain an individual's liberty or autonomy.

ABSTRACT

In 2014 the Chinese government announced implementation of a so-called 'Social Credit System' which should solve three existential threats China is facing: 1. instability of the financial credit sector, 2. limitations in financial services, and 3. threats of social instability. By increasing the collection and centralization of (personal) data, which would result in increased control and transparency, the financial sector should be stabilized and penetration of financial services should increase. Additionally, social instability would be addressed by social management, in which good behaviours are rewarded and bad ones are punished, eventually inducing mechanisms of self-regulation. Although the system aims to solve existential issues China struggles with, the system has gotten a lot of criticism mainly coming from non-Chinese sources. Whereas most studies have focused on how the systems works, aim of this thesis has been to provide insight into the opinion and approval of individuals on SCSs. Based on a survey conducted among Chinese and Dutch respondents strong and higher levels of approval were found among Chinese respondents. Mostly, this higher approval among Chinese respondent can be attributed to the almost negligible share of disapproving Chinese respondents. An explanation to the lower share of disapproving Chinese respondents can be found in the explanatory factors that were identified for both samples, which are: 1. perception whether SCSs would increase accountability taken for actions, and 2. perception whether SCSs increase quality-of-life. As both variables were positively correlated with approval, the correlates show Chinese respondents perceive SCSs more as benefit-generating than Dutch respondents. Furthermore, another interesting correlate showing a positive relation which was only found for the Chinese sample, is trust in government with personal data. As Chinese respondents also reported a nationwide SCS should be run by the government, privacy concerns of approving Chinese respondents most likely is low (or even absent) for government-run SCSs.

Table of Contents

CHAPTER 1: Introduction

In 2014, the Chinese State Council announced the implementation of a so-called 'Social Credit System' (SCS), which would attach a 'Personal Credit Score' (PCS) to every Chinese citizen and business (Hvistendahl, 2017). Depending on one's PCS, which would be influenced by behaviours considered 'desired' or 'undesired', individuals would be rewarded or punished (e.g., cheaper/more expensive loans, faster/slower bureaucratic processes, being redlisted/blacklisted[6] etc.)[7] (Creemers, 2018; Kobie, 2019; Drinhausen & Brussee, 2021). As a result, 'desired' behaviours would be incentivised, and 'undesired' behaviours would be discouraged (Creemers, 2018). Although at the time of writing the 'full' SCS – as outlined in "Guidelines of Social Credit System Construction (2014-2020)" – has not been implemented yet, the SCS has received a lot of criticism.

As presented in the "Guidelines of Social Credit System Construction (2014-2020)", the SCS comprises multiple and different social credit systems (SCSs) run by governmental as well as commercial actors, that will together, by collection and sharing of data collection and sharing, form the 'full' SCS. Which, when, how and with whom data is shared has not been specified and remains opaque at the moment of writing. Mostly because of this opaqueness combined with the fact the system makes use of online and offline surveillance technologies, makes that the system is often portrayed as a 'mass-surveillance tool' facilitating development of an 'Orwellian[8] state. Induced by this image, concern with regard to disproportional sanction and privacy and autonomy of individuals are raised (Creemers, 2018; Devereaux & Peng, 2020; Hockett, 2019; Kobie, 2019; Wong & Dobson, 2019). Yet, line of reasoning advocating implementation used by the CCP seems to tap into an opposite, benefit generating dimension, as the CCP states the SCS addresses two problems endemic to Chinese society: a lack of 1. access to financial credit and 2. trust between citizens (Creemers, 2018; Cohn, Maréchal, Tannenbaum & Zünd, 2019; Honohan & King 2012).

On account of these differentiating views on the SCS it is of interest how the SCS is perceived by Chinese citizens themselves and therefore, whether they perceive the system as 'suppressive' or as 'beneficial'. Accordingly, this thesis will study the opinion of Chinese citizens on the SCS. In order to do so, first the problems the SCS is ought to solve according to the CCP, how the SCS is ought to solve these problems, as well as the critiques and concerns need to be explored.

SCS as a Solution to Existential Issues

The two problems the SCS is ought to solve, as brought forward by the CCP, touch on three existential issues China is facing today: 1. instability of the financial credit sector, 2. limitations in financial services, and 3. threats of social instability. To address these issues, the SCS would (re)shape the financial credit sector, by increasing the collection and centralization of (personal) data, which would result in increased control and transparency (Devereaux & Peng, 2020; Diab, 2017; Drinhausen & Brussee, 2021; Horsley, 2018; Meissner, 2017; State Council of the People's Republic of China, 2015). Social instability would be addressed by rewarding

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[6] Being 'redlisted' indicates one is perceived to be a model citizen performing exemplary behaviour, whereas being 'blacklisted' indicates one is perceived to be a(n) unworthy citizen performing non-exemplary behaviour

[7] Ex.: If an individual is caught jaywalking (*undesired behaviour*), his PCS will decrease after which he/she will experience higher interest on his/her loans (*punishment*)

[8] Used to describe a political system in which the government tries to control every part of people's lives, similar to that described in the novel "Nineteen Eighty Four", by George Orwell (*Cambridge Dictionary*)

good behaviours and punishing bad ones[9], eventually inducing mechanisms of self-regulation (Wübekke et al., 2016).

(Re)shaping the Financial Credit-Sector

As the Evergrande insolvency crisis[10] has shed light on, most likely the most existential of the problems the SCS should solve is to restore trust in and (re)structure the financial credit sector. Issues faced in this sector, and which are faced in other industries as well, mainly originate from the transition of China to a market economy (Hvistendahl, 2017; Wedeman, 2017). As during this transition the Chinese state has failed to develop sufficient regulatory capacity, trustworthiness of services provided by the industry diminished (Hvistendahl, 2017; Wedeman, 2017). In the case of China's real-estate market, among which Evergrande, regulatory gaps originating from this transition facilitated politically- and power-oriented lending. As a part of China's 'state capitalism' economic growth needed to be ensured, growth targets were set by the central government, resulting in local governments trying to deliver. With the real-estate market comprising more than 25% of economic output, by pumping up their real-estate markets these targets could be met (Browne, 2021). As a consequence, as illustrated by Evergrande, banks softened credit terms towards political and powerful interests from which disproportionate lending resulted and unhealthy levels of indebtedness could be obtained (Park & Sehrt, 2001; Browne, 2021).

Alongside issues that are faced in the (Chinese) financial credit sector, major effects of the Evergrande crisis are and could also be felt elsewhere. With employees that aren't being paid, future home-owners that don't see their investment pay off, and multiple large-scale projects that most likely will not be finished, harm is increasingly felt by Chinese citizens (Vervaeke, 2021a). Moreover, although it is expected consequences of the instability in the Chinese financial sector will most likely mainly be faced in China itself, with fear being present of Evergrande becoming the next 'Lehman Brothers', it could as well become a crisis of which shocks are felt worldwide[11] (Farrer & Ni, 2021).

In order to regain control over the financial sector, the SCS should increase transparency on lenders (and governmental actors) by collection/centralization of data. As a result, the softening terms of loans due to politically or powerful interests should be restricted from which increased stability in the Chinese financial sector (and the real-estate market) should follow (Vervaeke, 2021b).
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A second problem the SCS should solve - also concerning the financial credit sector - is the absence of overall access to financial credit. In countries like The Netherlands, other EU countries and the US financial credit (scores), which are based on traditional[12] data, are greatly developed and used, for instance when obtaining a credit card. Nevertheless, in the largest part of China use of such methods has not proofed sufficient in tackling the above-named problems yet. As a result, traditional banks have not been able to grant loans, excluding a large share of

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[9] From what is known from existing literature behaviour the SCS keeps track off, ranges from financial transactions and social media activity, to how often you walk your dog or if you sort your waste properly (Ma, 2018; Wübbeke et al, 2016). Benefits given to 'trustworthy' persons include: cheaper mortgage loans, discounts or faster bureaucratic processes (Kobie, 2019; Devereaux & Peng, 2020). Drawbacks that can be faced are: denied access to high-speed travel or more expensive mortgage loans (Kostka, 2019; Wong & Dobson, 2019).

[10] From more recent developments it appears Evergrande is far from the only real estate company facing an insolvency crisis, as it appears only 5 out of 52 large real estate companies active in the Chinese real estate market qualified as 'healthy' (Eigenraam, 2021a)

[11] As insolvency issues appear to take hold of almost the full Chinese real-estate sector, fear of shocks felt in the global financial sector are increasing (Stevenson & Dong, 2021)

[12] Traditional data is the data traditionally used for creditworthiness assessment and includes bill-payment history, current unpaid debt, loan account information, and credit history (*What Is a Credit Score,* 2021)

Chinese citizens from benefits obtaining financial credit might yield. Confronted with very limited or no access to financial credit consequences are especially faced by Small- and Medium-sized Enterprises (SMEs), low-income families and individuals living in rural areas (Jing, 2014). As causing factors of this low penetration of financial services provided by traditional Chinese banks, two main contributors have been identified which the SCS should overcome: 1) informational opacity, which is the limited availability of personal information to credit lenders and 2) relatively high transaction costs associated with those borrowers (Adams & Nehman, 1979; Jing, 2014; Rogaly, 1996; Stiglitz & Weiss, 1981). In the past decade several 'big data firms' such as Alibaba and Tencent have started to enter this market and have started to grant (micro) credit to customers. Whereas traditional banks are reliant on traditional data to provide in financial credits, these micro-credit lenders started to make use of alternative[13] data available from purchases in their e-retail (Genser & Bailey, 2020; Yuang, 2018) . By doing so these firms have proved able to gain sufficient knowledge on customers, even in more rural areas, to provide in credits Chinese banks are still not capable of.

Although one might argue the problem of limited access to credit has already been solved by micro-credit lenders like Alibaba and Tencent stepping in, it is feared downsides of originally non-financial enterprises granting loans will present themselves (Genser & Bailey, 2021; Staff, 2021). As different regulations apply to micro-credit lenders, since they are classified 'non-financial' institutions, threat of a crisis like the insolvency crisis in the real estate sector need to be anticipated on. Therefore, by increasing collection/centralization of (alternative) data available through these platforms, the SCS should provide traditional banks with enough information to be able to increase this overall access to financial credit (Horsley, 2018). Not only will this give Chinese citizens more opportunities to get mortgage loans and thus buy houses, it should also serve as a tool to foster innovation, incentivise rural Chinese to build businesses, increase consumption, and help further develop the Chinese economy (Kostka, 2019; Kshetri, 2015; Wübbeke et al., 2016).

Invoking Social Stability

Furthermore, a third aim ascribed to the SCS is related to the increasing threat of social instability[14] to develop. Digitalization of societies (ex. social media) has made it easier to formulate and share opinions, propagate (differentiating) political views, and thereby, to assemble for protest. As a result, it has proven harder to achieve/ensure social harmony (Lim et al., 2014), as marked by the demand for more political freedom in Hong Kong[15]. In order to restore the diminished control over individuals (and their political interests), the SCS should provide serve as a tool that decreases the threat of social instability to develop. By means of increased collection and centralization of data, exerted control over individuals (and their political interests) mainly in online environments, should increase (Kostka, 2019).

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[13] Alternative data might include rent/mobile phone or other similar payments, bank account information such as withdrawals or deposits, and other information less closely tied to an individual's financial conduct such as education, occupation or social network (Kreiswirth et al., 2017)

[14] Social instability should not be seen as a threat that is solely seen as a threat by the CCP since it is an authoritarian regime, also for countries like The Netherlands social instability is highly unwanted by government leaders since it takes away the 'right to rule'. A difference, however, is that in most countries you

[15] Although this might and maybe should not be seen as a problem, due to the social instability it causes it certainly is seen as a problem by the CCP

Criticism of the SCS

Although the system is introduced by the Chinese state as a system to solve existential issues, the system is often depicted as a(n) 'Orwellian'[17] and/or 'Dystopian'[18] nightmare by many non-Chinese sources (Hockett, 2019; Kobie, 2019; Mosher, 2019). Foremost, as subjects are surveyed in both offline and online surroundings and the fact that lots of personal data are gathered (and stored) has evoked concerns. Therefore, concerns that are present mostly tap into privacy of subjects, transparency of the system, its scoring mechanism, and the degree of autonomy subjects would be able to maintain. With the Chinese Communist Party (CCP) being the one in full control over development , implementation and the scoring mechanism of the system, one of the critiques heard most often is that the actual purpose of the system is to increase the CCP's autocratic power (Xie, 2019). It is proclaimed the SCS will be implemented "to align all citizens with the CCP's ideals and to punish dissidents from those ideals" (Devereaux & Peng, 2019). Furthermore, rumours the system would make use of disproportional sanction, possibly leading to suppression of minorities (ex. Uighurs), and will be used for predictive policing are worrying (Creemers, 2016; Devereaux & Peng, 2019; Drinhausen & Brussee, 2021; Hoffman, 2017; Lyon, 2016;).

Nevertheless, despite these criticisms being well-grounded, China also needs to deal with the three issues discussed above. As these issues are likely not to be solved, or at least not solved yet, by existing (proven) frameworks, alternative and/or additional measures are needed, as will be apparent from the section discussed below (Drinhausen & Brussee, 2021).

Why would (additional) measures / the SCS be needed?

As has become clear over the past decades, not only the Chinese financial sector faces problems in regulatory capacity. Flaws in regulatory mechanisms that secure trustworthiness of industries have appeared present in multiple other industries. An illustrative example of this, is provided by the milk scandal that occurred in 2008. As milk powders had been contaminated with melamine 300,000 babies in China were diagnosed with health complaints, of which six even died due to severe kidney damage (Jacobs, 2008; Huang 2014). The Chinese dairy industry being responsible for such harm and loss of life led to large damage in the reputation of Chinese food exports, but was also noticed by trust issues towards the industry in China itself. More than 100 foreign food brands entered the Chinese market and Chinese preferably bought milk powder from foreign producers - and still do - and in foreign countries like New Zealand and The Netherlands (Huang, 2014).

As the food industry has not been the only industry that faced regulatory issues examples of problems that have emerged are plentiful. High-profile cases that could be thought of range from other health related cases, such as the SARS endemic, to the stealing of intellectual property and design flaws leading to collapsing bridges or crashing trains (BBC, 2011; Canaves, 2009; Clancy, 2021; Perkowski, 2012; Zhuang, 2013). As all these cases have contributed to the widespread mistrust of Chinese companies, organizations and other individuals, it is apparent trust issues are faced in many more aspects of Chinese daily life (Clancy, 2021; Cohn, et al., 2019; Liang et al., 2018).

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[17] Used to describe a political system in which the government tries to control every part of people's lives, similar to that described in the novel "Nineteen Eighty Four", by George Orwell (*Cambridge Dictionary*)

[18] Relating to or denoting an imagined state or society where there is great suffering or injustice, especially an imaginary society in the future, or to the description of such a society (*Cambridge Dictionary*)

As is shown by cross-national large-scale studies doing research on honesty and trust, Chinese appear to score lowest on trustworthiness[19] among individuals (Cohn et al., 2019; Hugh-Jones, 2015). Thereupon, other studies that did research on what consequences this lack of trustworthiness might bring, have found that Chinese individuals tend to have difficulties in trusting one another, especially when one is not familiar, leading to non-cooperative behaviour (Curry, Chesters & Von Lissa, 2019; Fessler et al., 2015). Examples in Chinese daily life that flow from this lacking trustworthiness and cooperative behaviour are plentiful, of which people smoking in trains and airplanes, making too much noise in public spaces and many not shunning fraudulent acts are just few examples. However, as is shown by Hugh-Jones (2015), consequences are not only faced simply in the form of 'rude' or 'antisocial' behaviour, but also result in constrainment of economic growth[20].

Can the SCS be ethically justified?

Due to no clear description being published by the Chinese state or being available elsewhere and with the system being enigmatic in itself, the system remains opaque (Chen & Cheung, 2017). Although this opaqueness might prevent gamification and therefore, might be part of and contribute to functioning of the system, the limited information on how the system works does not take away concerns that are present. In spite of knowing the issues the SCS should solve, critiques are not answered to either. As long as it is not known how data is handled, how a PCS is calculated, what surveillance techniques are used, and how different SCSs are integrated, the system remains too opaque to take away concerns or answer to critique. Mainly with regard to privacy, possibility of disproportional sanction and what purposes it is/can be used for, concerns remain valid. Also, in order to know whether the problem could indeed function as a solution to seemingly unrelated problems more information is needed and as behaviour is qualified as 'desired' or 'undesired' by the authoritarian CCP itself, how this is done is of severe interest. More information on what data is gathered, how it is gathered and what the gathered data can be used for is key. Accordingly, knowledge on how a PCS calculated, what possibilities subjects have to object if unfairness is perceived, and whether this leaves opportunity for disproportional sanction and/or suppression of minorities are crucial to take away criticism being present.

Nevertheless, as it seems rather easy to criticise from a remote position, it would be critical to know what subjects of the system think about the system themselves. Do they perceive the system as beneficial and thence as an improvement to quality-of-life? Does it lead to more accountability taken for one's actions? Do they perceive the system as fair? And most importantly, do they approve the SCS?

Outline of Thesis

To provide answers to those questions, this thesis will first provide an extensive literature review on the SCS itself, in which more information on how the system works, predecessors of the system, and other relevant information is gathered (*Appendix I*). Accordingly, after an extensive overview of the system itself was created, this thesis aims to study the views of Chinese citizens (*research group*) on SCSs and compare those views with those of Dutch citizens (*control group*), which is done by addressing the following research questions:

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[19] defined as "*the ability to be relied on as <u>honest</u> or truthful*

[20] As China has known huge economic growth rates over the past decades, one might argue no such effects are noted in China. Although this might be the case, it might as well be possible the huge economic growth, resulting from the large (unexploited) potential of China's economy, might have submerged the effects of non-cooperative behaviour. Also, as it will become harder to maintain the past levels of economic growth as more of the potential is exploited, promotion of cooperative behaviour might help in preserving of future economic growth.

Main Research Question: *"What are approval rates of the Social Credit System (SCS) among Chinese citizens?"*

- **Sub RQ 1**: *"Are there differences in approval between Dutch and Chinese citizens?"*

- **Sub RQ 2**: *"If differences are present, can explanatory factors be identified?"*

The first step in addressing these research questions has been to study already existing literature on the SCS itself, which is discussed in *chapter 2*. After a comprehensive view over the SCS was created, prior research on 'approval of SCSs' was studied, which is discussed in *chapter 3*. Accordingly, on basis of the literature that was studied a methodology was constructed, discussed in *chapter 4*. In this chapter formulated hypotheses (*section 4.1*), design of the questionnaire (*section 4.2*), and participants (*section 4.3*) are covered. Subsequently, data analyses were performed to come to empirical findings. On basis of those findings results were formulated, which are discussed in *chapter 5*. Hereinafter, possible explanations, limitations and a reflection on the study will be discussed in *chapter 6* and at last, in *chapter 7*, a conclusion on results of this thesis will be drawn.

CHAPTER 2: A Review of the Literature on China's Social Credit System

This section will contain a review of the literature and will mainly focus on the SCS itself and partly on literature going into approval of the system. Although, it will be hard to fully unfold the SCS and to get to know all ins and outs. Mostly due to the nature of the system, which is not only complex but, with many 'unknowns' likely contributing to functionality of the system, also enigmatic in itself (Chen & Cheung, 2017). Moreover, absence and opaqueness of information, information only being available in Chinese, and the fact the system is still in development don't contribute to unfolding the system either. Nevertheless, this literature review will try to get a grasp. It will do so by trying to answer the following questions: What is it? Why is it? How is it developed? How does it work? What actors are involved? What possible concerns need to be scrutinized? And what do we know about approval of the system?

2.1 Introduction

The Social Credit System (*shehui xinyong tixi* – SCS) is a social management program announced as a key component of legal reforms by the Chinese Communist Party during the 4th Plenum in 2014. The SCS is a mass surveillance tool that will be used as a technology-empowered means of governance by the Chinse State. As was described in the planning outline of the SCS published by the Chinese State Council (*Planning Outline for the Construction of a Social Credit System (2014-2020)*, 2015), the system will be constructed to "establish the idea of a sincerity culture, and promoting honesty and traditional virtues, it uses encouragement for trustworthiness and constraints against untrustworthiness as incentive mechanisms, and its objective is raising the sincerity consciousness and credit levels of the entire society". By means of attributing every Chinese citizen and corporation with a personal Credit Score (PCS), accompanied by punishments and rewards, the system should provide feedback to subjects based on trustworthiness and lawfulness of their economic, social and political actions.

To get a better insight in why the system is developed and what it comprises, first, the problems the SCS should overcome and the accompanying objectives will be evaluated. Second, the development process will be examined. Third, the technological perspective will be looked at and lastly, the concerns and criticism regarding the system will be discussed.

2.2 Problems to Overcome and Objectives of the SCS

Development of the SCS can be seen as a response of the Chinese state to certain problems it has faced over the past decades. Problems that are aimed to overcome are not just in the fields of politics and society, but also the economy seems to play an important role. This section will discuss the main objectives and the underlying problems that these objectives arise from. The first objective that has been identified concerns the increase of access to financial credit and this objective will be discussed first. Second, the objective that concerns social management, focusing on trust, lawfulness and cooperative behaviour in Chinese society will be examined. Conclusively, possible political objectives and incentives of the CCP will be debated.

2.2.1 Financial Credit

The SCS has mainly been associated with the feature of overcoming trust and virtue issues in Chinese society and economy (Creemers, 2018; Kobie, 2019; Wong & Dobson, 2019;

Devereaux & Peng, 2020). A perhaps even more important feature, however, could be the creation of a financial credit system that will increase access to financial credit for Chinese citizens and businesses.

A problem China faced when the SCS was announced, was that it had a mostly cash-based economy where access to financial services was limited (Honahan & King, 2009). By 2012, two years before announcement of the SCS only 280 million (out of 1.351 billion) individuals were reported to have financial credit report (Zhou, 2012; *Population, total – China | Data*, 2021). These low penetration rates of financial services appear to have four main causes: lack of collateral, information opacity, high transaction costs mainly arising from inefficient processes, and disproportionate orientation of lending towards powerful and political interests (Adams & Nehman 1979; Rogaly 1996; Stiglitz & Weiss,1981; Kshetri, 2011).

The identified problems have appeared to be higher for individuals living in rural areas, low-income families and SME's. Where for the low-income individuals (and sometimes SME's) lack of collateral most likely creates the largest obstacle to access financial services, for rural individuals and SME's the largest hindrance is mostly created by informational opacity, which consecutively causes a more inefficient process and higher transaction costs (Kshetri, 2014). By the collection of all kinds of (alternative) data about every citizen and corporation the SCS should provide credit providers with enough and replacing[24] information to overcome the limitations created by information opacity and the (partly) related higher transaction cost due to inefficient processes.

In terms of the disproportionate lending oriented towards powerful and political interests, the SCS should provide more control in governance. Here one can think of lower barriers to obtain financial services for state-companies, often because the lending is politically motivated instead of based on regular economic factors (Park & Sehrt, 2001). Practices like these in the financial sector tend and might lead to corruption and should therefore be banned according to CCP ideals. By means of more information, more transparency and more self-regulation, the SCS is used as an instrument to banish the lending motivated primarily by political conditions.

Removing the information opacity and politically oriented lending in the financial system, should encourage Chinese to adopt financial credit and increase penetration of financial services (Devereaux & Peng, 2020). This in turn, should create a more credit-based economy, providing better chances for SME's and less wealthy citizens that were excluded from access to financial credit before. With the eyes of the CCP on 'Made in China 2025' the higher penetration of financial services plays an important role in the stimulation of economic growth and the harvesting of innovation.

In contrast to credit systems used in the US like the FICO score system, by which creditworthiness is based solely on financial actors such as payment history, amounts owed, length of credit history, new credit and credit mix (*What's in my FICO® Scores?*, 2019) creditworthiness by the SCS follows a more Schumpeterian view[25]. As Schumpeter (1939, 116-17) claims creditworthiness should not solely be based on financial aspects but should also be affected by the relationship between the lender and borrower (*relational banking*). Schumpeter argues that this personal relation contributes to creditworthiness assessment as it provides the

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[24] Although collateral might still be lacking, from (alternative) gathered data a citizen might have appeared a trustful and virtuous citizen that will and is able to repay its debt

[25] Schumpeter: "*the banker must not only know what the transaction is which he is asked to finance and how it is likely to turn out, but he must also know the customer, his business, and even his private habits, and get, by frequently "talking things over with him," a clear picture of his situation*"

lender with an improved insight into the situation of the borrower as the lender has more insight into the transaction he/she is asked to finance, the business (strategy), and private habits[26]. Although creditworthiness assessment used by the SCS will not be based on a 'true' personal relation between lender and borrower as described by Schumpeter, the assessment will include more personal information, such as social and political behaviour, on basis of which creditworthiness will be determined.

2.2.2 Social Management: Trust

As discussed above objectives of the SCS focus on economic, social and political aspects. An important notion here is that not only the lawfulness of one's actions is considered, but that trust and cooperative behaviour play a major role in what the system aims to achieve. In fact, this trust and cooperation is what the 'social' dimension entails, namely the incentivizing of individuals to act in a desired manner[27] not only by means of law but also by market mechanisms and self-regulatory regimes (Creemers, 2018).

This social dimension of the SCS comprises multiple areas in which it should exert influence to achieve its objectives. To better indicate to which underlying problems the objectives apply to, two main areas are distinguished: market economy and government affairs and politics. First, to better understand what is aimed to achieve by the SCS in terms of 'trust', first the notion of 'trust' needs to be understood. Secondly, the objectives in market economy will be discussed and at last the objectives that apply to government affairs and politics will be gone into.

Trust

To better understand what is aimed to achieve by the SCS in terms of 'trust', first the notion of 'trust' needs to be understood. 'Trust', as it is aimed for, should be defined in relation to 'trustworthiness', which is '*the ability to be relied on as honest or truthful*' (*Oxford Dictionary*). Presumably, since the SCS mainly focuses on behaviour and aims to make subjects *behave* trustfully, notion of how 'trust' is defined should not go into *being* trustful but *acting* trustful. As such, to define 'trust' as '*the ability of an individual or socially interacting entity to rely on someone or a(nother) socially interacting entity acting in an honest or trustful manner*' would better suit the goal that is aimed for by the SCS.

Market Economy

In the transition from a fully controlled to a market economy, Chinese authorities have faced many problems in enforcement of regulation and trust in and between industries. Most of the negative consequences are faced in China itself, like evasion of taxes, commercial and industrial fraud and lack of trust in financial transactions, commercial exchanges and personal interactions hampering commercial relations (Devereaux & Peng, 2020; Wong, 2019). Other issues are also faced outside Chinese borders. Examples of such are the large amount of counterfeit and low-quality products produced, food safety crimes in the food industry, theft of intellectual property and the neglection of environmental regulations (Creemers, 2018; Xie, 2018).

By punishment of unlawful and untrustworthy companies and by rewarding the lawful, trustworthy companies the SCS should enhance ability to enforce regulation and create a self-regulatory mechanism between companies and industries. Which in turn, should contribute to more trust and transparency inside and between businesses and industries, leading to higher

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[26] Although Schumpeter doesn't focus solely on private habits as a contribution to creditworthiness assessment, he surely argues private habits (e.g. more *alternative data*) affect creditworthiness of individuals

[27] 'Desired manner' entails 'desired' as formulated by the SCS and thence the State/CCP

efficiency in businesses themselves, but also as a result of an improved governing mechanism, enforcement of regulations (Creemers, 2018).

Government Affairs & Politics

In the area of government affairs, the Chinese state is trying to further tackle a problem it has faced over several decades and which will most likely have its attention as long as it is led by the CCP, namely dissent from the Party and corruption of Party officials. As a consequence, to strengthen support among Chinese citizens Xi Jinping has launched a high-profile anti-corruption campaign in 2012 (Wedeman, 2005; Jun, 2018). Part of this campaign is to increase centralisation of local governments as part of the corruption problem that is faced comes from power abuse of local officials, incentivised by the decentralization of local governments. Although decentralisation has been promoted by the Chinese state over the past few decades and has had its benefits, China is now moving away from this idea, as downsides are increasingly faced. One of the major benefits is that incentivised decentralisation has been that it fuelled competition among local authorities, which has helped China to reach growth targets. Nevertheless, this competition has also stirred up perverse incentive for local officials to keep surreptitious ties with companies and support unproductive 'image-building projects' that facilitated the Evergrande insolvency crisis (Jun, 2018; Browne, 2021). With the downsides of this decentralisation having increased negative effects on China and its economy, the aim to decentralise local governments is one of the things Xi Jinping's administrations is known for (Jun, 2018; Kozima, 2020).

As the SCS is often seen as a response to perceived weak leadership of Xi Jinping's predecessors caused by decentralization of power and local corruption, it should be one of the means to achieve this objective (Chow, 2015; Creemers, 2018). As Creemers (2018) claims the function of the SCS can be seen as a 'battering ram' "*to knock down the protective walls subordinate government departments have erected to protect them from the scrutiny of their administrative superiors*". This increased ability to check performance of local administrations, their officials and other governmental actors should not only advance Xi Jinping's anticorruption campaign but also display the government as a respected role model of sincere conduct, urging other subjects of the SCS to behave in the desired manner as well.

Besides the battle against corruption, the SCS should also provide in technology that enables easier and better information sharing between governmental actors. By ensuring these governmental actors have access to full information of subjects in execution of their tasks, the systems should fill institutional and regulatory gaps from which improvement of efficiency in governmental procedures and increased centralisation should follow (Shipan & Volden, 2008).

In order to bring the Party to develop an efficient, powerful and prosperous state the CCP is aiming to centralize power and better discipline governmental actors (Creemers, 2018). The SCS, therefore, can be seen as one of many instruments that should advance reaching the goals from "Made in China 2025" (Wübbeke et al, 2016).

Although the objectives that have to do with government affairs are politically related, they are not, or at least do not seem purely political. Nevertheless, there are some political incentives that underly instrumentation of the SCS predominantly arising from an increasingly digitized society. Of growing concern to the Chinese government has been Information and Communication Technologies (ICTs), which despite "The Great Firewall" have given more capabilities to express opinions, offer alternative information and mobilize activism enabling Chinese citizens to challenge the power of the Party (Liang et al., 2018). Through the medium of social credit, the aim is to grasp better control over online activities and restrain undesired (online) behaviour (Diab, 2017).

Another experienced threat to authority arising from digitization, and one that has come up more strongly in the past few months, is the increased power of big-tech in the country. The CCP fears, that in a world were information and data play an increasingly important role, the Chinese big-tech companies will become more and more powerful making use of the data they have gathered (Kharpal, 2020; Vlaskamp, 2021). The most well-known example of such a company that is feared by the State to weaken its authority most likely is Jack Ma's Alibaba. As a response to this threat, the SCS should provide the government with an information/data infrastructure powerful enough to control big-tech companies and retain power and authority.

2.3 Development of the SCS

Despite the SCS being announced in 2014 and official development of the system started from that moment onwards, the idea of a social credit system has been present in Chinese politics for a longer time (Creemers, 2018; Hoffman, 2017; Wong & Dobson, 2019). Development of the SCS therefore is not only influenced by trials from the moment of announcement, but has also known projects that have underpinned development of the SCS. This section, in consequence, will first go into what can be seen as the foundation of the SCS. Second, the development directly related to the SCS is reviewed and conclusively it is tried to sketch what the eventual SCS will potentially be like.

2.3.1 Foundation of the SCS: The Golden Projects

The Chinese government has run several projects in developing information infrastructures that preceded the SCS. Projects that are referred to most often are the "Golden Projects", informatisation projects focusing on different policy area's that were initiated in 1993 (Hoffman, 2017). All these projects had their main focus on developing a national information system and building an e-government.

Among these Golden Projects the "Golden Shield" project and the "Golden Card" come closest to the goals the SCS aims to achieve (Hoffman, 2017). In terms of the objective to increase access to financial credit the Golden Card project is most related to the SCS whereas, the Golden Shield project, with its 'self-healing' objective comes closest to the SCS in terms of social management and surveillance (Creemers, 2018; Hoffman, 2017; Wong & Dobson, 2019). Nevertheless, as appears from a statement of Jiang Zemin, president of China from 1993-2003, not only the Golden Shield project was designed to improve social management functions and governance capacity, but all Golden Projects were contemplated to contribute to the automation of social management[28]. Hoffman (2017) even argues the Golden Shield project has contributed to enabling the SCS by providence of the pre-requisite and infrastructures and resource capabilities. Thence, it seems the Golden Projects and especially the Golden Shield project have built the foundation for the SCS to function and should at least accelerate the process due to presence of the infrastructure and already acquired knowledge.

2.3.2 SCS Development: Trials and Pilot Versions

From announcement of the SCS onward, a major task had to be fulfilled. Mainly in the field of information gathering that is needed for the SCS large steps had to be made. In order to be able to realise the SCS help from third (non-governmental) parties was needed. The Central Leading Small Group for Comprehensively Deepening Reforms, headed by Xi Jinping himself, is

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[28] 泽术讲话 (Comrade Jiang Zemin's Speech at the National Science and Technology Conference (26 May 1995))

responsible for the successful development and mainly cooperates with the People's Bank of China (PBoC) and the National Reform and Development Commission (NDRC) (Meissner, 2017). In this process the PBoC seems to be in charge of the creation of formal financial credit system and the NDRC seems to be in charge of the 'social management' part.

Financial Credit

To develop the 'financial credit' part of the SCS the main target was to overcome the problem of informational opacity. Hence, to gather more data, in 2015 the PBoC selected eight Chinese firms to develop their own credit system (State Council of the People's Republic of China, 2015). Among the eight companies that were selected by the PBoC most well-known are probably Alibaba's Sesame Credit and Tencent, the owner of WeChat. (*No more loan rangers? Beijing's waning support for private credit scores*, 2017).

Task of the selected companies was to do proprietary work and develop their own formal financial credit system, which could eventually lead, if successful, to granting of a financial credit license. Remarkably during these trials, a major conflict of interest occurred. It appeared the companies had mainly developed their financial services to enrich their own, either commercial, insurance or financial businesses (*No more loan rangers? Beijing's waning support for private credit scores*, 2017). Trust issues, thus, even presented itself in the development-process of the system which should overcome the same issues. Additionally, to this conflict of interest, concerns were present relating to the usefulness of the data. Mostly since information came only from firms their own customer base and business activities. In consequence, the PBoC did not grant a formal credit license to any of those eight firms (Creemers, 2018; Xie, 2018).

To increase usefulness of the data provided by each company and eliminate the conflict of interest, the PBoC found a solution. It 'merged' all eight companies and the National Internet Finance Association (NIFA), which falls under the leadership of the PBoC, into the only party which eventually received a 'credit granting license', Baihang Credit (CBNeditor, 2018). The idea is that all eight microlenders contribute their data to Baihang, by which the data of each firm used together would compile more accurate credit ratings (Horsley, 2018). To ensure control over the initiative remained with the PBoC, the NIFA was ensured 36% of the shares of Baihang Credit, where the eight companies were just given 8% each (PBoC, 2018; Creemers, 2018).

Social Credit

In development of the 'social credit' part of the SCS, the NDRC is mainly responsible for the part of 'social' credit. To actualize such a system, the NDRC is cooperating with state as well as parties from industry. State parties that are involved range from local governments to government institutions responsible for regulation in certain areas. From the start of development, local governments have been encouraged to build their own credit systems and in 2017 they were able to propagate successful credit systems in a bid (Creemers, 2018). From this bid 12 'model' cities were selected by the NDRC and elements from their credit systems are used to further improve the SCS (Kostka, 2019; NDRC, 2018).

Features of credit systems that cities were selected for were: credit structure in the import and export of goods (Xiamen), quality of technical structure and security arrangements (Suqian), integrating trade with finance, foreign trade and market supervision (Yiwu), clear list of punishments and easy access to individuals (Weihai) (Xinhua, 2016a; Xinhua, 2016b; Xinhua, 2016c; Xinhua, 2016d). Ranking systems that were selected are: AAA to D ranking to individuals used in Rongcheng and a four-tier regulation compliance system for businesses from Weihai (Credit China, 2018; Xinhua, 2018c). Initiatives that were rewarded are the attempt to use social credit for improvement of legal services, healthcare, and education

(Xiamen) and the actively stimulating of organizations and local businesses to make credit commitments (Suqian) (Xinhua, 2018a; Xinhua, 2018b).

On an industry level, mostly the NDRC has cooperated with big-tech firms. For instance, Alibaba has been cooperating by sharing businesses with bad credit scores on a self-build commercial credit system (CCTV, 2016). On the technical aspect, however, the most important party that is involved is Baidu, who is providing technical knowledge on building the system (Xinhua , 2016). From this cooperation, together with the State Information Centre, "Credit China" was launched in 2015. Which is a platform that was built to integrate all credit related information about individuals and corporate actors held by local governments and the Interministerial Joint Conference.

The Joint Punishment System (JPS)

A trial that seems to come closest to what the 'Social Credit' part eventually might look like is the Joint Punishment System (JPS). Initiated in 2014, this system focused on punishment and reward by 'disproportional sanction', where "if trust is broken restrictions are imposed everywhere" (*Opinions concerning Accelerating the Construction of Credit Supervision, Warning and Punishment Mechanisms for Persons Subject to Enforcement for Trust-Breaking*, 2016). This system was run with 'blacklists' that are made public. Being placed on a blacklist in this case means that you have 'misbehaved' and will face restrictions. Restrictions that can be faced can entail different area's such as economic/business opportunities, personal career, travelling and other conspicuous consumption and might apply to business and/or individuals (Creemers, 2018). Concerning the limitations in economic/business opportunities one could think of limitations in access to participate in state procurement programmes or the denial of subsidies or other forms of support by the government. Limitations one might face in the area of personal career are denial to carry out functions in financial sector companies, social organizations or refusal to enter the military or the CCP. Additionally, one can also face limitations in travelling and other conspicuous consumption such as a ban to travel with high-speed trains, to eat in luxury restaurants or to send your kids to private school.

The JPS has been presented as a common set of measures and procedures on how the blacklist system should be used. Nevertheless, local governments, organizations and business were encouraged to come up with restrictions and punishments of their own. In order to ensure uniformity of all systems that were to be developed, the NDRC and PBoC published regulations on what information could be used and which departments were allowed to run blacklist/redlist systems (Creemers, 2018). Important, however, would be to create 'green channels' (rewards) for redlisted individuals and to constrain blacklisted individuals. Next to departments inside the government, chambers of commerce and industry associations could also be authorized to run blacklist/redlist systems. Eventually this has led to multiple different regulations being applied in different regions, businesses or ministries. Among the industries where additional and more specific regulations were implemented were in food security, the insurance sector, housing, transportation, and environmental protection.

2.3.3 What SCS Will Look Like

Although the JPS most likely just gives us a grasp of what an eventual SCS might look like, at least it gives us good insight in what form it might adopt. Therefore, the SCS will most likely not consist of one system that encompasses all departments, industries and individuals but it seems more likely every local government will have its own set of rules and accompanying set of punishments and rewards. If one behaves accordingly to those rules, one will be placed on a redlist whereas, if one does not behave accordingly, the subject will be place on a blacklist. Consequently, redlisted individuals will be rewarded and will be able to take advantage out of created 'green channels' and blacklisted individuals will face punishments and constraints.

In regard to the scoring mechanism that will be used, much remains unclear. For instance, it is not clear yet whether different ratings varying per industry, department or area will be used separately or if these will all integrated into one nation-wide rating. Meissner (2017) and Creemers (2018) both argue most likely different social credit scores will be generated, each based on their own assessment criteria and used for different purposes. Additionally, the type of scoring remains unclear either. It is mostly argued that a binary system (on/off blacklist) will likely be used instead of quantitative scoring methods, but since Rongcheng has been awarded 'model city' for its AAA-D scale rating of individuals, it seems likely such a scoring mechanism could be preferred by the Chinese state. The reason why this scoring method could be preferred is perhaps because it would make comparing ratings of subjects much easier. Another reason might be that if ratings of (certain) departments need to be integrated into, for example, a nationwide score, this would be much as easier as well. It might thus be that local governments and other institutions will be forced to use the more quantitative way of scoring used in Rongcheng.

2.3.4   Technological Perspective

From a technological perspective the collecting, processing and analysing of data poses a great challenge. Nevertheless, these aspects are fundamental for the SCS to work properly. Creemers (2018) has identified three essential steps the SCS should be ensured of. First, all subjects must be identifiable. Second, information of all subjects needs to be collected, stored, and shared and third, the data needs to be processed and used in furtherance of the objectives of the SCS.

To ensure that all subjects can be identified, it is crucial all identified subjects are allocated with a unique identifier and that acting anonymously is made impossible. The unique identifiers needed, are provided by the so called 'social credit codes', which are 18-digit codes unique to every individual, business or organization (General Administration of Quality Supervision, Inspection and Quarantine, and National Standardization Management Committee, 2015). So as to prevent any subject from acting anonymously, the state can build on two mass-surveillance projects Skynet and Xue Liang (Devereaux & Peng, 2020). Together both these projects offer coverage of nearly all public places in China with CCTV surveillance cameras that are equipped with facial recognition, so that subjects can be identified and behaviour can be tracked (Liang et al, 2018). Consequently, observed behaviour will be added to a subjects file. Also, in the online environment, which most likely is much easier, subjects are surveyed and interesting online behaviour, for example, posts on social media, are added to a subjects file (Diab, 2017).

Other behaviour or information of subjects that needs to be collected, such as legal procedures, law violations, mortgage loans or credit history are the responsibility of the related departments or institutions. A task they also had to fulfil before implementation of the SCS. A much bigger challenge nonetheless lies in the sharing of all this data between different data collectors. Regarding the Skynet and Xue Liang projects a centralized database to store, analyse and share surveyed behaviour on the local and national level was part of the project (Devereaux & Peng, 2020). Nevertheless, the data provided by these two projects do not encompass all behaviour that is surveyed and that needs to be shared. Although, since no signals are present one 'overall score' will be used, full integration of information between all collectors is likely not necessary, sharing of information between certain collectors will surely be needed. Financial information and information that could be of concern to the lending of credit needs to be shared between collectors, posing the challenge of sharing and distributing information properly. To enable this information sharing of collected, stored and analysed data, the national data platform "Credit China" was created (Meissner, 2017; Xinhua, 2016). Most of the information available on this platform is made public and only 25% of the data cannot

be accessed. This non-accessible data has been qualified as 'intergovernmental sharing' or 'limited sharing' (Meissner, 2017).

Consequently, when the information has been collected, stored and shared, the data should be processed. From the shared information relevant information should be filtered and should ultimately result into a credit score determined by the assessment criteria. Until the moment of writing, most data analysis seems to be done in a rather simple manner and algorithms are not used yet (Creemers, 2018; Meissner, 2017). An exception is made for the financial credit scores that are determined, here algorithms already seem to be in play (Creemers, 2018). Another example of a more technological function in use, is the 'Big Data Key Scrutiny function'. Goal of this function is to automatically put subjects that have appeared on multiple blacklists on a 'Big Data Warning List' that can publicly be accessed (NDRC, 2018). Yet, if the objective of the SCS truly is to develop a system that is capable of real-life monitoring and automated data collection, eventually more algorithms or other technological ways of data processing need to be applied.

Concerning the use and processing of the data, it is fundamental that the data is processed in a manner that furthers the (social) objectives, in order to meet the systems intentions. So as to, performed non-desired behaviour should truly be punished and desired behaviour should indeed be rewarded. Therefore, the processing of information should be in line with assessment criteria and information of different subjects should be treated in an equal way. In order for the system to work, and to facilitate equal and fair treatment the NDRC recognized that subjects should be notified when being blacklisted, subjects should have the right to appeal, and they should be taken off the blacklist within the legal term (3 days) when they have met conditions to be retired (Creemers, 2018). Something else that could be rather important, is that 'gamification' of the system should not be possible. Which indirectly means it should not be the case that subjects know exactly how and, more importantly, when to behave to get a better score and there 'play a game' against the system. In preventing this gamification from happening and/or being possible, the system being enigmatic in itself could have a function. As the system and thereby rules and scoring are hard to unfold to a full extent, its enigmatic nature most likely contributes to prevention of the ability to 'play the system'.

2.4 Criticism & Concerns

When the CCP announced the Chinese government was to develop a mass-surveillance system that would track all behaviour of its citizens, much criticism, mainly from Western sources, followed. The SCS was many times portrayed as 'Orwellian' nightmare such as a peer-review credit system depicted in an episode of Black Mirror (Kobie, 2019; Creemers, 2018). A mistake, however, that is most often made is that the system is imaged as an overall encompassing system that is merely designed with the objective of suppressing its citizens. Although this mistake is often made, concerns often named, such as privacy, freedom, the suppressing of certain minorities, and the CCP imposing their ideals by means of this system, are surely worth to be explored (Devereaux & Peng, 2020; Wong & Dobson, 2019).

Regarding, the privacy concern, often this concern is written off with the argument that Chinese people value what is best for the group more, there what is best for the individual due to which privacy is of less importance (Minter, 2016). This, however, seems like a rather easy simplification and can surely be examined in more depth. Yet, this is far beyond the scope of this research but surely would be a good topic for future research. Nevertheless, a question that needs to be asked is how much privacy one is ought to give up in exchange for the benefits the SCS should provide. Although it remains opaque what data is gathered and what is done with this data exactly, doing research on approval of the SCS and what benefits are experienced

might provide insight in the willingness of Chinese citizens to give up privacy in exchange for benefits the SCS might yield.

The other criticisms that are mostly heard, are linked to each other. As the SCS is paternalistic, since an individual is ought to behave in the way envisioned by the developers of the system (CCP), it comprises liberty of subjects. In such a case, the individual can be seen as being 'suppressed' by the developer, in this case by the CCP. In addition, as individuals are steered into the ideals of the Communist Party fear arises autonomy of subjects will be restricted in order to "align all citizens with the CCP's ideals and punish ones dissenting those ideas" (Devereaux & Peng, 2020).

Along with concerns from Western media, more well-grounded concerns about the system are present as well. A concern that is frequently mentioned has to do with transparency. Here it is mostly important that it is transparent not only what behaviour is monitored, but also when and where (Kostka, 2019). Furthermore, concerns are also present that the scoring mechanism would be corrupt or would contain a bias towards or against certain groups. To ensure certain bias is (accidentally) built into the system, transparency of the scoring mechanism is important. This creates the possibility for subjects to appeal if a bias or error is detected or experienced and to uncover possible flaws in the system (Kostka, 2019).

A concern tapping into another field, has to do with 'disproportional punishment'. Hoffman (2017) shares his worry about the creation of self-reinforcing loops leading to inequality. He notes that subjects that get blacklisted should be able to get off the blacklist and do not end up in a situation where no escape is possible. It is therefore feared that the SCS shares the principle of disproportional sanction with the JPS and the goal is to create a system that ensures "if trust is broken in one place, restrictions are imposed everywhere" (Central Committee and State Council, 2016). As it appears this fear is not unground, with a formerly Party member stating the SCS is designed as such that 'discredited people become bankrup*t'* (Liu, 2018)

Furthermore, concern exists the SCS will be used as a predictive tool in the future. Where the SCS is 'past-oriented' at the moment of writing, it is mentioned the ultimate goal might be to develop it into a system that is able to anticipate on future events (Liang et al., 2018). Such a system would thus ought to have 'predictive power' in order "to foresee the future in order to control the present" (Lyon, 2016). Consequently, concern is present that innocent subjects that are predicted to become 'criminals' will be arrested before even committing a crime.

A critique which stems from the criticism and concerns mentioned, is that even though the SCS might provide a solution to those problems, it most certainly is not the only solution. Therefore, as the SCS most likely is not the only way to go and gives rise to concerns regarding privacy, autonomy, liberty, disproportional sanction and use for predictive policing, alternative solutions should be considered as well. Whereas banks could use credit scores specifically developed and only used by banks inducing no social control, but only 'financial control', unlawful behaviour by firms could be counteracted by better/stronger regulation. Thereby, if it would be the case these alternative solutions would not exist or are not desired as such, a follow-up question one should ask is to what extent use of a 'paternalistic' system, like the SCS, is justified. Even though it might improve Chinese society, as it might limit the liberty and autonomy of individuals subject to the system, questioning whether it would be desired to have such a paternalistic, limiting system in place would be in place.

Finally, a concern that got increasing attention over the past few months is the position of big-tech companies and their executives. With growing sentiment in the Chinese government that

these companies are becoming too powerful and new regulations being imposed it is argued the big-tech companies (e.g. Alibaba, Tencent etc.) that are needed to provide and help build the SCS, are not willing to cooperate (CBIRC, 2020; Huang & Liu, 2020; Lockett, 2020; Vlaskamp, 2021). Example of new regulations that are imposed that are rumoured to force cooperation and provide the Chinese government with the data needed for the SCS are the IPO of Alibaba's subsidiary ANT being cancelled and new data regulations such as the Data Security Law (DSL) and the Personal Information Protection Law (PIPL) that are being imposed (Ruiyang et al, 2021; Vlaskamp, 2021). What measures the Chinese government is willing to take, to force cooperation of (Big-Tech) companies to be able realise the SCS, therefore seems worrying.

2.5 Conclusion

China has seen several problems emerge from their transition from a fully controlled to a more market-led economy. The financial sector has proven not to be able to grant access to credit for enough individuals, regulatory capacity in the industry has become insufficient and trust issues are deeply rooted into Chinese daily life.

Despite certain efforts that already have been undertaken by the Chinese government to overcome these issues, the problems have not been solved yet. Projects to increase access to financial services, such as "Golden Card", banks have remained unable to increase the penetration to satisfactory levels. Neither did another project, known as "Golden Shield" solve the trust issues present in Chinese daily life. In a new attempt to overcome these issues, the Chinese government has announced implementation of the so-called "Social Credit System".

By means of this mass-surveillance tool, the CCP is willing to increase the collected information about citizens and businesses, including most of their behaviour in the off- and online environments. Accordingly, a Personal Credit Score (PCS) will be attributed on basis of the collected information of a subject, from which he/she will be punished or rewarded.

With respect to the problems faced in the financial sector, by increased governance this system should overcome the problem of disproportionate lending oriented towards political and powerful interests. As a result, crises stemming from exorbitant debts, like the one taking hold of the Chinese real estate sector at the time of writing, should be averted. In addition, the increased collection of (alternative) data, should overcome the issue of information opacity, which has appeared to be a key obstacle in the penetration of financial services. Mainly for Chinese living in rural areas, low-income families and Small- and Medium-sized Enterprises (SMEs) not enough information has been available to assess creditworthiness in a reliable fashion. Nevertheless, in the past few years several big-data firms, such as Alibaba and Tencent, have proven able to solve this issue. With the data these parties collect, from their e-retail activities or other sources, they have been able to assess creditworthiness of those individuals and have started granting (micro) credit loans. In order to build a system to provide the financial sector with enough information and data to assess creditworthiness, the SCS is developed in which multiple of those big-data firms contribute to the development process. Consequently, it is aimed the system should provide banks the ability to assess creditworthiness of every citizen and business and give them access to credit. Not only should this build a more credit-intensive economy, it should also stimulate the development and emergence of new businesses, foster innovation and so contribute to economic growth.

Additionally, the SCS should overcome the lack of trustworthiness and absence of regulatory mechanisms, mainly noticeable in the industry and government affairs. Plenty of examples can be given that are illustrative to the issues faced in the industry, but most likely

the most notable to many are the large amount of counterfeit and low-quality products China is known for. In respect of government affairs, the far-reaching anti-corruption campaign of Xi Jinping, most likely says enough. As a part of this anti-corruption campaign and in chase after the goals of "Made in China 2025", the SCS should fill the regulatory gaps that have emerged. By designating consequences to companies, their executives, government officials and other actors that perform undesired behaviour, the SCS should serve as an instrument to impose desired behaviour. As the very essence of the word "social" implies, the SCS should not only do so by law, but the system should also trigger a self-regulatory mechanism between subjects themselves.

About the exact details of the system, not much is open in the public and full details of the envisioned system are not available. Nevertheless, from trials and pilot versions some knowledge has been gathered. Trials that were hosted by the PBoC to develop the 'financial credit' part led to a major conflict in interests between the PBoC and eight cooperating private companies (among which Alibaba). According to the PBoC the companies used the arm of their developed financial services to their own benefits. For that reason, to none of the participating companies a credit granting license was given. Because the data these parties could provide, was crucial, ensuring cooperation of the companies was needed. As a solution, the PBoC decided to merge all eight companies under its own authority. The result was establishment of Baihang Credit, the only party that had received a 'credit granting license'.

With respect to the 'social credit' part of the system, the development process mainly consists of local governments who were encouraged to develop their own credit system which would function as trial versions. From these trials several 'model cities' were appointed for certain features they had included in the credit system and that will most likely be included in the SCS. However, a pilot version that probably comes closest to what SCS might look like is the Joint Punishment System. From the JPS certain regulations and procedures were published by the government, including what information could be used and who were allowed to run redlists/blacklists credit systems. Additionally, government departments, industries and organizations that were allowed to run credit systems were encouraged to compose their own assessment criteria and possible punishments and rewards.

At length, many different trial versions have been implemented, all with different assessment criteria accompanied with different punishment and rewards. Since differences per industry, department and organizations are stimulated and most likely result in better 'social management', it is expected the SCS will consist of multiple coexisting crediting systems that will complement each other. Nevertheless, the idea of blacklists and other drawbacks for subjects performing undesired behaviour and the opposite for redlisted seems omnipresent in the trials. Despite most of the existing trials merely using a binary black/redlist system as a scale of rating, a more quantitative system such as used in Rongcheng seems to be preferred.

Regarding the technology that is needed for the SCS, three crucial aspects can be identified. First it must be ensured that no subject can act anonymously. All subjects therefore must be identifiable and have their own unique identifier. For the SCS this unique identifier comes in the form of an 18-digit 'Social Credit Code'. Secondly, all information about subjects must be collected, stored and shared. This collection, sharing and storing of data has mostly been taken care of with the development of the "Credit China" platform. Conclusively, the data should be processed and used in furtherance of the determined objectives. In order to reach these objectives, as stated by the NDRC, subjects should be treated fairly and should have the right to appeal, when injustice is experienced.

Although the SCS should offer a solution to fundamental problems, plans to implement the system has gotten quite some criticism. Most of the critiques are coming from Western sources and play into the privacy, transparency and suppression of subjects. Most often these concerns doubt the actual incentive to implement the system and argue the actual reason would be to "*align all citizens with the CCP's ideals and punish ones dissenting those ideas*" (Devereaux & Peng, 2020). More worrying, are well-grounded critiques arguing the system is designed with a self-reinforcing loop causing blacklisted subjects to remain on the blacklist forever causing 'disproportional sanction'. Likewise, concerns are present the system will be developed into a 'future-oriented' system, that allows for arresting subjects that have not committed a crime yet, but according to the system, would commit one in the future. Furthermore, as a lot has happened concerning Chinese Tech giants new Data regulation that are being imposed rumours go Chinese Tech giants are being forced to cooperate and provide the Chinese government with the data needed to realise the SCS. Consequently, this has raised questions how far the Chinese government is willing to go in order to realise the SCS.

To conclude, since development of the SCS has not been finished yet, and new knowledge about the system is acquired continuously, regular future research on the system itself will likely be needed in order to advance comprehension of the system

CHAPTER 3:   Prior Research on Approval of China's Social Credit System

As existing literature on approval and opinions on SCSs was very limited, just one single study (*China's Credit System: Explaining High Levels of Approval"*; Kostka, 2019) on this topic was found at the time the research of this thesis was started with. As this article was the starting point of this thesis, the results and discussion presented in this article will be discussed, after which criticism and topics open for future research will be gone into. The prior research and methodology that was used for this study, can be found in *Appendix I*.

Kostka (2019): '*China's Credit System: Explaining High Levels of Approval'*

3.1 Results
As a means of data collection Kostka made use of an online survey which was conducted among Chinese citizens. The survey that was conducted covered topics that went into demographics, personal relations, online privacy, political attitudes, and topics with regard to SCSs (approval, perceived functioning, participation, received scores, received benefits and sanctions). Main result of the article was that Chinese citizens show strong approval with regard to SCSs and disapproval is almost non-existent. Among the respondent population the study found participants of local governments were more highly approving of SCSs, which confirmed the expectation individuals deem the government to be a more trustworthy handler of personal data (Ohlberg et al., 2017; Wang and Yu, 2015). Looking at the socio-demographical factors Kostka found that the respondent group of older, urban and more advantaged (wealthier, better educated) respondents showed strongest approval rates for the SCS. This finding confirmed the expectation that younger individuals would be more disapproving of SCSs. However, as it was expected more advantaged individuals would be more concerned about privacy implications and to have stronger democratic preferences and liberal views, stronger approval of urban and more advantaged individuals was found remarkable (Pan and Xu, 2018; Wang and Yu, 2015).

With respect to formulated expectations of the variable 'who should run a SCS', the expectations were confirmed. With 77% indicating the central government should run a SCS, over 48% and 42% for provincial and municipal governments respectively, answers indeed reflected the expectation of hierarchical trust. When governmental and private institutions would be compared, a higher trust in government was expected and with just 8% having chosen private companies, governmental trust transcended trust in private enterprises.

Furthermore, to test whether predicting variables were present, the study made use of an ordered logit regression. Among socio-demographical variables, gender, income, education, rural/urban location were found to have a significant and positive effect. Out of those explanatory variables the effect of education was strongest, followed by income and location. In addition, several other strong predictor variables of approval were identified, these were: 'perceived fairness of scoring', 'SCSs improves the quality-of-life', 'SCSs increase the accountability for one's actions'. Other significant, but less strong predictive factor that are reported to positively affect approval rate are: 'knowledge on how scores are calculated', 'trust in the government', 'perceived scoring compared to friends and family' and 'received advantage'.

3.2 Discussion

From Kostka's findings, most likely the almost non-existence of disapproval was found most remarkable. An easy explanation to the just 1.4% that reported disapproval could be the authoritarian setting in which it was held. Although it might have some effect, as responses were anonymized and with 48.9% showing strong approval, this explanation is most likely too short-sighted. Nevertheless, as disapproval might come from suppression of minorities or minorities that face disproportional sanction, concerns with regard to these aspects are not taken away. Thence, although rates of disapproval are low, they should certainly not be ignored. However, as the article mentions, a better explanation to the strong approval that is observed, can be drawn from the fact that respondents who see SCS as a tool to improve quality-of-life, to increase accountability taken for actions and to fill institutional and regulatory gaps, indicating respondents interpret the SCS *"through frames of benefit-generation and promoting honest dealings in society and the economy instead of privacy-violation"* (Kostka, 2019). Interviews that are reported, substantiate the findings the SCS is interpreted as a tool of benefit-generation, as interviewees indicate they see SCSs as convenient and attractive, as a way to "generate a guide and norm for personal social behaviour with the Chinese society" and as a tool that makes credit more accessible.

Likewise, this interpretation of benefit-generation might provide an explanation to the strong approval of more advantaged respondents as well. As this group was ought to have more concern with regard to privacy, the interpretation through the frame of benefits might cancel out the privacy implications they are concerned with. Another, possibly additional, explanation that is suggested, could be that respondents feel no control over these possible privacy implications, whether the SCS is implemented or not. For example, the article mentions multiple interviewees assumed all such information was available to the CCP or other governmental instances already. One interviewee even stated "I do not think that there is any point in worrying about the Party having access to data through the SCS, because it is inevitable that all data is accessible to the CCP." (Kostka, 2019). Thence, a decreased or very limited (perception of) control over one's data or privacy might cause privacy concern to have little effect as well.

Furthermore, to explain the stronger approval of urban respondents, two explanations are provided. First of all, there is the possibility rural individuals are simply less familiar with SCSs and second, urban individuals might have increased access to experienced benefits. As the benefits scheme of SCSs in terms of travel related incentives (fast-track visa, sharing economies etc.) appear to have a strong urban bias, the second explanation seems well-grounded. On the other hand, the opposite might provide an explanation as well. As rural citizens "do not have as good use for benefits (as compared to city residents) and most importantly, because they are limited by income and other factors to increase their score" (Kostka, 2019), a bias against rural citizens might also be perceived. However, something which is not accounted for by the article, is the fact one of the reasons SCSs are implemented is to provide rural citizens with access to financial credit. The explanation rural citizens 'do not have as good use for benefits' and/or the benefits scheme being 'urban-biased', therefore, seem not to be fully explanatory to the lower approval observed among rural citizens. Potentially it even indicates SCSs are not able to provide (enough) rural citizens in those credits (yet), due to which the envisioned benefits are not reaped by rural individuals yet.

Moreover, if the influence of scoring is looked at, fairness of scoring and perceived scoring compared to friend and family were observed to be strong positively correlated predictors. Remarkably enough, the absolute magnitude of the score itself was found not be a significant predictor. From interviews with respondents the article reported, especially fairness of scoring appeared to be in the minds of respondents as several of them indicated they were concerned about whether same rules and standards would apply to people in powerful

positions. Similarly, reported interviews showed concern that scores would be too homogenized and credit repair would be impossible or too difficult (leading to disproportional sanction). Thence, as it appears a certain experienced control over one's score seems of importance as well.

3.3 Criticism & Future Research

Resulting from Kostka's study, it is claimed approval rates of the Social Credit System (SCS) are 'high' among Chinese citizens. However, as no comparison was made with another (different/independent) group, whether approval is 'high' can only be concluded in terms of the scale of answer possibilities used. Consequently, whether approval rates among Chinese citizens are also 'high' compared to citizens from different countries is still open for further research.

As the article *China's Social Credit System: Explaining High-Levels of Approval* (Kostka, 2019) forms the starting point of this thesis, this thesis will try to examine whether approval rates are indeed 'high(er)' among Chinese citizens. By making use of a control group (Dutch citizens in this case) among which a similar survey will be held, an answer to the above-named question should be given.

Furthermore, Kostka's findings are interesting. Some of the hypotheses are confirmed, but some are also, quite unexpectedly, contradicted. Therefore, it would be interesting to see whether Kostka's results can be replicated. Additionally, as Kostka has tried to come up with certain explanations that substantiate the findings, testing these suggestions would be of interest as well. Although several of the explanations are well-grounded since they are backed by interviews, due to the limited 'sample size' they can still not be generalized and testing them among a larger sample would be of added value.

Therefore, this thesis will conduct a survey as similar to Kostka's to test whether results can be replicated and explanations given can be substantiated to. As explanations given will be tested as well, the survey will only be similar up to a certain extent since new questions going into the fields of these explanations need to be included. Additionally, due to the fact shorter surveys are more attractive to respondents and because time available for this project is limited, a shorter survey was conducted. Consequently, as this does not leave room to go into all of the results presented by Kostka, just the most interesting findings and explanations will be tested for. Findings that were highlighted as most interesting are the 'high' approval rate of Chinese citizens, trust in individuals, the government and other institutions, variables that were found to be predictors, and suggested explanations. As these highlighted topics formed the basis of this research the hypotheses to be tested were formulated accordingly. Logically, from the hypotheses the survey was designed. More detail on those processes is reported in the methodology section.

CHAPTER 4: Methodology

This methodology section will go into topics related to data collection and analysis related to this research. As the paper of Kostka is used as a starting point and results of this study will be tested, a similar manner of collecting and analysing data was used. This meant hypotheses were formulated on basis of the finding of Kostka and a similar empirical study was conducted to test these hypotheses. As the main RQ contained a comparative aspect, namely whether approval rates are high(er) ('high' in relative sense) for Chinese citizens, a control group of Dutch citizens was added.

Considering the hypotheses that were formulated shape the process of survey design, first the hypotheses will be talked over in this section. Next, the survey design will be discussed. After which the participants (collected sample), will be looked at and last representativeness of the sample will be examined.

4.1 Hypotheses

Formulation of the hypotheses that were to be tested for this study was done by combining the RQs of this study with the findings of Kostka. In *section 3.1* the most important findings of Kostka were already highlighted. The most relevant of those findings will return in this section as (a part of) formulated hypotheses. As was discussed in this section, most interesting findings related to the claim of 'high' approval rates, predictor variables that were found, and explanations of the results that were suggested. Accordingly, in this section these finding were linked to the RQs of this study from which hypotheses to be tested were formulated. How RQs are related and which hypotheses accompany each RQ is discussed in more detail below.

Hypotheses of the Main RQ: *"What are approval rates of the Social Credit System (SCS) among Chinese citizens?"*)

Resulting from Kostka's study high approval of SCSs among Chinese respondents was found. As this study will test whether findings of Kostka can be retained, the hypothesis accompanying our main RQ is as follows:

- **H1**: Chinese respondents will show high approval of SCSs

Hypotheses of Sub RQ1: *"Are there differences in approval between Dutch and Chinese citizens?"*

As Kostka's claim of 'high' approval rates among Chinese respondents is limited in the sense it only applies to the scale of answer possibilities used, whether approval rates are high compared to respondent groups with different nationalities, could not be concluded from Kostka's study. In order to be able to legitimize the claim of high approval among Chinese respondents when compared to a group of respondents with a different nationality, a control group of Dutch respondents was added. As a result, the following hypothesis was formulated:

- **H2**: Chinese respondents show higher levels of approval when compared to Dutch respondents

Furthermore, Kostka found Chinese respondents experience trust between individuals in society to be a problem. As one of the problems the SCS should solve is the lack of mutual

trust in Chinese society, one expects lower levels of trust to be found among Chinese. Subsequently, as the issue might be recognized by individuals reporting lower trust, one might expect approval among those respondents to be higher. Therefore, lower trust in individuals is expected to be associated with higher levels of approval from which the following hypothesis follows:

- **H3**: Chinese respondents show lower levels of trust in individuals compared to Dutch respondents

Another factor that was found to influence approval of an SCS was who runs the SCS. As a large majority preferred a nationwide SCS to be run by the central government, one expects trust in the government to be related to approval. From there on, the following hypotheses were formulated:

- **H4**: Respondents prefer a nationwide credit system to be run by the government
- **H5**: Trust in the government is higher among Chinese respondents

Hypotheses of Sub-RQ2: *"If differences are present, can explanatory factors be identified?"*

In addition to the finding that Chinese approval rates are 'high' and dependent of trust-levels, Kostka has found several other variables that are associated with higher approval rates. Since this research will try to confirm these results, the predictors as found by Kostka will be sought for. This has led to the following hypotheses:

- **H6**: Approval rates are higher for male respondents
- **H7**: Approval rates are higher for older respondents
- **H8**: Approval rates are higher for more highly educated respondents
- **H9**: Approval rates are higher for wealthier respondents
- **H10**: Approval rates are higher for respondents showing lower trust in individuals
- **H11**: Approval rates are higher for respondents showing higher trust in the government
- **H12**: Approval rates are higher for respondents perceiving the SCS as tool that improves accountability taken for one's actions
- **H13**: Approval rates are higher for respondents perceiving the SCS as a tool that improves quality-of-life
- **H14**: Approval rates are higher for participants of any sort of SCS
- **H15**: Approval rates are higher for individuals experiencing their score as more fairly calculated
- **H16**: Approval rates are higher for individuals perceiving their score as relatively higher compared to friends/family
- **H17**: Approval rates are higher for individuals that perceive to be better informed about how their score is calculated
- **H18**: Approval rates are higher for individuals that experience more benefits

Furthermore, as Kostka has come up with explanations that need to be tested as they cannot be generalized, this study aims to test these explanations. From these explanations the following hypotheses were formulated:

- **H19**: Approval rates are higher for wealthier respondents due to being more technology savvy (/ having more trust in technology)
- **H20**: Approval rates are higher for individuals that perceive their data to be owned by government/Big-Tech already
- **H21**: Concern whether same rules/standards apply to people in powerful positions is associated with lower levels of approval
- **H22**: Approval rates are higher for individuals that report increased feeling of control over their score
- **H23**: Respondents that travel more show higher levels of approval
- **H24**: Respondents make more use of sharing economies show higher levels of approval

4.2 Survey Design

Since formulated hypotheses are partially based on a study performed by Kostka, it was hoped questions from the survey used by Kostka could be used. Unfortunately, however, due to ongoing research Prof. Kostka was found not able to share the survey used for her study, meaning only questions mentioned in paper that was published were readily available for use. Although this might limit reproduction capability of this study, by making use the questions readily available from the paper a similar survey could be designed. As questions copied from Kostka would only give the ability to test the hypotheses derived from her results, questions going into topics related to the suggested explanations were needed to be included as well. Preferably, questions going into these topics were retracted from the World Value Survey (WVS) as correct phrasing and interpretation would be ensured. Additionally, questions from the WVS could be used to test representativeness. Nevertheless, if questions going into a certain topic were not available, new questions were established.

For both target, Dutch and Chinese, groups the survey was conducted in their native languages, Chinese (Mandarin) and Dutch respectively. To make sure surveys would be read and interpreted in a similar way, an English version of the survey was designed, from which both surveys were translated into the native language of the according respondent group. Translation was done by native speakers of the language with a sufficient level in English language.

Furthermore, since the formulated hypotheses are partially related to experience with social credit systems, which is not relevant to Dutch respondents, a supplementary part of the was designed. This meant a main survey was designed for both respondent groups and an additional one, covering experience with SCSs, was designed for Chinese respondents only.

The Main Survey

In the main survey topics that were covered are '*trust in individuals*', '*trust in the government*', '*trust in government, Big-Tech & technology*', '*privacy concern related to data-sharing*', '*functioning of SCSs*', '*approval of SCSs*' and '*demographics*'. Which categories and hypotheses included variables are associated with are given in *Table 1*. A full and more extensive overview of included variables (incl. questions asked and answer possibilities) can be found in *Appendix II*. Additionally, the accompanying branching and randomization logic of the survey can be found in *Appendix III*.

During the survey, for the (independent) variable categories '*trust in individuals*', '*trust in the government*', '*trust in government, Big-Tech & technology*', '*privacy concern related to data-sharing*' questions were asked in a randomized fashion. Accordingly, before asking questions going into SCSs, a statement defining SCSs was shown, which they were asked to read thoroughly. The explanation statement that was shown, was as follows:

"This survey is about 'Social Credit Rating':

Social Credit Rating is the accrediting of a score to a person on basis of multiple types of behaviour that are or have been performed. The goal often ascribed to use of such a "social score" is to create a more "trustworthy", "integer" and "virtuous" society by rewarding more "integer", "trustworthy" and "virtuous" behaviour (ex. involvement in voluntary activities) and/or by penalising less "integer", "trustworthy" and "virtuous" behaviour (ex. not paying back loans/jaywalking)."

After having read this statement, first the questions covering '*functioning of SCSs'* were asked. Questions covering this independent variable category were asked in a randomized order and were asked before the depending variable ('*approval of SCSs'*) was gone into. This was done to force respondents think about functioning and possible effects of SCSs in order to ensure respondents answer the question of the depending variable ("*How much do you approve SCS?"*) with maximum understanding / attention. Finally, after all other topics of interest were dealt with, questions going into demographics variables were covered in a randomized order.

Table 1: Build-up of main survey in terms of variables, questions and answer possibilities. Variable names indicated with (K) are variables copied from Kostka's research, variables indicated with (WVS) are questions copied from the World Value Survey.

Variable Name	Associated Hypothesis
Trust in individuals	
Overall trust	H3: Chinese respondents show lower levels of trust in individuals compared to Dutch respondents
Trust in family	
Trust in acquaintances	&
Trust in individuals after meeting for the first time	H10: Approval rates are higher for respondents showing lower trust in individuals
Trust in the government, Big-Tech companies, technology	
Trust in the government	H11: Approval rates are higher for respondents showing higher trust in the government
Trust in technology	H19: Approval rates are higher for wealthier respondents due to being more technology savvy (/ having more trust in technology)
Privacy concern related to data-sharing	
Trust in government with data	
Trust in Big-Tech with data	
Concern data-sharing with government	H20: Approval rates are higher for individuals that perceive their data to be owned by government/Big-Tech already
Concern data-sharing with Big-Tech	H20: Approval rates are higher for individuals that perceive their data to be owned by government/Big-Tech already
Captcha question	
Captcha question	-
→ ***Explanation statement of SCS was shown and asked to read thoroughly***	
Functioning of SCSs	
Who should manage a SCS	H4: A nationwide credit system should be run by the central government

Concern if same rules/standards apply to people in powerful positions	H21: Concern whether same rules/standards apply to people in powerful positions is associated with lower levels of approval
Accountability for actions	H12: Approval rates are higher for respondents perceiving the SCS as tool that improves accountability taken for one's actions
SCS as QOL improving	H13: Approval rates are higher for respondents perceiving the SCS as a tool that improves quality-of-life
Approval of SCSs	
Approval of SCSs	H1: Chinese respondents will show high levels of approval & H2: Chinese respondents show higher levels of approval when compared to Dutch respondents (*)
Demographics	
Gender	H6: Approval rates are higher for male respondents
Age	
Education	H7: Approval rates are higher for better educated respondents
Income	H8: Approval rates are higher for wealthier respondents

For Chinese respondents, in addition to the main survey, a supplementary survey was designed. This survey went into experience with participation in SCSs and covered questions going into what SCSs respondents participated in, how they perceived scoring, what benefits/downsides they experienced and what kind of travel behaviour they perform. Variables and associated hypotheses of the supplementary survey can be found in *table 2*. A full and more extensive overview of included variables in the supplementary survey (incl. questions asked and answer possibilities) can be found in *Appendix II*. For a more extensive overview of exact questions, answer possibilities and branching logic *Appendix III* can be looked at.

Table 2: Build-up of main survey in terms of variables, questions and answer possibilities. Variable names indicated with (K) are variables copied from Kostka's research, variables indicated with (WVS) are questions copied from the World Value Survey.

Variable Name	Associated Hypothesis
Participation in SCSs	
SCS participation	H15: Approval rates are higher for participants of any sort of SCS
Scoring in SCSs	
Informedness about system	
Score perception compared to F&F	H16: Approval rates are higher for individuals perceiving their score as relatively higher compared to friends/family
Fairness of scoring	H15: Approval rates are higher for individuals experiencing their score as more fairly calculated
Control over score	H22: Approval rates are higher for individuals that report increased feeling of control over their score

Experience with SCSs	
Experienced benefits	H18: Approval rates are higher for individuals that experience more benefits
Travel behaviour	
Use of sharing economies	H23: Respondents that travel more show higher levels of approval & H24: Respondents make more use of sharing economies show higher levels of approval
Use of high-speed railway travel	H23: Respondents that travel more show higher levels of approval
Use of airplane travel	

4.3 Participants

After the survey design was finished, the survey was conducted among two respondent groups with different nationalities, Chinese and Dutch. For both groups the survey was conducted in their native language. For the Dutch respondent group data was collected from the 19th of July, whereas for the Chinese respondent data collection started on 11th of August. For both respondent groups the survey was taken offline on 11th of September.

To be able to share the survey in a variety of ways, the platform Qualtrics was used to 'host' the survey. During this period both surveys were shared by means of anonymous links and QR codes, which were actively distributed within the social networks of the author, his supervisor and the translator of the survey. Distribution was done by ways of social media (WhatsApp, Facebook, Instagram, LinkedIn and WeChat), email, person-to-person contact. Since it appeared harder to reach Chinese respondents during the period of data collection, posters with QR codes of the Chinese survey were also posted hallways of student housing and Asian supermarkets.

Upon entering the survey, the respondent was asked to give informed consent. Consequently, to get access to the survey, the respondents nationality, either Dutch or Chinese, needed to be confirmed. During the survey respondents were free to leave questions unanswered and were able to terminate participation at any moment. To incentivise individuals to fill in the questionnaire, a chance of winning a gift voucher was offered within both respondent groups. The gift vouchers that could be won were comparable amounts for the two respondent groups of €20 for Dutch respondents and 200 RMB for Chinese respondents.

To filter for legitimate responses, responses were only included if both of the following two criteria were met: 1. The respondent should have answered to the question "How do you approve SCSs?" and 2. The respondent should have answered the captcha question rightly. Accordingly, after excluding invalid responses, a total of 352 Chinese respondents (out of total of 547) and 347 Dutch respondents (out of total of 522) were left. Following from the Chinese responses that were qualified as useful, 169 had filled in the supplementary survey.

4.4 Representativeness of Sample

Representativeness of both samples was tested separately and was done for demographics (gender, age, and education) (*table 3*) and trust-levels (trust in individuals and trust in government) (*table 4*). For each, representativeness is discussed below.

Representativeness of Respondent Groups: Demographics

Table 3: Overview of representativeness of sample with respect to demographics.

Demographics	Chinese	Dutch
Gender	Overrepresentation of male respondents*	Overrepresentation of female respondents *
Age	Younger	Younger
Education	More highly educated	More highly educated

* a chi-squared goodness of fit-test assuming 99% confidence intervals has been performed, if p<.01 sample was not found to be representative

Gender

Within the Chinese respondent group 124 respondents (35.2%) reported being female and (60.3%) reported being male. Comparing this to the share of male population of 51.3%, as stated by The World Bank, an overrepresentation of male respondents is present and the sample is found to be non-representative.

Among Dutch respondents, 180 respondents (51.9%) reported to identify themselves as female and 166 respondents (47.8%) identified themselves as male. With a Dutch male population of 49.8%, as reported by The World Bank, an underrepresentation of male respondents is present in our sample.

Age

For age, in the Chinese sample a share of 96.4% of respondents reported being younger than 50 years old. Comparing this with the 17.4% of 60+ year olds present in Chinese population as reported by Statista (Statista, 2021c), this sample seems fairly younger than Chinese population. Therefore, with concern to age, the sample is unrepresentative for the Chinese population.

Within the Dutch respondent group, the number of respondents aged under 65 makes up for 97.7% of the respondents, the sample appears to be far younger when compared to the 20% that should be older than 65 years old as indicated by the CBS (2021). As for the Chinese sample, the Dutch sample seems to be younger on average than the average of the Dutch population. Therefore, the Dutch sample is not representative for the Dutch population with respect to age.

Education

Among Chinese respondents, the largest share (94.1%) of respondents reported an education level of ISCED 6 (Bachelor's degree) or higher. Compared to data of the OECD, which reports only 9% of Chinese population has got a Bachelor's degree or higher, the Chinese sample appears to be far more highly educated and not representative for the population with regard to education (*Education Attainment - Population with Tertiary Education - OECD Data*, 2021a). For the Dutch sample, 79.8% reported to have completed some sort of tertiary education (ISCED 5 or higher). Comparing these statistics with data of the OECD, which indicates among the Dutch population 52.26% has tertiary education, the sample of Dutch respondents seems to more highly educated and therefore, with respect to education, non-representative for the Dutch population (*Education Attainment - Population with Tertiary Education - OECD Data*, 2021b).

Representativeness of Respondent Groups: Trust-Levels

Table 4: Overview of representativeness of sample with respect to trust-levels. For all samples a chi-squared goodness of fit-test was performed, if p>.01 the sample was found to be representative

Trust-level	Variable	Chinese	Dutch
Trust in individuals	Overall trust	Lower	lower
	Trust in family	lower	representative
	Trust in acquaintances	higher	representative
	Trust in people after meeting for the first time	higher	higher
Trust in government	Trust in government	lower	higher

Representativeness of trust-levels was tested by comparing the collected data of both respondent groups with the data from the WVS by means of a *chi-squared goodness of fit-test* (assuming 99% confidence intervals) (*World Values Survey Association*, 2021). This was done for the data collected for the variable category '*trust in individuals*' and for the variable '*Trust in government*' (see *table 4*), since the questions asked in this category are from and identical to questions from the WVS. Since the WVS was distributed among a large group of Chinese and Dutch respondents, 3036 and 2409 respondents respectively, representativeness relative to the WVS, should also give a quite robust representation of both populations.

Knowing representativeness with concerning trust-levels is useful since hypotheses like '*individuals displaying low trust in individuals show higher levels of approval*' or '*individuals with higher trust in the government show higher levels of approval*' are tested for this research. A differentiating, non-representative, view of respondents will therefore have its influence on generalizability of research results.

Comparing trust-levels of our sample for all four variables in the '*trust in individuals*' category (see *table 4*) tells all four variables are not representative (p<.01). If the Dutch sample is compared two variables, 'trust in family' (p=.398) and 'trust in acquaintances' (p=.384) were observed to be representative (p>01).

Next to representativeness of trust-levels for trust in individuals, also representativeness of trust-levels in the government was tested. Here the test was only performed for the variable 'trust in government' and led to non-representativeness of both samples.

Now the methodology used for this research is clear, hypotheses that will be tested are discussed and the representativeness and limitations of the sample have been examined, the results of data analysis can be considered. Therefore, how data has been analysed, how the output of performed analyses should be interpreted, and what results interpretation of the output provided us with, will be discussed in the next section (*Chapter 4*).

CHAPTER 5: Results

In this section the results of data analysis will be discussed. Several statistical analyses that were performed to get to those results. Independent samples t-tests were performed to compare means of different samples and to determine whether samples differentiated significantly and linear regressions were performed do determine whether an independent variable was a significant predictor of the dependent variable (approval rate).

Since multiple statistical tests with a confidence assumption are performed, it is tried to limit type-I errors by making use of 99% (bootstrapped) confidence intervals. As in most cases a (directional) alternative hypothesis was tested, this mean this hypothesis was accepted for $p<.01$. Additionally, if not indicated otherwise, equal variances were assumed as sample sizes (Chinese vs. Dutch respondents) were large enough ($n>30$) and approximately equal (Fisher, 1925).

Results for the formulated hypotheses are discussed in order of the main and sub RQs. A quick overview of the rejected/accepted hypotheses can be found in *table 5.*

5.1 Testing the hypothesis of the Main RQ: "*What are approval rates of the Social Credit System (SCS) among Chinese citizens?*"

- *H1: Chinese respondents show approval of SCSs*

With 'strongly disapprove' being numerically classified as '1' and 'strongly approve as '5', the mean of approval rates among Chinese respondents was observed to be 3.95. As can be seen in *figure 1* this relatively high mean can be explained by setting off the group somewhat/strongly disapproving the system, which is almost non-present (3.41%), with to the approving group (76.14%), which forms the great majority. Thence, from these findings it can be concluded the large majority of Chinese respondents approve SCSs, by which H1 can be accepted.
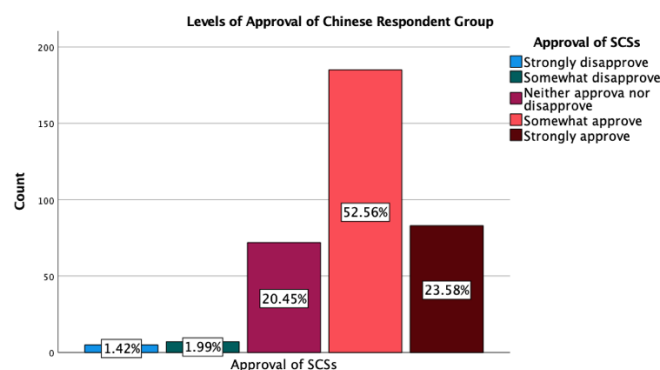

Figure 1: Bar Chart Distribution of Levels of Approval among Chinese respondents

Table 5: Overview of hypotheses, whether they are accepted or rejected. 'N/A' indicates the hypothesis was not applicable to the Dutch sample and 'NT' indicates the hypothesis was not tested for the Dutch sample.

Hypothesis	Chinese	Dutch
H1: Chinese respondents will show high levels of approval	Accepted	N/A
H2: Chinese respondents show higher levels of approval when compared to Dutch respondents	Accepted	N/A
H3: Chinese respondents show lower levels of trust in individuals compared to Dutch respondents	Accepted	N/A
H4: A nationwide credit system should be run by the central government	Accepted	Accepted
H5: Trust in the government is higher among Chinese respondents	Accepted	N/A
H6: Approval rates are higher for male respondents	Rejected	NT
H7: Approval rates are higher for older respondents	Rejected	NT
H8: Approval rates are higher for more highly educated respondents	Rejected	NT
H9: Approval rates are higher for wealthier respondents	Rejected	NT
H10: Approval rates are higher for respondents showing lower trust in individuals	Rejected	Rejected
H11: Approval rates are higher for respondents showing higher trust in the government	Accepted	Rejected
H12: Approval rates are higher for respondents perceiving the SCS as tool that improves accountability taken for one's actions	Accepted	Accepted
H13: Approval rates are higher for respondents perceiving the SCS as a tool that improves quality-of-life	Accepted	Accepted
H14: Approval rates are higher for participants of any SCS	Rejected	N/A
H15: Approval rates are higher for individuals experiencing their score as more fairly calculated	Accepted	N/A
H16: Approval rates are higher for individuals perceiving their score as relatively higher compared to friends/family	Accepted	N/A
H17: Approval rates are higher for individuals that perceive to be better informed about how their score is calculated	Rejected	N/A
H18: Approval rates are higher for individuals that experience more benefits	Rejected	N/A
H19: Approval rates are higher for wealthier respondents due to being more technology savvy (/ having more trust in technology)	Rejected	Rejected
H20: Approval rates are higher for individuals that perceive their data to be owned by government/Big-Tech already	Rejected	NT
H21: Concern whether same rules/standards apply to people in powerful positions is associated with lower levels of approval	Rejected	Accepted
H22: Approval rates are higher for individuals that report increased feeling of control over their score	Rejected	N/A
H23: Respondents that travel more show higher levels of approval	Rejected	N/A
H24: Respondents make more use of sharing economies show higher levels of approval	Rejected	N/A

5.2 Answering hypotheses of Sub RQ1: *"Are there differences in approval between Dutch and Chinese citizens?"*

- *H2: Chinese respondents show higher levels of approval when compared to Dutch respondents*

On average, Chinese respondents reported higher levels of approval (M = 3.95, SE = .04) than Dutch respondents (M = 2.79, SE = .07) This difference, 1.162, bias-corrected and accelerated confidence interval (BCa) 99% CI [.931, 1.390], was significant, *t*(586.23) = 14.50, p < .001, and represented an effect of *d* = 1.056.

Thence, as higher levels of approval are observed for Chinese respondents H1 can be accepted and Kostka's claim "Chinese respondents show high levels of approval" can be retained. Following the guidelines provided by Cohen (1988, 1990), the observed effect size indicates a large size effect.
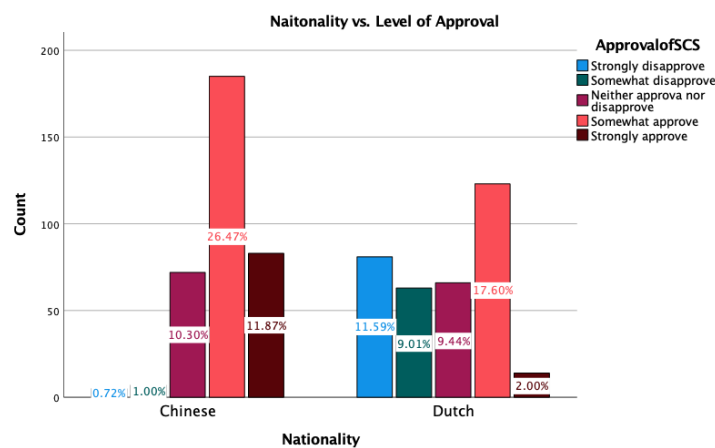

Figure 2: Bar Chart Distribution of Approval Rates of Chinese sample and Dutch sample

- *H3: Chinese respondents show lower levels of trust in individuals compared to Dutch respondents*

To test H3 independent sample t-tests were done for the variables associated to this hypothesis, which are the following variables: '*overall trust'*, '*trust in family'*, '*trust in acquaintances'* and '*trust in individuals after first time meeting'*.

As can be observed in *table 6*, trust-levels were found to be significantly lower for all four variables and effect sizes that were reported, indicated medium sized effects. Thence, since trust in individuals is found to be lower among Chinese respondents, H3 is accepted (Cohen, 1988; Cohen, 1992).

Table 6: Overview of means, mean differences, standard errors (SE), bias-corrected and accelerated confidence intervals BCa CI (99%), significance (p), and size effects in terms of Cohen's d for variables associated to 'Trust in individuals' for independent samples t-test performed to compare Chinese and Dutch respondent groups

Variable	Nationality	Mean	SE	ΔMean	BCa 99% CI	t (df)	p	d
Overall trust	Chinese	1.23	.02	-.086	-.168; .004	-2.577 (687.04)	.009*	.441
	Dutch	1.31	.02					
Trust in family (TIF)	Chinese	3.68	.03	-.195	-.288; -.106	-5.47 (601.04)	<.001*	.470
	Dutch	3.88	.02					
Trust in acquaintances (TIA)	Chinese	3.15	.02	-.482	-.587; -.380	-13.49 (682.72)	<.001*	.471
	Dutch	3.64	.03					
Trust in people after meeting for the first time (TIP)	Chinese	2.18	.03	-.526	-.642; -.393	-11.94 (690.55)	<.001*	.581
	Dutch	2.71	.03					

* significant difference from zero between Chinese and Dutch respondent groups (p<.01)
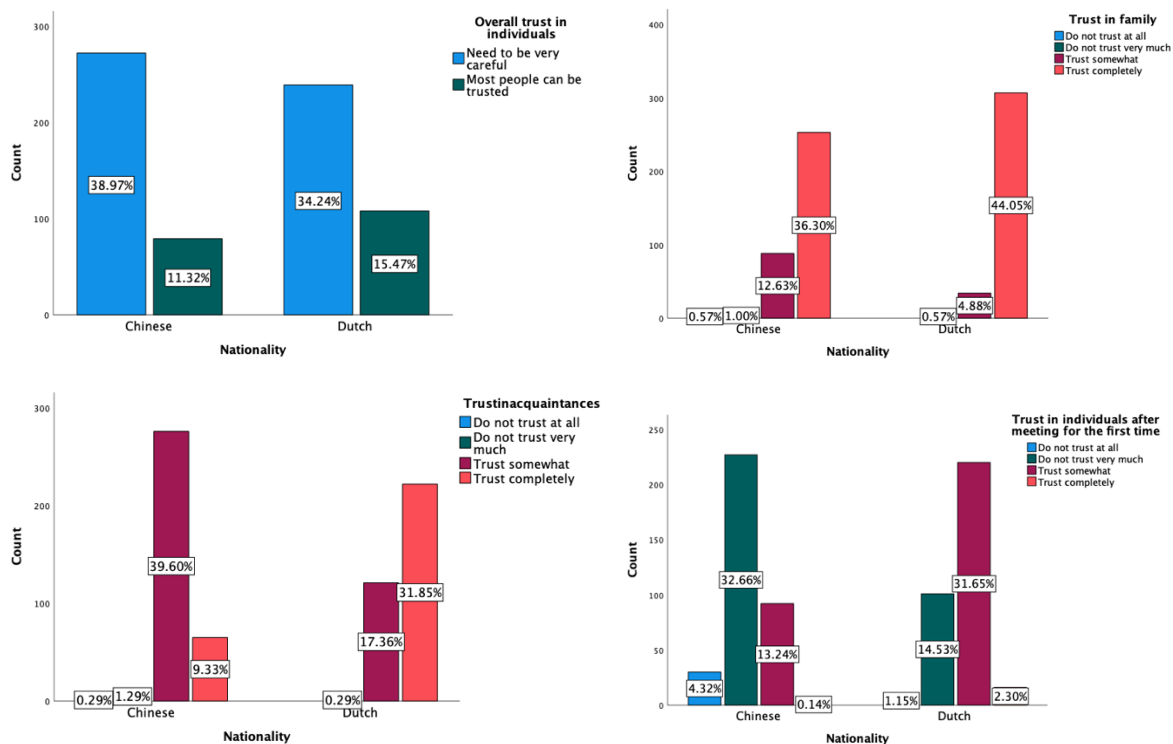
Figure 3: Overview of Bar Chart Distributions of Variables Associated with Trust in Individuals ('Overall Trust', 'Trust in Family', Trust in Acquaintances', and 'Trust in people after meeting for the first time')

- *H4: A nationwide credit system should be run by the central government*

To test this hypothesis the distribution of associated variable *'Who should manage a SCS'* is looked at. From this distribution for the Chinese sample counts that are observed are

$n_{government}$=332 and $n_{Big-Tech}$=18. A large majority thence wants a nationwide SCS to be run by the government from which H4 can be accepted.

In addition, if the distribution of the Dutch sample is looked at, a similar distribution is found. With $n_{government}$=314 and $n_{Big-Tech}$=13, also among Dutch respondents the government is highly favoured to run a nationwide SCS. As a result, H4 can also be accepted for the Dutch respondent group.
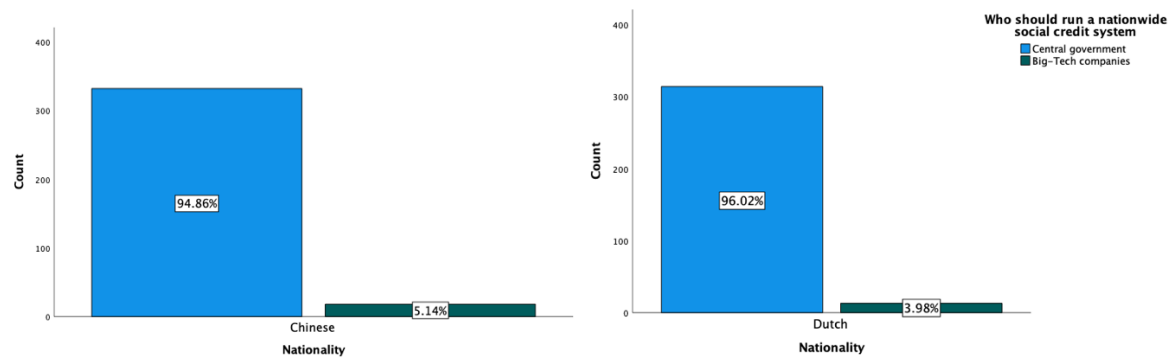

Figure 4: Bar chart with distribution of the variable 'Who should run a nationwide SCS?' for both respondent groups

- *H5: Trust in the government is higher among Chinese respondents*

On average, Chinese respondents reported higher levels of trust in the government (M = 3.07, SE = .03) than Dutch respondents (M = 2.84, SE = .03) This difference, .236, BCa 99% CI [.148, .323], was significant, $t(683.32) = 5.26$, p < .001, and represented an effect of $d = .588$. As reported levels of approval are found to be higher for Chinese respondents, H5 can accepted. Additionally, if guidelines provided by Cohen (1988,1990) are followed a medium sized effect is observed.
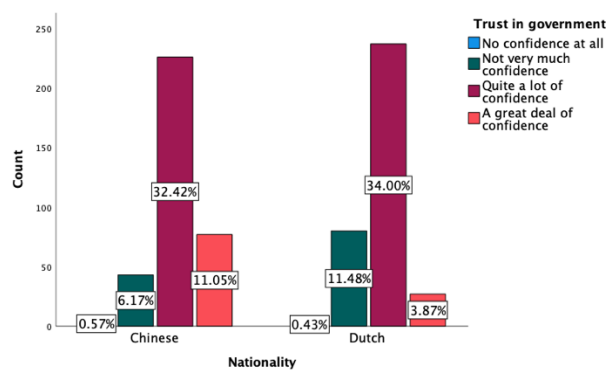
Figure 5: Bar Chart Distribution of Trust in Government of Chinese sample and Dutch sample

5.3 Testing the hypotheses of Sub-RQ2: "*If differences are present, can explanatory factors be identified*?"

To answer the hypotheses given for sub RQ2 an answer should be given to the question whether variables can be seen as an explanatory factor. To know which variables can be seen as correlates of approval, linear regressions are performed for non-binary ordinal independent variables. When the independent variables concerned a binary nominal variable independent sample t-tests were used. As the dependent variable (approval) consisted of 'Likert-scale'

answer possibilities[31], when performing a linear regression, the assumption was made that steps between answer possibilities are equal. Thence, if '3' is the central answer '2' is as far removed from '3' as '4' is removed from '3' and equally, as '1' is as removed from '2'.

For the hypotheses associated with Sub RQ-2, tests were performed for correlates of approval as found by Kostka. At first, these tests were done for the Chinese sample only. Accordingly, if this led to retainment of Kostka's results, and thus acceptance of our hypotheses, it was tested whether the explanatory correlate is a significant correlate for Dutch respondents as well. Logic behind this procedure is that, as Kostka's results are based on Chinese respondents only, her results are more likely to apply to Chinese than to Dutch respondents (or both groups).

Testing Correlating Variables Found by Kostka for the Chinese Sample

- *H6: Approval rates are higher for male respondents (Independent samples t-test)*

Since the group that identified themselves as 'other' was negligible (n=3 on total of 352 respondents), the variable gender was treated as a binary variable (female/male). Thence an independent samples t-test was performed.

On average, Chinese male respondents reported slightly lower levels of approval (M = 3.95, SE = .05) than Chinese female respondents (M = 3.95, SE = .08) This difference, -.001, BCa 99% CI [-.241, .239], was not significant, $t(246.53) = .01$, p =.992; however, it represented an effect of $d = .806$. As reported levels of approval are not significantly higher among male respondents, H6 was rejected. Nevertheless, guidelines provided by Cohen (1988,1990) indicate a large sized effect is observed.
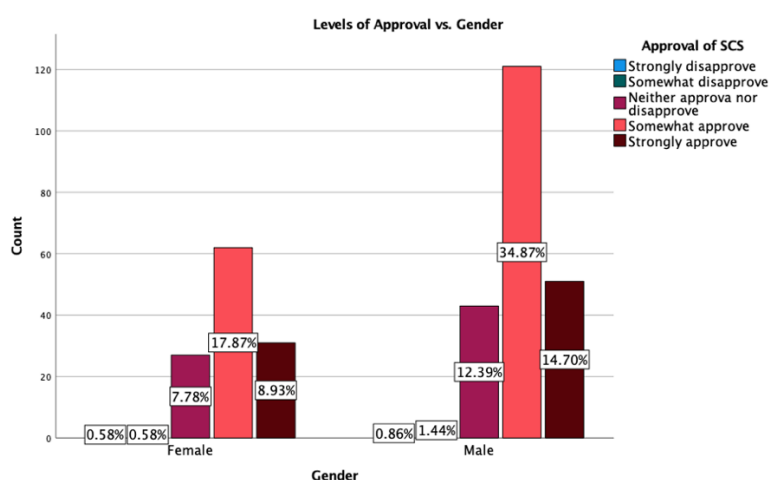
Figure 6: Levels of Approval compared for male and female (Chinese) respondents

Variables From Main Survey: H7-H14 (Linear Regression)

From the main survey linear regressions were performed for the variables observed in *table 7* Correlating variables that were found were "Trust in the government', 'Trust in government with personal data', 'Accountability for actions', and 'SCS as QOL improving'. Furthermore, as expected relationships of the variables are positive, H11, H12, and H13 are accepted. The largest correlations, and thence explanatory power, are observed for 'SCS as QOL improving' and 'Accountability for actions', which substantiates to Kostka's finding the SCS is observed through a frame of benefit generation.

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[31] Given answer possibilities: *strongly disapprove (1) – somewhat disapprove (2) – neither approve nor disapprove (3) – somewhat approve (4) – strongly approve (5)*

Furthermore, the variable 'trust in government with personal data' is noteworthy. As the willingness to share data with the government is found to be explanatory variable, and positively related, this might indicate privacy concern is not present if a SCS is run by the government

In addition to the above-named explanatory correlates that were found significant, the variables 'Trust in Family' (TIF), 'Trust in Acquaintances' (TIA), and 'Trust in People after meeting for the first time' (TIP) are found to be very close to significant. Remarkably, for these variables the expected relationship is positive, whereas a negative relationship would be expected. Nevertheless, although H10 is rejected, as the observed relationship is remarkable and correlation close to significant, 'TIF', 'TIA', 'TIP' will also be tested for the Dutch sample.

Furthermore, as from the other variables tested non was observed to be significant, H7, H8, and H9 were rejected. Although non-significant and no large correlations are observed, indicated relationships are positive and thence do not deviate from what is expected.

Table 7: Output of linear regressions performed for 'Approval of SCSs' (dependent variable) and possibly associated (independent) variables from the main survey. Variables tested are indicated, as well as b coefficients, standard error of b (SE B), standardized b (Beta), correlation (adjusted R^2), and the reported significance (p). For all variables an increasing answering scale was used, meaning a positive b coefficient indicates an increase in variable X is associated with an increase in level of approval.

Variable	B	SE B	Beta	Adjusted R^2	p
Age	.070 (-.066; .188)	.047	.076	.003	.155
Education	.070 (-.210; .052)	.049	.080	.003	.137
Income	.035 (-.049; .116)	.032	.069	.001	.279
Overall trust	-.142 (-.408; .123)	.103	-.074	.003	.166
Trust in Family (TIF) [+]	.210 (-.003; .402)	.106	.150	.020	.012
Trust in Acquaintances (TIA) [+]	.197 (-.078; -.474)	.093	.113	.010	.034
Trust in people after meeting for the first time (TIP) [+]	.178 (-.014; -.374)	.078	.078	.013	.020
Trust in the government [+]	.324 (.127; .526)	.072	.250	.060	<.001 *
Trust in government with personal data [+]	.274 (.132; .429)	.059	.271	.064	<.001 *
Accountability for actions [+]	.597 (.468; .723)	.052	.628	.392	<.001 *
SCS as QOL improving [+]	.645 (.522; .768)	.047	.686	.469	<.001 *

* Significant assuming 99% confidence
+ taken into testing of correlates for the Dutch sample

Tested Variables from Supplementary Survey: H14-18 (Linear Regression)
Variables for which a linear regression was performed from the supplementary survey c can be found in *table 8*. As sample sizes of the variables from the supplementary survey (± 160 responses) were significantly smaller than for the main survey (± 352 responses) it should be noted results are less generalizable.

Furthermore, to test H14 and H18 the associated variables, which are 'SCS participation and 'Experienced benefits' were split into the SCS which could be participated in and benefits that could be experienced. Accordingly, these split variables ware turned into binary variables, from which the logic regression was performed. As not all split variables provided a large enough sample size (n>20), not for all split variables a linear regression could be performed.

From the tested variables only 'Score perception compared to F&F' and 'Fairness of scoring' were found to be significant predictors, leading to acceptance of H15 and H16 and rejection of H14, H17 and H18. Although 'Score perception compared to F&F' and 'Fairness of scoring' show relatively low correlations, with betas of .202 and .222, a notable positive relation is observed. Additionally, although not significant, for 'informedness about system' the expected positive relation is observed.

Furthermore, looking at the split variables of 'participation in SCS', the expected positive relation is observed for Sesame Credit, but an unexpected negative relation is observed for Tencent Credit. Although both relations are not significant, this might indicate participants of Sesame Credit are more satisfied about SCS they participate in, than participants of Tencent Credit.

In addition, among the split variables for 'benefits experienced' 'obtain a loan without difficulty' remarkably enough seems to have a negative effect on approval, whereas the other possible experienced benefits show the expected positive relation. Although explanatory power of none of the split variables for 'benefits experienced' is significant, with a significance of .038 'fast-track check-in' comes close.

Table 8: Output of linear regressions performed for 'Approval of SCSs' (dependent variable) and possibly associated (independent) variables from the supplementary survey. Variables tested are indicated, as well as b coefficients, standard error of b (SE B), standardized b (Beta), correlation (adjusted R^2), and the reported significance (p). For all variables an increasing answering scale was used, meaning a positive b coefficient indicates an increase in variable X is associated with an increase in level of approval. For the split variables of 'SCS participation' and 'Experienced benefits' only variables with a sample size of n>20 were included.

Variable	b	SE B	Beta	Adjusted R^2	p
Sesame Credit	-.180 (-.147; .473)	.119	.103	.006	.131
Tencent Credit	-.047 (-.508; .429)	.166	0.016	-.004	.742
Fairness of scoring	.195 (.014; .365)	.0664	.202	.035	.006*
Score perception compared to F&F	.105 (.018; .193)	.032	.222	.043	<.001*
Informedness about system	.114 (-.057; .286)	.067	.136	.010	.087
Obtain loan without difficulty	-.078 (-.534; .264)	.148	-.037	-.003	.554

Fast-track visa	.168 (-.135; .473)	.121	.088	.004	.167
Fast-track check-in	.232 (-.038; .526)	.109	.103	.007	.038
Other travel related benefits	.155 (-.119; .400)	.100	.098	.006	.126

* Significant assuming 99% confidence

Testing Suggested Correlating Variables by Kostka for the Chinese Sample

Main Survey: H19-H21

When testing suggested predicting variables assuming 99% confidence, no significant predictor was found from the variables from the main survey (see *table 9*) . Yet, as 'Trust in technology' and 'Concern if same rules/standards apply to people in powerful positions' are found to be correlates close to significant, they will be tested for the Dutch sample

Nevertheless, as no significance is observed for variables associated with H20, this hypothesis can be rejected. What should be noted is that, although non-significant, an unexpected negative relationship is observed for both associated variables. Especially for the variable 'Concern data-sharing with government' this is remarkable, as Kostka suggested the perception data is already owned by the government would increase level of approval.

Concerning the variables Trust in technology' and 'Concern if same rules/standards apply to people in powerful positions', low correlations are found with .029 and .024 respectively. The observed relationship for H19, however, is positive and thence as expected Nonetheless, as 99% confidence is assumed for this study, H19 can still not be accepted. Yet, Testing the variables for the Dutch sample be interesting and will therefore be done. Remarkably, for H21, an unexpected negative relationship is indicated. Whereas one would expect that increased 'concern if same rules/standards apply to people in powerful positions' would undermine perceived fairness and therefore approval, the contrary is observed. H21, therefore, is rejected. Nevertheless, as the relationship seems counterintuitive, the variable will be tested for the Dutch sample as well.

Table 9: Output of linear regressions performed for 'Approval of SCSs' (dependent variable) and possibly associated (independent) variables from the main survey. Variables tested are indicated, as well as b coefficients, standard error of b (SE B), standardized b (Beta), correlation (adjusted R^2), and the reported significance (p). For all variables an increasing answering scale was used, meaning a positive b coefficient indicates an increase in variable X is associated with an increase in level of approval.

Variable	**b**	**SE b**	**Beta**	**Adjusted R^2**	***p***
Trust in technology [+]	.088 (-.012; .182)	.026	.179	.029	.019
Concern data-sharing with government	-.071 (-.177; .048)	.044	-.094	.006	.109
Concern data-sharing with Big-Tech	-.020 (-.116; .100)	.040	-.028	-.002	.625
Concern if same rules/standards apply to people	.140 (-.004; .285)	.055	.164	.024	.018

in powerful positions [+]					

Supplementary Survey: H22-24

From the tested variables from the supplementary survey that might yield predictor variables, no significant predictors were found, as can be seen in *table 10*. This has led to rejection of H22, H23 and H24. Nevertheless for 'Control over score', 'Use of high-speed railway travel', and 'Use of airplane travel' the expected relationships were observed. Although an unexpected negative relation of 'use of sharing economies' with approval was found, as the correlation observed is 0, no value should be attached to this outcome.

Table 10: Output of linear regressions performed for 'Approval of SCSs' (dependent variable) and possibly associated (independent) variables from the supplementary survey. Variables tested are indicated, as well as b coefficients, standard error of b (SE B), standardized b (Beta), correlation (adjusted R^2), and the reported significance (p). For all variables an increasing answering scale was used, meaning a positive b coefficient indicates an increase in variable X is associated with an increase in level of approval.

Variable	b	SE B	Beta	Adjusted R^2	p
Control over score	.116 (-.075; .301)	.069	.134	.012	.095
Use of high-speed railway travel	.160 (-.121; .475)	.114	.130	.011	.159
Use of airplane travel	.166 (-.137; .543)	.129	.114	.007	.198
Use of sharing economies	-.056 (-.187; .090)	.054	-.080	.000	.309

Testing (Significant) Correlating Variables for the Dutch Sample

From the variables that were tested, nine (close to) significant correlating variables from the main survey were tested for correlation with approval in the Dutch sample. From these tests, three significant correlates were found (see *table 11*). As for the Chinese sample 'Accountability for actions' (R^2=.312), and especially 'SCS as QOL improving' (R^2=.783) show a positive relation that is strongest correlated with approval. The claim that approval of SCSs is larger when it is perceived through a frame of benefit generation, therefore, also sustains for Dutch citizens. Furthermore, although correlation is lower than for the Chinese sample, 'Concern whether same rules/standards apply to people in powerful positions' is found to be a significant predictor for the Dutch sample, where it was not for the Chinese. Also, in contrary to the counterintuitive negative relationship that was observed for the Chinese sample, here the expected positive relationship is examined.

Output of the regression for variables 'Trust in Family' (TIF), Trust in Acquaintances' (TIA) and Trust in People after meeting for the first time' (TIP), which are associated with 'trust in individuals', has given a similar remarkable result as was observed for the Chinese sample. Although non-significant, as for the Chinese sample, a positive relation between trust and approval is observed. Whereas one would expect individuals to be less trusting towards other individuals to approve the SCS, since it is implemented to increase trust, results show the

opposite. Possible explanations to this remarkable result will therefore be gone into in the discussion section.

   With respect to variables 'Trust in government', 'Trust in government with personal data', and 'Trust in technology' that were tested, no significant correlations were found. Remarkably, for 'Trust in the government' an unexpected negative relationship is observed, whereas for 'trust in government with personal data' the expected positive relationship is observed. However, as correlations of both variables, and especially 'Trust in government', are (close to) zero and far from significant, no conclusions can be drawn from these results. In short, from tested variables, H12, H13 and H21 can be accepted for Dutch respondents and H10, H11, and H19 are rejected.

Table 11: Table 2: Output of linear regressions performed for 'Approval of SCSs' (dependent variable) and possibly associated (independent) variables for the Dutch respondent group. Hypotheses and associated variables tested are indicated, as well as b coefficients, standard error of b (SE b), standardized b (Beta), correlation (adjusted R^2), and the reported significance (p). For all variables an increasing answering scale was used, meaning a positive b coefficient indicates an increase in variable X is associated with an increase in level of approval.

Variable	b	SE b	Beta	Adjusted R^2	p
Trust in Family (TIF)	.267 (-.225; .810)	.185	.076	.003	.151
Trust in Acquaintances (TIA)	.150 (-.214; .519)	.138	.059	.001	.278
Trust in People after meeting for the first time (TIP)	.223 (-.099; .531)	.120	.104	.008	.071
Trust in the government	-.106 (-466; .209)	.121	-.047	-.001	.421
Trust in government with personal data	.054	.038	.079	.003	.137
Accountability for actions	.608 (.554; .843)	.056	.560	.312	<.001 *
SCS as QOL improving	.947 (.858;1.050)	.033	.612	.783	<.001 *
Trust in technology	-.043 (-.149; .081)	.041	-.054	.000	.270
Concern if same rules/standards apply to people in powerful positions	-.390 (-.563; -.202)	.070	-.301	.088	<.001 *

   *significant assuming 99% confidence

CHAPTER 6: Discussion

In this section, results and limitations of this thesis will be discussed. Findings that were found to be remarkable are highlighted and possible explanations to these findings will be sought for. Furthermore, limitations of this research and other factors that might have influenced results will be examined and possible topics for future research will be suggested.

6.1 Rates of Approval Among Chinese Respondents

Explaining Low Levels of Disapproval

Most interesting of the outcomes, presumably is confirmation of the finding that Chinese respondents show high levels of approval towards SCSs, as was also found by Kostka. Remarkably, with 3% of disapproving Chinese respondents, even a similar small share of disapproving respondents was observed, which is at least noteworthy. As Kostka noted, two possible explanations can be given to which a third one can be added. First, it could be China's authoritarian political context is reflected. Second, it is plausible the system is seen through a frame of benefit-generation and, therefore, respondents do indeed approve the system as they experience it as a beneficial system. Third, it could be, as SCSs monitor online environments, respondents want to show 'desired' behaviour to increase their score.

Getting back to the first possible explanation, by making use of 'anonymous links' and by not collecting identifiable information, it is tried to safeguard anonymity of respondents. This is done to limit possibility of privacy violations, but also to (try to) ensure answers are given from an autonomous view. However, as China is not unfamiliar with attempts to control the internet and remove anonymity of users, whether anonymity can be guaranteed is hard to conclude. Likewise, fear the State is watching over their shoulder might still be present among respondents (Farrall, 2008). Subsequently, with multiple known cases in which critique of individuals led to (jail) sanctions imposed by the State, it could be imagined even the slightest fear being present withholds respondents from showing disapproval (Ruan et al., 2021; Sky, 2021; Wong, 2021).

Another possibility could be coming from the third suggested explanation and comes from SCSs itself. As online environments are monitored and behaviour performed online influences PCSs, respondents possibly play into this. Therefore, if respondents presume they are not acting anonymous, it could be 'desired' behaviour (reporting approval) is performed in an attempt to increase their PCS. Although, it might seem rather simplistic, depending on whether such behaviour is actually (perceived to be) rewarded, respondents might have acted out of this intent.

Yet, whether anonymity is perceived by respondents, cannot be answered from outcome of this results. Therefore, as it might play a crucial role in safeguarding autonomy of respondents, it might certainly be worth exploring for future research.

Accordingly, if the second explanation is looked at, findings supporting this claim are found. Main outcome justifying this claim are the significant correlations found for both samples for the benefit-generating variables 'Accountability taken for actions' and 'SCS as QOL improving'. From the perspective of benefit generation, especially the variable 'SCS as QOL improving' was found to be crucial in determining approval. With correlations of .469 (Chinese sample) and .783 (Dutch sample), it can be pointed out as the most influential independent variable that was found. From there onwards, if one looks back on fear of sanctions that might suppress disapproval rates, one would expect to find these 'disapproving' respondents among the group

of doubters[32][33]. Accordingly, if this group is accounted for as individuals 'disapproving' and accordingly is set off against the group of 'approving' respondents, high levels of approval remain (23.86% vs. 76.14%). Therefore, even when suppressed disapproval rates are accounted for, a majority of respondents still seem to perceive the system as beneficial.

An important note that should be made here, however, is that a *majority* seems to approve SCSs. Therefore, if rumours are right that SCSs are used to suppress *minorities*, this won't be observed from these findings. Additionally, if SCSs would make use of disproportional sanction, only a minority will likely be impaired by such disproportional sanction. Concerns regarding the use of disproportional sanction are not taken away either.

Furthermore, it was also found the SCSs should be run by the government. Combining this finding with the explanatory correlates of 'Trust in the government' and 'Trust in government with personal data' might also back the claim of 'perception through a frame of benefit generation'. As individuals that show increased trust in the government and also want the government to run SCSs, they presumably trust the government to act in their interest. Following from this, as a government acting in one's interest should be beneficial to the individual one way or another, these findings might substantiate to the perception of SCSs as a 'benefit-generating' tool. Likewise, a similar kind of reasoning can be used for the explanatory correlate of 'Trust in technology' as it might indicate respondents believe the use of technology will yield benefits.

Privacy Concerns

Since 'Trust in the government with personal data' was found to be an explanatory variable of approval, privacy concern with regard to data-sharing (with the government) seems to diminish when approval increases. Although it cannot be concluded this indicates privacy concern is not present, it at least indicates privacy concern is lower among Chinese respondents.

As an explanation to low(er) privacy concern Chinese are often associated with, deeply rooted Confucianism is often alluded to. Mostly since Confucianism promotes a collectivistic thought, individual interest is sacrificed in interest of the community (Chen & Tsoi, 2011; Li & Borah, 2018). From this collectivistic point of view, it can be argued Chinese individuals show lower privacy concern as they are willing to sacrifice their own privacy to contribute promotion of a 'more trustworthy, virtuous, and prosperous state', which are the goals that ascribed to the SCS by the CCP.

Nevertheless, as this explanation is quite often disposed as too simplistic, another explanation is suggested as well. Recent developments show the Chinese government is actively tightening oversight on privacy protection to protect its citizens from privacy violations (Eigenraam, 2021b; Ruiyang et al., 2021; Shujing et al., 2021; Tong & Yi, 2021; Yuzhe & Zhang, 2021). It might therefore be, privacy regulations are in place in China surpass regulations in the EU or the US, making privacy concern potentially less relevant/needed (Farrall, 2008). Although increased regulation and sanction focuses on commercial enterprises and not on governmental actors, it seems to indicate the government has the best interest at heart with citizen privacy. Left in the middle whether this is indeed the case and also whether privacy is also protected within the government itself, it might give rise to a perceived feeling of safety towards the government with respect to data sharing. Therefore, lower privacy concern of Chinese citizens can possibly be understood from a perception of increased protection by their government

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[32] Assuming 'disapproving' respondents filled in the survey at all
[33] Respondents approving nor disapproving SCSs (20.45%)

Trust in Individuals

For the variables associated with 'Trust in individuals' a remarkable outcome was observed. As the SCS is implemented to increase trust among individuals, one would expect individuals approving the system to perceive lack of trustworthiness of fellow citizens as an issue that needs solving. Therefore, a negative relation, lower trust in individuals is associated with higher approval, was expected to be observed. However, although weakly correlated and just close to significant, Chinese respondents show a positive relation between 'Trust in family' (TIF), acquaintances (TIA) or people after meeting for the first time (TIP) and approval. TIF', 'TIA', and 'TIP' are thence associated with higher approval of SCSs. Interestingly enough, similar positive relations are also observed for the Dutch sample. As for the Chinese sample, all three split variables are very close to significant, and the same relationship is observed in the Dutch sample, it is assumed the positive relation is at least somewhat present.

Thereupon, an explanation was sought for, by which two possibilities are thought of. First, higher overall trust in individuals might come with increased overall trust in human conduct. Consequently, this might result in increased trust in introduced policies, such as the SCS. This reasoning, however, is somewhat contradicted by the finding 'Overall trust in individuals' (OTI) is negatively associated with approval for both respondent groups. A second explanation that could be thought of goes into the fact TIF', 'TIA', and 'TIP' all go into people that are somewhat familiar to a person. Therefore, the perception might be present that familiar individuals, but mostly F&F and acquaintances, will benefit or at least not suffer from implementation of SCSs, which uplifts likeliness of reported approval.

Scoring and Rules/Standard of SCSs

Other aspects that appeared to significantly explain approval, were 'Fairness of scoring' and 'Perceived score compared to friends & family'. These were variables that were also found by Kostka, and therefore were expected. A contradictory finding to fairness of scoring, however, is found in the outcome of the variable 'Concern whether same rules/standards apply to people in powerful positions'. With increased concern being related to higher approval, this result seems counterintuitive. Mainly since one would assume non-universal rules/standards would impair perceived fairness, the opposite and thence a negative relation would be expected. An explanation therefore, seems wishful.

Looking for an explanation of this unexpected relation, several aspects can be thought of. Firstly, benefits the system provides might outweigh the concern present. Substantiated by the earlier identified correlates related to the perception of the SCS as a 'benefit-generating' tool, this reasoning seems legitimate. Secondly, respondents might have evaluated whether it is wishful rules/standards apply to everyone. Further-reaching, they might have even questioned whether the system should apply to certain 'people in powerful positions' at all. As an example, to illustrate this, the president of a country might actually provide the best example. Would a president for instance be able to lead a country and take decisions/actions needed if he is ought to perform 'desired' behaviour only? Isn't it needed to perform 'undesired' behaviour in some cases[34]? Similarly, one could ask whether a person fulfilling the function of president[35] is legitimized if they don't possess the highest PCS. As respondents might reflect on those questions, they might have concluded at least some leniency might be necessary for 'people in powerful positions'. From the illustrated way of reasoning at least, this seems reasonable. If such an evaluation is made, respondents might be more concerned to what degree same rules/standard apply to everyone instead of whether the same rules/standards do apply to everyone in full, for which approval is not or less affected by increased concern.

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[35] Assuming the function of president is seen as the highest position that can be reached within a country

Although the questions going into whether rules/standards should be universal are difficult, if not impossible, to answer, for implementation of a SCS answers to those questions are key. Conjointly, as the nature of those questions is philosophical, answers can be derived from different ethical perspectives, such as virtue ethics, consequentialism or utilitarianism, making the answers given to these questions cannot be classified as 'right' or 'wrong'. In addition to the question whether rules/standards should be universal, questions going into when behaviour is 'desired' or 'undesired' can and should also be asked. Consequently, it would be interesting to know what ethical perspectives determine whether behaviour is classified as 'desired'/'undesired' behaviour of SCSs and thereby which ethical views form the foundation of the system. Although doing research on this topic most likely is hard, as not much is known on 'behaviour criteria', what rules/standards apply, and who they apply to, it would certainly make an interesting topic for future research.

6.2 Chinese Rates of Approval vs. Dutch Rates of Approval

Explaining Differences in Approval

The most important difference that was observed, is a higher level of approval among Chinese respondents. Mostly, the lower observed mean for Dutch respondents can be attributed to a larger group of disapproving respondents that is present as the Dutch group showing 'strong disapproval' is quite existential (23.3%). Since this group is much larger than the disapproving group present among Chinese respondents this might indicate a bias against SCSs is present, caused by negative framing by non-Chinese media sources. Interestingly enough, however, the largest share of Dutch respondents 'somewhat approves' SCSs (35.4%), which seems to contradict this claim. Among Chinese respondents, on the other hand, an opposite bias could be present as well. Mainly as it is known Chinese state media predominantly spread 'propagating' news, some positive influence being present on Chinese approval seems likely. This argument is substantiated by the almost negligible share of disapproving Chinese respondents. Yet, a counterargument weakening this claim could be that most Chinese respondents have experienced the SCS, by which 'unsubstantiated bias' is taken away and a more grounded opinion is formed.

Although subjectivity, and thence absence of bias, among respondents could not be filtered for, it was at least attempted to ensure subjectivity of Dutch respondents. By sticking to 'social credit systems' and not mentioning 'The Social Credit System' or China, it was tried to assure no claim was made on prior-knowledge (and formed/shaped opinion) on those latter topics. Additionally, as most of the Dutch respondents were likely not familiar with SCSs, Dutch respondents were asked to read a (neutral) explanation statement on SCSs. Next to its function to ensure respondent had at least a bare minimum of understanding of SCSs, it should also safeguard respondents from misinterpreting the system. As the system is often interpreted to be similar to the 'social score system' as depicted in Black mirror's episode 'Nosedive', misinterpretations like those should be precluded[36].

As most of the Chinese respondents are subject to SCSs and thence 'The Social Credit System', unsubstantiated bias should already have been removed by their actual experience with SCSs. Yet, subjectivity still might have resulted from experience with SCSs and could either have positive or negative effects on approval. Whereas a positive personal experience could make respondents less critical and therefore more approving, a more negative personal experience could lead away from the benefits it might provide and lead to a more sceptical

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[36] As in the 'social score system' counterparts 'score/rate' each other, functioning of the system is fundamentally different from SCS, for which associations with the system were aimed to avoid.

view. Nonetheless, if biases are present and if so, to what extent, cannot be derived from results of this study.

Fortunately, a more satisfactory explanation to the higher levels of approval among Chinese respondents, is provided by the explanatory correlates that were found for both samples. As the variables 'SCS as Quality-of-Life improving' and 'Accountability for action' were found to be (strong) predictors for both respondent groups, a difference in perception of benefit-generation seems present. Especially 'SCS as Quality-of-Life improving', with a correlation of 78.3%, seems to determine levels of approval for Dutch respondents. Supposedly, lower approval rates among Dutch respondents can thence be explained by the fact Dutch respondents perceive SCS to be non-improving to quality of life, implying Dutch respondents perceive SCSs less through a frame of benefit-generation. A factor that might contribute to the increased benefit -generating perception of Chinese respondents, could be the fact they are familiar with and have experienced the system as it is. However, as Dutch respondents don't participate in SCSs, they are excluded from possible negative as well as positive influence of experience with SCSs.

6.3 Limitations
This thesis has to deal with several limitations. These limitations are gathered under 'representativeness of samples' and 'comparing with Kostka' and are discussed in the same relative order below.

Representativeness of Samples
Representativeness of both samples was examined with respect to demographics and trust-levels. A limiting factor that should be noted right-away is that, as the survey was conducted online, and thence, only the internet population can be accounted for. As only 70.6% of the total Chinese population has access to internet, a large part of (most likely rural) Chinese population[37] is excluded (Statista, 2021a). Consequently, this could have three effects on resulting approval rates. First, as part of the benefits SCSs provide (e.g., discounts in online shops, sharing economies, benefits in online dating) are experienced online approval would have been lower if the full population was accounted for. Mostly as it is likely the part of the population that does not have access to internet will perceive the system less through a frame of benefit-generation from SCSs, approval of this group is expected to be lower. Second, as access to information will be limited as well it is likely these individuals are less (or not) familiar with SCSs and have less insight in how these system works, for which I expect lower approval has resulted. Third, as individuals without access to internet cannot be surveyed in online environments, (online) privacy concern might be lower, which might have led to higher approval.

Concerning demographics both respondent groups were tested for gender, income and education and were both found to be non-representative on all three aspects (see *table 3*). As a consequence, results of this study are most likely biased and therefore cannot be generalized. In more detail respondent groups appeared to be far younger and far more highly educated for the Chinese as well as the Dutch sample. Moreover, an overrepresentation of male respondents was found for the Chinese sample and an overrepresentation of female respondents was found for the Dutch respondent group. Most likely skewedness in income and education stem from the social network that was used of the author and supervisor. As both are in the age group of 25-35 and well-educated this most likely contributed to the fact a younger and more highly educated sample of respondents was collected. Although correlation with approval was not

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[37] As 97% of Dutch citizens has access to internet, only a negligible share of Dutch respondents is excluded, for which the Dutch interpopulation is assumed to be representative (Statista, 2021b).

tested for due to limitations in language[38], as younger and more highly educated respondents are more likely to live in more urban areas, this bias is expected to have led to an overrepresentation of urban respondents within both respondent groups. Followingly, as respondents are younger and more highly educated respondents are expected to face better prospects and/or have higher income[40] by which they represent a 'more privileged' (more highly educated and higher income) part of the population. As 'more privileged' individuals have increased funds (and ability) to appeal against perceived unfairness, less worries of facing disproportional sanction (or other perceived unfair scoring) are expected to be present, higher approval rates are expected to be observed for this part of the population.

Furthermore, representativeness was also tested for trust-levels. This was done with respect to 'Trust in individuals' and 'Trust in the government' and by comparing those with data from the WVS. For representativeness with regard to 'Trust in individuals' no unambiguous conclusion could be drawn for both samples. This was the case due to the fact one split variable of 'trust in individuals' showed higher trust compared to the population, whereas another split variable showed representativeness of lower trust compared to the population. With respect to 'trust in the government' the Chinese respondent group reported lower trust and the Dutch respondent group reported higher trust compared to the population. As trust in the government was found to be a significant correlate of approval, it is expected the differentiating trust levels have influenced results. Consequently, one would expect lower trust in the government among Chinese respondents to have resulted in lower approval rates among Chinese, whereas one would expect the higher trust in the government among Dutch respondents has resulted in higher approval among Dutch respondents.

Overall, balancing the noted effects for the Chinese sample, I expect the most significant effect on approval to come from the significant underrepresentation of rural individuals, for which observed approval rates among Chinese respondents are expected to be higher compared to the full population. Mostly as the underrepresentation of rural individuals is caused by the online, as well as the 'more privileged' environment in which the survey was conducted, the higher observed approval stemming from this underrepresentation is expected to outweigh the lower approval resulting from the lower trust in the government that is observed. Concerning the Dutch sample, trust levels as well as the 'more privileged' environment are likely to have led to higher observed approval.

Differences in Culture / Language

Next to demographics, other implications that might have influenced results stem from cross-cultural differences and differences in language. Predominantly, especially as cultural differences are present, sensitive terms such as 'trustworthy', 'integrity', and 'virtuous' might have been interpreted differently by respondents within, but mostly between respondent groups. Additionally, as both surveys are translated from English into the native language of the respondent groups, (minor) differences in phrasing or translation of terms might have affected how questions/answers are interpreted.

Furthermore, not taking into account the autocratic environment in which the Chinese survey has been conducted, cross-cultural differences might have resonated into differences in exhibited respondent behaviour. In a study performed by Fang et al. (2016), which compared respondent behaviour of individuals from collectivistic cultures (Chinese) with respondent behaviour from individualistic cultures, it was found respondents from collectivistic cultures

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[38] As Chinese respondents reported living area in different forms and Chinese languages, it appeared (too) difficult to structure data with respect to area of living

[40] Although included in the survey, the variable income was not tested for. This was not done since 28.1% answered 'prefer not to say'. As of such a large share the income was unknown, testing representativeness would not give a representative image of the full sample.

reported increased inconsistencies in online surveys, caused by shirking behaviour. Effects of the inconsistencies in respondent behaviour of Chinese respondents are most likely to be noticed in the explanatory factor analyses that have been performed, as reported inconsistencies might have influence relations/correlations observed between variables and approval. Therefore, for unexpected or inconsistent relations observed for the Chinese sample, one should bear in mind performed shirking behaviour might provide an explanation. An example of such is provided by the relation between 'obtain a loan without difficulty' and 'approval' for which a negative relation is observed.

Furthermore, another interesting finding presented by Fang et al. (2016) shows respondents from individualistic cultures are more likely to engage in *impression management*[41]. This would indicate Dutch respondents are more likely to give answers that are socially desirable. Stemming from the criticism and concern present in western countries 'not approving SCSs' is expected to be the socially desirable answer, which would have resulted in suppression of approval rates. Concerning the group of Chinese respondents, Fang et al (2016) also found respondents from collectivistic cultures (Chinese) are less likely to engage in impression management in online surveys than in paper surveys. Although Fang et al. found Chinese respondents are more likely to engage in such behaviour in paper surveys than in online surveys, impression management is still present in online surveys. As for Chinese respondents 'approval of SCSs' would be the socially desirable answer to give, engagement in impression management among Chinese respondents should have promoted rates of approval. Interestingly here, however, is the fact whether Chinese respondents the SCS increases likelihood of engagement in impression management. As the SCS is a social management tool that rewards specific types of 'desired' (online and offline) behaviour and as impression management includes "the attempt to present favourable images of themselves as a means of obtaining social rewards" (American Psychology Association, 2021), the SCS itself might provide increased incentive to engage in such behaviour (in online environments). As a result, as approving of SCS might be perceived as 'desired' behaviour, it is likely impression management has increased propensity to answer in a 'desirable' manner promoting approval rates even more. As the possible increased engagement in impression management caused by the SCS cannot be concluded from this study, future research into this topic is needed.

Limitations with respect to Kostka (2019)

As most of research done for this thesis is based on the article *China's Social Credit System: Explaining High-Levels of Approval* (Kostka, 2019), limitations or differences compared to this study should be recognized. First of all, the differences in the samples should be noted. Whereas Kostka's study is based on a sample of 2209 Chinese respondents, sample size of this study contained 'only' 352 *Chinese* respondents. Due to this larger sample size Kostka's results are more likely to be representative for the full *Chinese* population. Additionally, as indicated for the representativeness with respect to demographics, sample of this study was found to be not representative. Whereas skewedness that might result from this non-representativeness was compensated for by Kostka by weighting the results, due to restraints in the use of/skills with statistics, weighting of results was not done for this thesis. Thence, bias is not compensated for and is most likely present in the presented outcomes of this thesis.

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[41] *Impression management* is defined as "behaviors intended to control how others perceive oneself, especially by guiding them to attribute desirable traits to oneself. Typically, it is assumed that people attempt to present favorable images of themselves as a means of obtaining social rewards and enhancing self-esteem." (American Psychology Association, 2021)

Following logic from Kostka's results, the skewedness in our (Chinese) sample concerning demographics should have the following effects:

- Overrepresentation of male respondents should give higher rates of approval
- Overrepresentation of more highly educated respondents should give higher rates of approval
- Overrepresentation of younger respondents should give lower rates of approval

As for all concerned variables (gender, education, and age) no significant correlation was found, no presence or direction of bias is shown by outcome of study. Nevertheless, one should be aware these biases might be present.

If accordingly, the representativeness of trust-levels for the Chinese sample is translated into bias according correlating variables found by Kostka, the following effect should be observed;

- Lower trust in the government should result in lower rates of approval

As trust in the government was indeed found to be a significant explanatory factor of approval, it is highly likely this bias is truly present. As a result, approval rates of Chinese respondents that are reported in this thesis are likely lower than approval of overall Chinese population.

Moreover, reflecting on the outcome of this thesis, many of Kostka's results could not be retained. If it were assumed Kostka's results were indeed true, bias present in this research, or the smaller sample size, are possible explanations that could be thought of that give a reason for deviation from those results. Another limitation, as especially 'predictors' identified by Kostka couldn't be retained, is the different statistical method for explanatory factor analysis that was used. Whereas Kostka made use of an ordinal logistic regression, in this study, due to limitations in statistical knowledge (available), a linear regression was needed to perform instead. As the dependent variable (approval of SCSs) concerned a Likert-scale variable, performing a linear regression has come with the assumption that steps between answer possibilities[42] are equal. Although using a linear regression might not have influenced results, as argued by Kizach (2014), confusion still exists whether the assumption of 'equal steps' affects the outcome (Mirahmadizadeh et al., 2018). As no ambiguous conclusion can be drawn on whether results are affected by analysis using a linear regression, results should be interpreted with awareness of this fact.

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[42] Given answer possibilities: *strongly disapprove (1) – somewhat disapprove (2) – neither approve nor disapprove (3) – somewhat approve (4) – strongly approve (5)*

Chapter 7: Reflection

In this chapter the relevancy of this study and the thesis process will be reflected on. First a reflection will be given on the relevancy of this thesis to the 'Management of Technology' (MOT) master programme. Accordingly, the societal relevance of the study is discussed and lastly, the thesis process will be reflected on.

Relevance of the Study to the 'Management of Technology' (MOT) Master Programme

Although the MOT programme at TU Delft focuses on "exploring and understanding of technology as a *corporate* resource - a resource that allows a firm to keep many different balls in the air. It shows how firms can use technology to design and develop products and services that maximise customer satisfaction on the one hand, while maximising corporate productivity, profitability and competitiveness on the other." (*MSc Management of Technology*, 2021), this research has mainly gone into the exploring and understanding of a technology as *governmental* resource. Consequently, the definition of technology as a resource should be understood differently. Whereas technology as a *corporate* resource tries to maximise *customer satisfaction* while maximising *corporate productivity, profitability* and *competitiveness*, in this thesis technology should be understood from a governmental point of view. Accordingly, for this thesis technology as a *governmental* resource can be understood in terms of *satisfaction of citizens/society* is to be maximised[43], while maximizing *social stability*, *economic growth* and *competitiveness of industries*. By going into approval of Chinese citizens (satisfaction of Chinese citizens), this study tries to get a grasp on whether technologies used for the SCS[44] are/should be used as a governmental resource.

From this perspective, looking at the outcome if this study it can be determined whether SCSs can be used as a governmental resource by the Chinese and Dutch government. Accordingly, the Chinese government is provided with the insight SCSs are highly approved as SCSs are perceived to increase accountability taken for actions and quality-of-life improving. From these findings, as strong approval among Chinese respondents is present, it can be concluded SCSs will likely increase social stability. As the goals of SCSs/'the SCS' are/is to increase economic growth and the competitiveness of Chinese industries, in the case of the Chinese government, SCSs can be seen as governmental resource. Consequently, the Chinese government would be recommended to proceed with implementation of the SCS. Furthermore, if the findings with respect to Dutch respondents are considered, the Dutch government is provided with the insight SCSs are not highly approved, nor highly disapproved. However, mostly as a relatively large group of 'strongly disapproving' respondents is present, social instability might be at stake when SCSs are implemented. Consequently, in case of the Dutch government SCSs cannot be seen as a corporate resource, for which recommendation would be not to use/implement SCSs.

In addition to the governmental perspective, this study can also be understood from a more corporate point of view. With increasing demand by citizens, societies and governments of pension funds, banks, and other asset managers to justify investments on basis Environmental, Societal, and Governance (ESG) requirements, one could question whether investment in companies involved (e.g., Alibaba, Tencent, Baidu etc.), would meet those ESG requirements. Mainly as a lot of criticism has been present on the SCS, going into human rights (privacy, autonomy and liberty), whether investing in companies involved, possibly contributing to those infringements, meets (ESG) requirements, can be questioned. Although it can still be debated whether no human rights are violated, mostly as disproportional sanction

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[43] What type of ethical/philosophical reasoning 'maximizing of satisfaction' should follow is open to debate
[44] What technologies are used is discussed in *section 3.4*

and suppression of minorities cannot be excluded from this study, and other limitations of this study should be taken into account as well, this study provides a comprehension from which it can be argued investing in companies involved can be justified. By showing high approval is present among Chinese citizens, the SCS seems to be perceived as beneficial to Chinese citizens/society. Therefore, as the majority perceives the SCS as beneficial, one could argue from a Utilitarian point of view that utility is maximized, by which investing in companies involved in the SCS can be justified. Nevertheless, I think this point of view justifying investment is too short-sighted. On one hand, because it can still be debated whether no human rights are violated, as disproportional sanction and suppression of minorities cannot be excluded. On the other hand, because the massive data-collection used by the SCS might have (future) implications that are not known yet, which, if they were known already, citizens would not consent to. Examples of implications that could be thought of are the possible (future) use for predictive policing or other social management uses that are enabled by the massive collection and analysis of data that might constrain an individual's liberty or autonomy.

Societal Relevance of this Study

This research going into opinion and approval of China's SCSs was conducted as a lot of criticism on the SCS is present. Mostly as it is perceived as a mass-surveillance tool, concerns with regard to privacy, autonomy, and liberty of individuals are present. Given the limited information that is (readily) available on how the system works and the authoritarian environment in which the system is implemented, presence of those concerns seems grounded. Nevertheless, whereas a more wary position on influence on society and individuals is taken by criticizing non-Chinese sources, an opposite line of argumentation advocating the SCS should be beneficial to Chinese society and its citizens is used by the Chinese government. To provide insight into how the SCS is perceived by individuals who concerns (present among non-Chinese sources), as well as generated benefits (as argued for by the Chinese government), should apply to, this study goes into approval of SCSs among Chinese citizens. As a result, taking into account the limitations that are discussed, this study seems to substantiate the advocacy of the SCS as beneficial to Chinese citizens and society, as the outcome shows high approval of the SCS is present among Chinese respondents as it is perceived to improve quality-of-life and increase accountability taken for actions.

Reflection on Thesis Process

During the Social Values course included in MOT year 1 multiple different perspectives of how technologies and their externalities/effects can be looked at, were discussed. As I this course induced my severe interest and as no additional courses in ethics unfortunately were not included in the MOT programme, I decided to devote my master thesis to a topic in this field. Furthermore, as I have been intrinsically interested in China, it's culture, politics, and industries since I had visited the country in 2019, reading about the SCS fascinated me. Consequently, mostly as a lot of criticism on the SCS is present, I thought it would be interesting to do research from a perspective going into the benefits the system might yield to Chinese individuals and/or society.

After the subject of my research had been decided on, I was linked to Rockwell Clancy (Rocky), who became my supervisor/advisor during the main part of the process. Although it was known he was not qualified to be part of my graduation committee officially, it was decided it was best to make Rocky supervise my project 'non-officially' due to his knowledge on China, Chinese culture, and the SCS. Thereby, it was agreed on that later during the process, when the official thesis process would be started with, 'official' supervisors would be added and that Rocky would remain as the 'non-official' supervisor in lead of the project. Unfortunately, as Rocky left TU Delft, roles of supervisors slightly changed, which caused

some confusion in responsibilities and whose feedback/guidelines should be followed. Nevertheless, after several meetings with Servaas and Neelke, most ambiguity was removed. Although the struggles, mostly coming from input/feedback from different angles, caused some difficulties, I hope to have found a way in which this thesis meets the expectations of Rocky, as well as the expectations of my official supervisors, Neelke Doorn and Servaas Storm.

Furthermore, I think especially until data collection (conducting the survey) was started, not many difficulties were faced. The task I expected to become one of the main difficulties, finding someone willing to translate the survey into Chinese, was taken on by Rocky, who found Shuhong Li willing to translate the survey. Data collection itself, however, appeared to be quite difficult. Although expected, especially collecting enough Chinese respondents appeared to be hard and caused some delay. Yet, by reaching out to lots of individuals with social/professional networks in China and, again, with the support of Rocky, eventually within a reasonable timeframe of 6 weeks over 500 respondents were collected. Unfortunately, due to the delay caused by data collection, not enough progress was made with data analysis to have a useful mid-term meeting due to which the meeting needed to be rescheduled. During the period that followed, in which data analysis was proceeded, a large complication occurred. As I found myself struggling with analysing the outcome of an 'ordinal logit regression' for a too long period of time and extra guidance in this field could not be found, it was decided in agreement with the graduation committee to perform a 'linear regression' instead. As this struggle caused quite some delay the green light meeting and defense of my thesis needed to be postponed. Although it disappointed me that the project didn't proceed as expected, I was glad I was given more time to be able to submit a thesis I hopefully can/may be proud of.

At last, due to Covid-19 restrictions the whole thesis process unfortunately has been a remote process. Except from two physical meetings with Rocky, all contact and meetings, including the defense has been/will be via mail or videocalls. Although not ideal, especially as – I feel – transfer of knowledge is improved when matters are discussed in a physical manner, I think the restrictions didn't affect the end product too much.

CHAPTER 8: Conclusion

Whereas most existing literature on the Social Credit System (SCS) focused on its 'surveillance' characteristics as a tool to increase 'control by the state' and other topics related to social management, this study aimed to provide knowledge on whether the system is actually perceived like such by individuals subject to the system (Chinese citizens). As it was laid out the SCS is implemented to overcome certain issues China has faced, is facing today and might be facing in the future. Therefore, as it should be a solution to severe problems present, curiosity arose whether subjects perceive the system as beneficial and whether they approve the system. To study these topics an online survey was conducted among Chinese (research group), as well as Dutch respondents (control group) which was based on an article written by Kostka (2019). Mainly, the survey conducted covered topics going into trust, perceived functioning of the SCS and approval of social credit systems (SCSs). In addition to the main survey, Chinese respondents could opt-in to fill in a supplementary survey going into experience with SCSs. As experience with SCSs is not relevant to Dutch respondents at the moment of writing, this option was available to Dutch respondents.

Resulting from this study, it was found Chinese citizens show high levels of approval, by which Kostka's main finding of strong levels of approval was retained and the claim of 'high' levels of approval was legitimized. Although it was expected from previous research that older, higher income, male, more highly educated individuals could be associated with higher approval, none of those correlations has proven to be significant. When functioning of the system and the benefits it might yield is considered, it is found the SCSs should be run by the government and that respondents that perceive accountability taken for actions and quality-of-life to increase by implementation of SCSs tend to show higher levels of approval. Therefore, outcome of this study substantiates Kostka's findings that Chinese respondents think SCSs should be run by the government and perceive the SCS 'through a frame of benefit generation' (Kostka, 2019).

Interestingly, an almost negligible share (3%) of Chinese respondents reporting disapproval[45] was found. Although comprising a slightly larger share than Kostka's study, respondents disapproving the system remain scarce. Although it was tried to secure anonymity of respondents, with the Chinese government being known for 'scraping the internet', unfortunately no such thing can be ensured. Therefore, if anonymity was not assumed by respondents, fear of sanctions by the government or in the form of a decreasing Personal Credit Score, might have been present. Accordingly, this might have resulted in a suppressed share of respondents showing disapproval. Nevertheless, as the large majority remains 'approving', even when suppression of 'disapproving' respondents is accounted for, the perception of SCS as a benefit generating tool seems more likely. Nevertheless, with 'just' a majority approving the system, concerns with respect to suppression of minorities and disproportional sanction, which will likely only be faced by a small group, concerns with regard to these issues are not taken away.

Moreover, with regard to Chinese respondents increased perceived fairness of scoring mechanisms and one's perceived score compared to friends and family were found to be associated with higher levels of approval. Although perceived fairness was found to be associated with higher approval, concern whether the same rules/standard would apply to people in powerful positions was not found to be correlated, but remarkably indicated a negative relationship with approval, which seems counterintuitive. Yet, it could potentially be

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[45] Disapproving is defined as respondents having report 'somewhat disapprove' or 'strongly disapprove'

explained by the fact respondents might have concluded a universal set of rules/laws is not wishful due to implications it might bring when certain functions (president or other highly placed functions) are conducted. As a result, concern whether the same/rules standard apply to people in powerful positions might have had less or no influence on approval.

Furthermore, if a comparison between approval of both respondent groups is made, Chinese respondents show higher approval. The largest part of difference in means present can be attributed to a much larger group of Dutch respondents disapproving SCSs. Although explaining differences between respondent groups was not the main goal of this study, two explanations to this finding are given. First, a more disapproving view on SCSs of Dutch respondents could be advanced by Dutch media. At the same time a more approving view of Chinese respondents could be contributed to by propagating news that is spread by Chinese state media. Second, as benefits experienced are explanatory factors for both respondent groups, Chinese perceive SCSs to be more benefit-generating, leading to higher approval rates.

Limitations to be noted deal with representativeness of the sample and cross-cultural differences. With regard to representativeness, two effects are noted. First, trust in the government for the Chinese sample has led to lower approval among Chinese respondents compared to the full Chinese population and higher trust in the government for the Dutch sample has led to higher observed approval compared to the Dutch population. Second, and expected to have the most significant effect, stems from the fact the survey was conducted online and in a younger, 'more privileged' (more highly educated, better prospects and/or higher income) environment resulting in the exclusion of a large part of the rural population. As rural individuals are expected to show lower rates of approval due to less experienced benefits and less knowledge on the system, the underrepresentation of rural individuals is expected to have promoted observed approval rates.

Furthermore, cross-cultural differences might have affected the outcome of this study. Foremost, cultural differences between Dutch and Chinese respondents might have led to differences in interpretation of several sensitive terms used in the survey, such as 'trustworthy', 'integrity', and 'virtuous' might have affected results. Additionally, it was found Chinese respondents, although less than in paper surveys, do engage in impression management in online surveys, which might have affected results. Mostly as the SCS itself increases online surveillance Chinese respondents seem more likely to have engaged in impression management. Therefore, whether the SCS leads to increasing engagement in impression management could be of severe interest as it might have led to higher reported approval, future research on this topic is needed.

A last limitation that should be noted is that despite the dependent variable being a continuous variable (Likert-scale), a linear regression was used. As a consequence, 'equal steps' between answer possibilities of the dependent variable needed to be assumed. As from existing literature confusion still exists, whether this assumption affects the outcome and thence, whether results are affected by this assumption, is not known.

Consequently, when the outcome of this study is interpreted, the Chinese government is provided with the insight SCSs are highly approved as SCSs are perceived to increase accountability taken for actions and quality-of-life improving. Therefore, SCSs will likely increase social stability the Chinese government would be recommended to proceed with implementation of the 'full' SCS. Furthermore, if the findings with respect to Dutch respondents are considered, the Dutch government is provided with the insight SCSs are not highly approved, nor highly disapproved. However, as a relatively large group of 'strongly

disapproving' respondents is present, social stability might be at stake for which recommendation would be not to use/implement SCSs.

In addition to a governmental interpretation, this study can also be understood from a more corporate point of view. With increasing demand by citizens, societies and governments of pension funds, banks, and other asset managers to justify investments on basis Environmental, Societal, and Governance (ESG) requirements, one could question whether investment in companies involved in the SCS (e.g., Alibaba, Tencent, Baidu etc.), would meet those ESG requirements. Mainly as a lot of criticism has been present on the SCS, going into human rights (privacy, autonomy and liberty), whether investing in companies involved, possibly contributing to those infringements, meets (ESG) requirements, can be questioned. Accordingly, as this study provides a comprehension from which it can be argued investing in companies involved in the SCS can be justified. By showing high approval is present among Chinese citizens, the SCS seems to be perceived as beneficial to Chinese citizens/society. Therefore, as the majority perceives the SCS as beneficial, one could argue from a Utilitarian point of view that utility is maximized, by which investing in companies involved can be justified.

At last, when implications regarding proceeding with implementation and the justification of investment are taken into account two things should be noted. At first, one should be aware it can still be debated whether no human rights are violated, as by approval of a majority suppression of minorities and disproportional sanction cannot be excluded. Second, because massive data-collection is used by the SCS, this might have (future) implications that are not known yet, which, if they were known already, citizens would not consent to. Examples of implications that could be thought of are the possible (future) use for predictive policing or other social management uses that are enabled by the massive collection and analysis of data that might constrain an individual's liberty or autonomy.

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APPENDIX

Appendix I: Prior Research and Methodology used by Kostka (*China's Social Credit System: Explaining High Levels of Approval*)

Prior research

Since no prior knowledge was available on the views, opinion and experience with government and commercial SCS pilots, hypotheses of Kostka's article were derived from prior research in different, but assumingly related fields. As it was assumed privacy concern, political attitude and trust in individuals, political institutions and commercial enterprises would affect the approval of SCSs, studies going into these fields formed the basis of hypotheses formulation.

In consequence, a study from Wang and Yu (2015) was used, which showed privacy implications are shaped by socio demographic factors. As they found privacy concern is of more concern to somewhat older and more highly educated citizens, this resulted in the hypothesis of somewhat older (30-50 years old), more highly educated individuals showing lower approval of SCSs. Accordingly, a study from Pan and Xu (2018) was used that found younger, wealthier, more highly-educated and urban citizens, living in more developed provinces have stronger liberal views and a stronger preference towards democratic institutions. Thereupon, it was expected these more liberal and democratic views can be associated with a more sceptical view on SCSs.

Likewise, with concern to trust, Wang and Yu (2015) found that who runs the SCS and how they operate affects judgment. Equally, it was expected differentiating trust in institutions would affect views on who should run a SCS. From studies performed by Garnaud and Song (2004), Li (2004), Tang (2005), Wang (2005), it was found that Chinese show 'hierarchical trust'[46] and lower trust in private enterprises. As a result, it was expected individuals would want the central government to run a SCS instead of commercial enterprises or local governments.

Methodology

Following from these findings Kostka constructed the conceptual framework (*figure 1*) of factors (*independent variables*) potentially influencing 'approval of SCSs' (*dependent variable*). These factors were divided into three categories: socio-demographic factors, characteristics of the SCS, and functioning of the SCS.

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[46] Hierarchical trust indicates increasing trust in higher placed government institutions (trust in central government is higher than trust in local government)
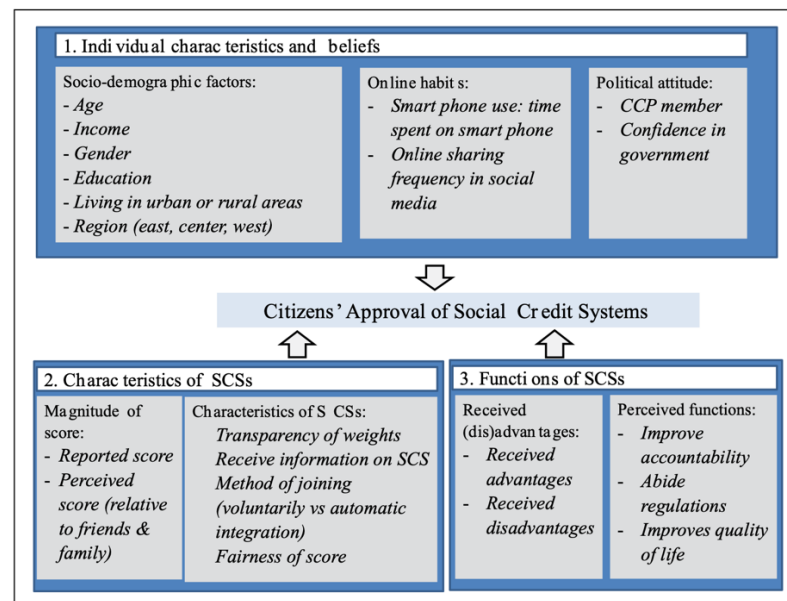
Figure 1: Conceptual framework of variables possibly influencing approval of SCSs (Kostka, 2019)

Kostka formulated hypotheses for every dependent variable based on the constructed conceptual frameworks. The hypotheses tested by Kostka that are most relevant to this thesis are given in *box 1*.

Box 1: Overview of accepted hypotheses of Kostka (2019) that are relevant to this thesis. In short, from the hypotheses presented in box 1, H1, H2, H4 and H19 are rejected and H3, H5 and H10, H12, H14, H17, H18 and H21 were accepted.

- H1: SCS approval is higher among younger citizens.
- H2: SCS approval is higher among citizens with lower incomes.
- H3: SCS approval is higher among male citizens.
- H4: SCS approval is higher among less educated citizens.
- H5: SCS approval is higher among citizens living in urban areas.
- H10: SCS approval increases among citizens who have high confidence in the government.
- H12: SCS approval is higher among citizens who believe they have a higher social credit score than their friends and family.
- H14: SCS Approval is higher among citizens who received information on the system.
- H17: SCS approval is higher among citizens who receive actual advantages from using it.
- H18: SCS approval is higher among citizens who receive actual disadvantages from using it.
- H19: SCS approval is higher among citizens who believe it is a useful tool to make individuals and companies more honest and accountable for their actions.
- H21: SCS approval is higher among citizens who believe it improves the quality of life.

Accordingly, for data collection Kostka made use of an online survey, which was conducted between February and April 2018. Distribution was done by a survey company and made use of desktop and mobile applications leading to a reported 2209 valid responses. Topics included in the questionnaire covered potentially influencing factors on approval (*figure 1*), among which: demographics, personal relations, online privacy, political attitudes, and topics with regard to SCSs (perceived functioning, participation, received scores, received benefits and sanctions). Types of questions that were used are rating scale questions, multiple choice and open-ended questions.

Appendix II: Variables included in the Surveys

IIa. Variables Included in Main Survey

Table 3: Build-up of main survey in terms of variables, questions and answer possibilities. Variable names indicated with (K) are variables copied from Kostka's research, variables indicated with (WVS) are questions copied from the World Value Survey.

Variable Name	Question [Answer Possibilities]
Trust in individuals	
Overall trust	Generally speaking, would you say most people can be trusted or that you need to be very careful in dealing with people? [need to be very careful – most people can be trusted]
Trust in family (F)	I'd like to ask you how much you trust people from various groups. Could you tell me for each whether you trust people from this group completely, somewhat, not very much or not at all? (Q58 WVS) [none at all – not very much – somewhat – completely]
Trust in acquaintances (A)	[none at all – not very much – somewhat – completely]
Trust in individuals after meeting for the first time (P)	[none at all – not very much – somewhat – completely]
Trust in the government, Big-Tech companies, technology	
Trust in the government	How much confidence do you have in how the government is running the country? (Q64 WVS / K) [a great deal of confidence – quite a lot of confidence – not very much confidence – none at all]
Trust in Big-Tech Companies	How is your view on big-tech companies, do you see them as trustworthy (taking accountability for their actions, abiding the law, acting in public interest, following safety protocols, meeting quality requirements)? Place your views on a 10-point scale where "1" means "companies act in a manner that is <u>not</u> trustworthy at all and/or don't take accountability for their actions" and "10" means "."companies act in a trustworthy manner and/or take accountability for their actions". If your views are somewhat mixed, choose the appropriate number in between. (Q112 WVS *adjusted*) [1 - Companies are not trustworthy and/or don't take accountability for their actions – 10 - Companies are trustworthy and take accountability for their actions]
Trust in technology	Considering whether you think if science and technology are making our lives healthier, easier, and more comfortable, would you say the world is better off, or worse off, because of science and technology? Please tell me which comes closest to your view on this scale: 1 means that "the world is a lot worse off," and 10 means that "the world is a lot better off."(WVS Q158 & Q163) [1- a lot worse off – 10 - a lot better off]
Privacy concern related to data-sharing	

Trust in government with data	To what degree would you trust the government with your personal data: (K *adjusted*) [a great deal – quite a lot – not very much – none at all]
Trust in Big-Tech with data	To what degree would you trust Big-Tech companies with your personal data: (K *adjusted*) [a great deal – quite a lot – not very much – none at all]
Concern data-sharing with government	I am not concerned about sharing my data since all data is owned by the government already. [totally disagree – disagree – neither agree nor disagree – agree – totally agree]
Concern data-sharing with Big-Tech	I am not concerned about sharing my data since all data is owned by big-tech companies already [totally disagree – disagree – neither agree nor disagree – agree – totally agree]
Captcha question	
Captcha question	How many times have you been on the moon? [never – once – several times]
→ *Explanation statement of SCS was shown and asked to read thoroughly*	
Functioning of SCSs	
Who should manage a SCS	In your opinion who should manage a nationwide credit system? (K) (*select all that apply)* [the central government – Big-tech companies]
Concern if same rules/standards apply to people in powerful positions	I am concerned whether the same rules/standards will apply to people in powerful positions (CEO's/executive officers/politicians/ministers/the president) subject to a nationwide credit system as to ordinary citizens subject to that same nationwide credit system. [totally disagree – disagree – neither agree nor disagree – agree – totally agree]
Accountability for actions	I believe a nationwide credit system will make individuals more accountable for their actions? [totally disagree – disagree – neither agree nor disagree – agree – totally agree]
SCS as QOL improving	I believe a nationwide credit system will improve quality-of-life? [totally disagree – disagree – neither agree nor disagree – agree – totally agree]
Approval of SCSs	
Approval of SCSs	How much would you approve a nationwide credit system? (K) [strongly disapprove – somewhat disapprove – neither approve nor disapprove – somewhat approve – strongly approve]
Demographics	
Gender	How do you identify yourself? [male – female – other]
Age	What is your age? [18-25 years – 25-35 years – 35-50 years – 50-65 years – 65+ years]
Education	What is the highest educational level that you have attained? (*select highest degree you have attained)* [ISCED 1 – 8]
Income	
Area	

IIb. Variables Included in Supplementary Survey

Table 2: Build-up of main survey in terms of variables, questions and answer possibilities. Variable names indicated with (K) are variables copied from Kostka's research, variables indicated with (WVS) are questions copied from the World Value Survey.

Variable Name	Question [Answer Possibilities]
Participation in SCSs	
Familiarity with SCS	Are you familiar with the SCS? [yes/no]
SCS partipated in	Have you participated in any of the below mentioned Credit Rating Systems? (*select all that apply)* (K)
Scoring in SCSs	
Score perception compared to F&F	How do you perceive your score compared to friends/family? (K) [much lower – lower – approximately the same – higher – much higher]
Informed about calculation of scoring	I am informed well enough about how the score is calculated. [totally disagree – disagree – neither agree nor disagree – agree – totally agree]
Fairness of scoring	I perceive my score to be calculated fairly. (K) [totally disagree – disagree – neither agree nor disagree – agree – totally agree]
Control over score	I feel I have control over my score and feel I am able to increase my score when wanted. [totally disagree – disagree – neither agree nor disagree – agree – totally agree]
Experience with SCSs	
Experienced benefits	I have experienced the following benefits from participating in the earlier mentioned credit system (K) *(select all that apply)*: [obtaining credit without difficulties - lower interest on loan - higher interest on saving - received a fast-track visa - used fast-tracked check-ins for hotels or flights - other travel related benefits - benefits in using sharing economy services (Ex.: Mobike, Didi, Airparking, Airbnb) - experienced a positive impact on my online dating - job application benefits - other job-related benefits - being redlisted - friends/family being redlisted]
Experienced downsides	I have experienced the following downsides from participating in the earlier mentioned credit system: - More difficulties obtaining credit - Higher interest on loans - Lower interest on savings - Difficulties in obtaining visa - Other travel related difficulties - Negative effects on the use of or ability to use sharing economy services - Negative impact on online dating - Negative effects on job applications - Other negative effects that are job related - Being blacklisted - Friends/Family being blacklisted
Travel behaviour	

Use of sharing economies	How often do you make use of sharing economy services? [multiple times a day – once a day – a few times per week – a few times per month – less often – never]
Use of high-speed railway travel	How often do you make use high-speed railway travel? [multiple times a day – once a day – a few times per week – a few times per month – less often – never]
Use of airplane travel	How frequently do you travel by plane? [multiple times a day – once a day – a few times per week – a few times per month – less often – never]

Appendix III: Surveys

IIIa. Survey (English Version)

English Survey: Questions indicated with (K) are variables copied from Kostka's research, questions indicated with (WVS) are questions copied from the World Value Survey. Questions indicated with © are questions that are only applicable to Chinese respondents

Informed consent

*You are being invited to participate in a research study titled **Approval of Social Credit Rating**. This study is being done by **Bart-Jente Roelofs** from the TU Delft.*

*The purpose of this research study is **to test and compare views and thoughts of different respondent groups on Social Credit Rating**, and will take you approximately **10-15** minutes to complete. **We do not ask for any personal information in the questionnaire. After being used for this study, the anonymous data will be made publicly accessible to enable others to study the data.***

Your participation in this study is entirely voluntary and you can withdraw at any time. You are free to omit any question.

*We believe there are no known risks associated with this research study; however, as with any online related activity the risk of a breach is always possible. To the best of our ability your answers in this study will remain confidential. We will minimize any risks by **not collecting any personal identifiable information. This means that all data is anonymized and that all types of potentially personal identifiable information are not collected with or without the intention   to.***

Contact:
Bart-Jente Roelofs
B.Roelofs@student.tudelft.nl

Demographics

1. How do you identify yourself?
   - Male
   - Female
   - Other
2. What is your age? (drop-down menu)
   - 18-25 years
   - 25-35 years
   - 35-50 years
   - 50-65 years
   - 65+ years
3. What is the highest educational level that you have attained? (*select highest degree you have attained)*
   - Early childhood education / no education (ISCED 0)

- Primary education (ISCED 1)
- Lower secondary education (ISCED 2)
- Upper secondary education (ISCED 3)
- Post-secondary education (ISCED 4)
- Short-cycle tertiary education (ISCED 5)
- Bachelor or equivalent (ISCED 6)
- Master or equivalent (ISCED 7)
- Doctoral or equivalent (ISCED 8)

4. On this card is an income scale on which 1 indicates the lowest income group and 10 the highest income group in your country. We would like to know in what group your household is. Please, specify the appropriate number, counting all wages, salaries, pensions and other incomes that come in.
    - *1-10 scale*
5. Please fill in you ZIP code/Province & City: ……

Trust in individuals

6. Generally speaking, would you say most people can be trusted or that you need to be very careful in dealing with people? (Q57 WVS)
    - Most people can be trusted
    - Need to be very careful
7. I'd like to ask you how much you trust people from various groups. Could you tell me for each whether you trust people from this group completely, somewhat, not very much or not at all? (Read out and code one answer for each): (Q58 WVS)
    - Your family
        - *Trust completely*
        - *Trust somewhat*
        - *Do not trust very much*
        - *Do not trust at all*

8.
    - People you know personally
        - *Trust completely*
        - *Trust somewhat*
        - *Do not trust very much*
        - *Do not trust at all*

9.
    - People you meet for the first time
        - *Trust completely*
        - *Trust somewhat*
        - *Do not trust very much*
        - *Do not trust at all*

Trust in institutions

10. How much confidence do you have in how the government is running the country: is it a great deal of confidence, quite a lot of confidence, not very much confidence or none at all? (Q64 WVS / K)
    - *A great deal of confidence*
    - *Quite a lot of confidence*
    - *Not very much confidence*
    - *None at all*

Privacy concern

11. To what degree would you trust the following with your personal data: (K *adjusted*)
    - The government
        - *A great deal*
        - *Quite a lot*
        - *Not very much*
        - *None at all*

12. To what degree would you trust the following with your personal data: (K *adjusted*)
    - Big-tech companies
        - *A great deal*
        - *Quite a lot*
        - *Not very much*
        - *None at all*

13. I am not concerned about sharing my data since all data is owned by the government already
    - *Likert-scale*

14. I am not concerned about sharing my data since all data is owned by big-tech companies already
    - *Likert-scale*

Trust in technology

15. Considering whether you think if science and technology are making our lives healthier, easier, and more comfortable, would you say the world is better off, or worse off, because of science and technology? Please tell me which comes closest to your view on this scale: 1 means that "the world is a lot worse off," and 10 means that "the world is a lot better off."(Code one number) (WVS Q158 & Q163)
    - 1- A lot worse off
    - 10 - A lot better off

Trustworthiness of companies

16. How is your view on big-tech companies, do you see them as trustworthy (taking accountability for their actions, abiding the law, acting in public interest, following safety protocols, meeting quality requirements)? Place your views on a 10-point scale where "1" means "companies act in a manner that is <u>not</u> trustworthy at all and/or don't take accountability for their actions" and "10" means "."companies act in a

trustworthy manner and/or take accountability for their actions". If your views are somewhat mixed, choose the appropriate number in between. (Q112 WVS *adjusted*)

- 1 - Companies are not trustworthy and/or don't take accountability for their actions
- 10 - Companies are trustworthy and take accountability for their actions

Explanation statement on Social Credit Rating

*"This survey is about '**Social Credit Rating**':*

Social Credit Rating is the accrediting of a score to a person on basis of multiple types of behaviour that are or have been performed. The goal often ascribed to use of such a "social score" is to create a more "trustworthy", "integer" and "virtuous" society by rewarding more "integer", "trustworthy" and "virtuous" behaviour (ex. involvement in voluntary activities) and/or by penalising less "integer", "trustworthy" and "virtuous" behaviour (ex. not paying back loans/jaywalking)."

A nationwide Social Credit System

17. In your opinion who should manage a nationwide credit system? (K) (*select all that apply*)
    - The central government
    - Big-tech companies
18. I am concerned whether the same rules/standards will apply to people in powerful positions (CEO's/executive officers/politicians/ministers/the president) subject to a nationwide credit system as to ordinary citizens subject to that same nationwide credit system.
    - *Likert-scale*
19. I believe a nationwide credit system will make individuals more accountable for their actions?
    - *Likert-scale*
20. I believe a nationwide credit system will improve quality-of-life?
    - *Likert-scale*
21. How much would you approve a nationwide credit system? (K)
    - Strongly disapprove (非常反对)
    - Somewhat disapprove (有点反对)
    - Neither approve nor disapprove (一般, 既不赞同，也不反对)
    - Somewhat approve (有点赞同)
    - Strongly approve (非常赞同)

Supplementary Survey Chinese Respondents Only

SCS participation

22. © I would like to ask you whether you would be willing to fill in an additional survey. In this additional survey 10 more questions will be asked. Please choose 'continue' if you are willing to do so:
    - Continue
    - Do not continue
23. © Have you heard of the Social Credit Rating System?
    - Yes
    - No
24. © Have you participated in any of the below mentioned Credit Rating Systems? (*select all that apply)* (K)
    - Sesame Credit
    - Tencent Credit
    - Government pilot, namely: ….
    - Other Commercial, namely: …
    - Other: …..
    - I don't take part in any social credit system (*If this answer is given survey stops*)

Scoring

25. © How do you perceive your score compared to friends/family? (K)
    - Much higher
    - Higher
    - Approximately the same
    - Lower
    - Much lower
    - I don't know
26. © I am informed well enough about how the score is calculated
    - *Likert-scale*
27. © I perceive my score to be calculated fairly? (K)
    - *Likert-scale*
28. © I feel I have control over my score and feel I am able to increase my score when wanted
    - *Likert-scale*

Experience/perception from participating in the SCS

29. © I have experienced the following benefits from participating in the earlier mentioned credit system (K) (select all that apply):
    - Obtaining credit without difficulties
    - Lower interest on loan
    - Higher interest on saving
    - Received a fast-track visa
    - Used fast-tracked check-ins for hotels or flights
    - Other travel related benefits
    - Benefits in using sharing economy services (Ex.: Mobike, Didi, Airparking, Airbnb etc.)
    - Experienced a positive impact on my online dating
    - Job application benefits
    - Other job-related benefits

- Being redlisted
- Friends/Family being redlisted

30. © I have experienced the following downsides from participating in the earlier mentioned credit system (K)(select all that apply):
    - More difficulties obtaining credit
    - Higher interest on loans
    - Lower interest on savings
    - Difficulties in obtaining visa
    - Other travel related difficulties
    - Negative effects on the use of or ability to use sharing economy services
    - Negative impact on online dating
    - Negative effects on job applications
    - Other negative effects that are job related
    - Being blacklisted
    - Friends/Family being blacklisted

Online / Sharing Economies / Travelling

31. © How often do you make use of sharing economy services?
    - Multiple times a day
    - Once a day
    - A few times per week
    - A few times per month
    - Less often
    - Never

32. © How frequently do you make use of high-speed railway travel?
    - Once a day
    - A few times per week
    - A few times per month
    - Less often
    - Never

33. © How frequently do you travel by plane?
    - Once a day
    - A few times per week
    - A few times per month
    - Less often
    - Never

Social Credit (Chinese)

Enquêteflow

Standard: Intro Survey (1 Vraag) **Standard: Nationality Test (1 Vraag)**
BlockRandomizer: 1 -
Standard: Questions Dutch version (9 Vragen)
Standard: Explanation Social Credit (1 Vraag) **Standard: Social Credit System (5 Vragen)** **Block: Demographics (5 Vragen)** **Standard: Gift Voucher (1 Vraag)** **Standard: Additional survey check (1 Vraag)** **Standard: Familiarity with SCS check (1 Vraag)** **Standard: Participation in SCS check (1 Vraag)**
BlockRandomizer: 1 -
Standard: Chinese respondents only (9 Vragen)

Pagina-einde ———————————————————————————

Information

重要信息

您好！我是荷兰代尔夫特理工大学的硕士研究生 Bart-Jente Roelofs，**邀请您参加一项关于 "社会信用评价的认可程度 "的论文课题调研。这项研究以调查问卷的形式来了解和比较中国与荷兰的受访者群体对社会信用评价的看法和想法，大约需要您用**10-15分钟**来完成该问卷。这项研究采取自愿参与原则，您可以省略不想回答的问题或随时退出研究。该问卷不会采集可识别个人身份信息的数据，您的所有回答将保持匿名且受到保护，以降低潜在个人身份信息被透露及其他可能的风险。匿名数据在用于该研究之后将被公开，以便其他人对这些数据进行更多研究。**

我们将通过抽奖的方式选出一名受访者，以邮件形式发送通知并赠予200元人民币礼品**券表示感谢。如果您想参与抽奖，请在完成问卷后留下您的邮箱。**

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Nationality 本问卷面向拥有中国国籍的受访者，请问您是否拥有中国国籍？

◯ 是 (1)

◯ 否 (2)

Trust individuals 1 总体而言，您认为在与人交往的时候大多数人都是可以被信任的还是在相处时需要非常小心？

○ **大多数人都可以被信任** (1)

○ **需要非常小心** (2)

Trust individuals 2 我们想了解您对以下不同群体的人的信任程度如何。

	完全不信任 (1)	不太信任 (2)	比较信任 (3)	完全信任 (4)
您的家人 (1)	○	○	○	○
您熟识的人 (2)	○	○	○	○
初次见面的人 (3)	○	○	○	○

Trust institutions
"对机构的信任"

您对政府的治理能力有多大信心？

	完全没有信心 (1)	不太有信心 (2)	比较有信心 (3)	非常有信心 (4)
1 (1)	○	○	○	○

Privacy concern 1&2 您在多大程度上放心把个人数据交给以下机构？

	完全不信任 (1)	不太信任 (2)	比较信任 (3)	非常信任 (4)
政府 (1)	◯	◯	◯	◯
大型科技公司 (2)	◯	◯	◯	◯

Privacy concern 3 您是否同意这种说法"我不担心个人数据的共享，反正大型科技公司已经获得了所有数据"

	强烈反对 (1)	反对 (2)	既不同意也不反对 (3)	同意 (4)	非常同意 (5)
1 (1)	◯	◯	◯	◯	◯

Privacy concern 4 您是否同意这种说法"我不担心个人数据的共享，反正政府已经获得了所有数据"

	强烈反对 (1)	反对 (2)	既不同意也不反对 (3)	同意 (4)	非常同意 (5)
1 (1)	◯	◯	◯	◯	◯

Trust in technology 您或许觉得科学技术为我们的生活带来更多健康和便利。您认为总体而言科学技术让这个世界变得更好还是更糟糕？1表示世界变得糟糕得多，10表示世界变得好得多。(请滑动圆点选择一个数字)

	1	2	3	4	5	6	7	8	9	10
对技术的信任 ()					●					

Trust companies 您如何看待大型科技公司？您认为它们是否值得信赖（对其行为负责
、遵守法律、维护公共利益、遵守安全协议、满足质量要求）？"1 "表示 "公司的行为
完全不值得信任和/或并未对其行为负责"， "10 "表示 "公司的行为值得信任和/或对其
行为负责"。

	1 2 3 4 5 6 6 7 8 9 10
大型科技公司的可信度 ()	

Control Questions 您去过月球吗？

○ 没有 (1)

○ 去过一次 (2)

○ 去过几次 (3)

Social Credit
请仔细阅读以下文字

关于社会信用的解释说明 这项调查是关于 "社会信用评级"。社会信用评级是根据一个
人正在或已经实施的多种类型的行为进行打分。使用这种 "社会性打分"的目标通常是
通过奖励可靠、正直和善良的行为（例如参与志愿活动）， 以及惩罚与之相背的行为
（例如不还贷款/乱穿马路）， 来创造一个更为可靠、正直和有道德的社会。

Social Credit 1 您认为应该**由谁来管理全国性的社会信用体系**？

○ **中央政府** (1)

○ **大型科技公司** (2)

Social Credit 2 您是否同意"**我担心同样的规则/标准是否对有权势的人（首席执行官/执行官员/政治家/部长/总统）以及普通公民同样适用**"？

	非常反对 (1)	有点反对 (2)	一般, 既不赞同，也不反对 (3)	有点赞同 (4)	非常同意 (5)
1 (1)	○	○	○	○	○

Social Credit 3 您是否同意"**全国性的信用体系会使个人对自己的行为更加负责任**"？

	非常反对 (1)	有点反对 (2)	一般, 既不赞同，也不反对 (3)	有点赞同 (4)	非常同意 (5)
1 (1)	○	○	○	○	○

Social Credit 4 您是否同意"**全国性的信用体系能够提高生活质量**"？

	非常反对 (1)	有点反对 (2)	一般, 既不赞同，也不反对 (3)	有点赞同 (4)	非常同意 (5)
1 (1)	○	○	○	○	○

Social Credit 5 您在多大程度上认同全国性的社会信用体系？

	非常反对 (1)	有点反对 (2)	一般, 既不赞同，也不反对 (3)	有点赞同 (4)	非常赞同 (5)
1 (1)	○	○	○	○	○

Gender 您的性别？

○ 男 (1)

○ 女 (2)

○ 其他 (3)

Age 您所处的年龄段?

○ 18-25 岁 (1)

○ 26-35 岁 (2)

○ 36-50 岁 (3)

○ 51-65 岁 (4)

○ 65 岁以上 (5)

Education 您的最高教育程度？

○ 未上过小学或小学肄业 (1)

○ 小学 (2)

○ 初中 (3)

○ 高中（包括职高和中专） (4)

○ 大专 (5)

○ 大学本科 (6)

○ 硕士 (7)

○ 博士 (8)

Income 您当前的年收入大概是？收入包括税后工资，退休金，津贴以及其他收入

○ < 10,000 元 (1)

○ 10,001 元 - 32,189 元 (2)

○ 32,190 元 - 60,000 元 (3)

○ 60,001 元 - 100,000 元 (4)

○ > 100,000 元 (5)

○ 不想透露 (6)

Location 如果您居住在中国，请填写您所在的省份和城市，如果您居住在国外，请填写国家、省份/地区和城市

_____

✱

Email Gift Voucher 感谢您完成问卷。如果您想参与抽奖，请留下您的邮箱。

_____

Einde blok: Gift Voucher

Start van blok: Additional survey check

Additional survey 您是否愿意填写一份带有10个问题的附加问卷？请点击愿意或不愿意。

○ 愿意 (1)

○ 不愿意 (2)

Ga naar: Einde enquête Als Additional survey = 不愿意

Einde blok: Additional survey check

Start van blok: Familiarity with SCS check

Familiarity with SCS 您是否听说过社会信用体系？

○ 是 (1)

○ 否 (2)

Ga naar: Einde enquête Als Familiarity with SCS = 否

Einde blok: Familiarity with SCS check

Start van blok: Participation in SCS check

Participation SCS 您参与过以下信用评价系统吗？（请选择所有适用的选项)

☐ 芝麻信用 (1)

☐ 腾讯信用 (2)

☐ 政府试点项目，例如？ (3)

_____

☐ 其他商业项目，例如？ (4)

_____

☐ 其他，例如？ (5) _____

☐ 我并未参与任何信用评价系统 （如果您选择了此项答案，则无需继续填写问卷 (6)

Einde blok: Participation in SCS check

Start van blok: Chinese respondents only

Scoring 1 您认为您的信用评级分数与家人朋友的相比？

	我不清楚 (1)	低很多 (2)	低一些 (3)	大致相同 (4)	高一些 (5)	高得多 (6)
1 (1)	○	○	○	○	○	○

Scoring 2 您是否同意"我非常清楚信用评级分数如何计算"？

	强烈反对 (1)	反对 (2)	既不同意也不反对 (3)	同意 (4)	非常同意 (5)
1 (1)	○	○	○	○	○

Scoring 3 您是否同意"我觉得我的信用评级分数是公平计算的结果"？

	强烈反对 (1)	反对 (2)	既不同意也不反对 (3)	同意 (4)	非常同意 (5)
1 (1)	○	○	○	○	○

Scoring 4 您是否同意"我觉得我能够掌控自己的分数，并在想提高分数的时候提高它"？

	强烈反对 (1)	反对 (2)	既不同意也不反对 (3)	同意 (4)	非常同意 (5)
1 (1)	○	○	○	○	○

Experience＋您享受过以下由参与社会信用体系带来的便利吗？（多选）

☐ 毫无困难地获得贷款 (1)

☐ 较低的贷款利率 (12)

☐ 较高的存款利率 (2)

☐ 快速获得签证 (3)

☐ 使用快速通道办理登机手续或酒店入住手续 (4)

☐ 其他旅行相关的便利 (5)

☐ 共享经济（如摩拜单车，嘀嘀打车等）带来的便利 (6)

☐ 对线上约会的积极影响 (7)

☐ 工作申请方面的便利 (8)

☐ 其他工作相关的便利 (9)

☐ 获得表彰 (10)

☐ 家人朋友获得表彰 (11)

Experience - 您经历过以下由参与社会信用体系而导致的不便吗？（多选）

☐ 获得贷款的难度更大 (1)

☐ 贷款利率较高 (2)

☐ 存款利率较低 (3)

☐ 较难获得签证 (4)

☐ 其他旅行相关的困难 (5)

☐ 对参与共享经济的负面影响 (6)

☐ 对线上约会的负面影响 (7)

☐ 工作申请方面的负面影响 (8)

☐ 其他工作相关的负面影响 (9)

☐ 上了黑名单 (10)

☐ 家人朋友上过黑名单 (11)

Sharing Economies 您使用共享经济相关服务（如共享单车，Uber等）的频率？

○ 每天 (1)

○ 每周几次 (2)

○ 每月几次 (3)

○ 极少 (4)

○ 从不 (5)

Railway Travel 您乘坐高铁出行的频率？

○ 每天 (1)

○ 每周几次 (2)

○ 每月几次 (3)

○ 极少 (4)

○ 从不 (5)

Airplane Travel 您乘坐飞机出行的频率？

○ 每天 (1)

○ 每周几次 (2)

○ 每月几次 (3)

○ 极少 (4)

○ 从不 (5)

Einde blok: Chinese respondents only

Social Credit (Dutch)

Enquêteflow

Standard: Informatie over de vragenlijst (2 Vragen)
Standard: Toegangstest nationaliteit (1 Vraag)

BlockRandomizer: 1 -

> Standard: ALL QUESTIONS (EXCL. DEMOGRAPHICS (8 Vragen)

Standard: Uitleg sociale krediet systemen (1 Vraag)
Standard: Een nationaal sociaal kredietsysteem (6 Vragen)
Block: Demografie (5 Vragen)
Block: Mailadres cadeaubon (1 Vraag)

EndSurvey: Default

Pagina-einde ─────────────────────────────────────

Start van blok: Informatie over de vragenlijst

Belangrijke **informatie**

U wordt uitgenodigd om deel te namen aan een onderzoek genaamd Goedkeuring van sociaal krediet. Dit onderzoek wordt uitgevoerd door Bart-Jente Roelofs van de TU Delft. Het doel van dit onderzoek is om erachter te komen hoe verschillende groepen denken en kijken naar sociaal krediet en zal u naar schatting 10 minuten kosten om te voltooien. Gedurende deze vragenlijst zal niet om persoonlijke informate gevraagd worden. Na gebruik voor dit onderzoek zal de anonieme data openlijk beschikbaar worden gesteld om anderen de mogelijkheid te bieden de data te bestuderen. Uw deelname aan deze studie is geheel vrijwillig en u kunt op ieder moment uw deelname stoppen. U bent vrij om op enkele of meerdere vragen geen antwoord te geven. Wij geloven dat er geen risico vastzit aan dit onderzoek; echter, zoals met ieder online gerelateerde activiteit is het risico op inbraak altijd mogelijk. Desalniettemin zullen wij alles binnen onze macht doen uw gegevens te beschermen. We zullen ieder risico minimaliseren door geen persoonlijk identificeerbare informatie te verzamelen. Dit houdt in dat alle data anoniem zal zijn en dat er geen mogelijke persoonlijk identificeerbare data wordt verzameld.

Contact:
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─ ─

Informatie survey
Met het invullen van de volgende vragenlijst maakt u **kans op het winnen van een cadeaubon (€25) naar keuze**. Wilt u kans maken op deze prijs, vult u dan alstublieft na de vragenlijst uw e-mailadres in. De winnaar zal door middel van loting gekozen worden en zal per email op de hoogte worden gebracht.

Nationaliteit
Voor het invullen van deze vragenlijst is het hebben van een Nederlandse nationaliteit vereist. Beschikt u over een Nederlandse nationaliteit?

○ Ja (1)

○ Nee (2)

Vertrouwen
Over het algemeen, zou u zeggen dat de meeste mensen te vertrouwen zijn of dat je voorzichtig moet zijn in het vertrouwen van de meeste mensen?

○ De meeste mensen zijn te vertrouwen (1)

○ Wees voorzichtig (2)

Vertrouwen

Ik zou u graag willen vragen in hoeverre u verschillende groepen mensen vertrouwt. Zou u mij alstublieft kunnen vertellen voor iedere groep of u deze groep mensen *compleet* vertrouwt, *een beetje* vertrouwt, *niet heel erg* vertrouwt of *totaal niet* vertrouwt.

	Totaal niet (1)	Niet heel erg (2)	Een beetje (3)	Compleet (4)
Uw familie (1)	◯	◯	◯	◯
Mensen die u persoonlijk kent (2)	◯	◯	◯	◯
Mensen die u voor het eerst ontmoet (3)	◯	◯	◯	◯

Vertrouwen

Hoeveel vertrouwen heeft u in hoe de overheid het land leidt: is dat *heel veel* vertrouwen, *redelijk veel* vertrouwen, *weinig* vertrouwen of *totaal geen* vertrouwen?

	Totaal geen (1)	Weinig (2)	Redelijk veel (3)	Heel veel (4)
Vertrouwen in de overheid (1)	◯	◯	◯	◯

Privacy

In welke mate vertrouwt u .... met uw persoonlijke data?

	1 2 3 4 5 6 7 8 9 10
De overheid ()	
Big-tech bedrijven (Google, Facebook, Amazon, Apple etc.) ()	

Privacy

Ik maak me **geen** zorgen om met wie ik mijn data deel aangezien mijn data toch al in handen is van de overheid

	Sterk mee oneens (1)	Oneens (2)	Niet mee eens, niet mee oneens (3)	Eens (4)	Sterk mee eens (5)
Hier ben ik het (1)	○	○	○	○	○

Privacy

Ik maak me **geen** zorgen om met wie ik mijn data deel aangezien mijn data toch al in handen is van Big-tech bedrijven (Google, Facebook, Amazon, Apple)

	Sterk mee oneens (1)	Oneens (2)	Niet mee eens, niet mee oneens (3)	Eens (4)	Sterk mee eens (5)
Hier ben ik het (1)	○	○	○	○	○

Vertrouwen

Wanneer u nadenkt over of technologie onze levens gezonder, gemakkelijker en comfortabeler maakt, zou u zeggen dat we beter of slechter af zijn met technologie? Vertelt u mij alstublieft wat het meest dichtbij uw mening komt op de volgende schaal: '1' betekent dat de wereld veel slechter af is met technologie en '10' betekent dat de wereld veel beter af is met technologie. Wanneer u van mening bent dat de mate waarin technologie onze leven beter maakt ergens tussen deze twee uitersten in ligt, geeft u dan alstublieft een bijhorende waarde tussen 1 en 10 aan die volgens u de deze mate het beste weergeeft.

	1 2 3 4 5 6 7 8 9 10
Met technologie zijn we slechter (1) of beter (10) af ()	[slider]

Vertrouwen

Hoe denkt u over big-tech bedrijven (Facebook, Amazon, Google etc.), ziet u deze bedrijven als betrouwbaar (als in: nemen verantwoordelijkheid voor hun daden, houden zich aan de wet, gedragen zich zoals de maatschappij van ze verwacht, houden zich aan veiligheids- en kwaliteitseisen). Geeft u alstublieft aan op een schaal van 1 tot 10 in hoeverre u vindt dat big-tech bedrijven te vertrouwen zijn, waarbij 1 aangeeft dat ze helemaal <u>niet</u> betrouwbaar zijn en 10 dat ze geheel betrouwbaar zijn. Wanneer u van mening bent dat betrouwbaarheid ergens

tussen deze twee uitersten in ligt, geeft u dan alstublieft een bijhorende waarde tussen 1 en 10 aan die volgens u de betrouwbaarheid het beste weergeeft.

	1	2	3	4	5	6	7	8	9	10

Betrouwbaarheid van big-tech bedrijven ()	▬▬▬▬▮▬▬▬▬▬

Leest u de volgende tekst alstublieft aandachtig door:

Sociale krediet systemen maken gebruik van het toekennen van een score aan een persoon op basis van meerdere soorten gedrag die worden of werden vertoond. Het doel dat vaak wordt toegeschreven aan het gebruik van een dergelijke "sociale score" is een meer "betrouwbare", "integere" en "deugdzame" samenleving te creëren door meer "integer", "betrouwbaar" en "deugdzaam" gedrag te belonen (bv. betrokkenheid bij vrijwilligersactiviteiten) en minder "integer", "betrouwbaar" en "deugdzaam" gedrag te bestraffen (bv. niet terugbetalen van leningen/negeren van een rood verkeerslicht).

Sociaal krediet
Wanneer op nationaal niveau een sociaal kredietsysteem zou worden ingevoerd, wie zou in dat geval dit nationaal sociaal kredietsysteem moeten beheren? *(selecteren van meerdere antwoorden mag)*

☐ De overheid (1)

☐ Big-tech bedrijven (Google, Facebook, Amazon, Apple etc.) (2)

<u>Sociaal krediet</u>

In het geval van invoering van een nationaal sociaal kredietsysteem, maak ik me zorgen of dezelfde waarden gelden voor mensen in posities met veel macht (CEO's/executive officers/politici/ministers/de minister-president) als voor normale burgers.

	Sterk mee oneens (1)	Oneens (2)	Neutraal (3)	Eens (4)	Sterk mee eens (5)
Hier ben ik het (1)	○	○	○	○	○

<u>Sociaal krediet</u>

Ik denk dat een nationaal kredietsysteem ervoor zorgt dat mensen meer verantwoording nemen voor hun daden.

	Sterk mee oneens (1)	Oneens (2)	Niet mee eens, niet mee oneens (3)	Eens (4)	Sterk mee eens (5)
Hier ben ik het (1)	○	○	○	○	○

<u>Sociaal krediet</u>

Ik denk dat een nationaal kredietsysteem de kwaliteit van leven zal verbeteren.

	Sterk mee oneens (1)	Oneens (2)	Niet mee eens, niet mee oneens (3)	Eens (4)	Sterk mee eens (5)
Hier ben ik het (1)	○	○	○	○	○

Sociaal krediet

In welke mate zou u een nationaal sociaal kredietsysteem goedkeuren?

	Erg sterke afkeuring (1)	Lichte afkeuring (2)	Geen afkeuring en geen goedkeuring (3)	Lichte goedkeuring (4)	Erg sterke goedkeuring (5)
Mate van goed/afkeuring (1)	○	○	○	○	○

- -

Controlevraag

Hoe vaak bent u op de maan geweest?

○ Nooit (1)

○ 1 keer (2)

○ Meerdere keren (3)

Einde blok: Een nationaal sociaal kredietsysteem

Start van blok: Demografie

Gender
Hoe identificeert u zichzelf?

○ Man (1)

○ Vrouw (2)

○ Anders, namelijk: (3) _____

- -

Leeftijd
Wat is uw leeftijd?

○ 18-25 jaar (1)

○ 26-35 jaar (2)

○ 36-50 jaar (3)

○ 51-65 jaar (4)

○ 65+ jaar (5)

Educatie
Wat is de hoogste vorm van onderwijs die u heeft afgerond?

○ Groep 1 & 2 van het basisonderwijs (ISCED 0) (1)

○ Basisschool / Primair onderwijs (ISCED 1) (2)

○ Lager secundair onderwijs (mbo entree-opleiding / VMBO (klas 1-4) / VWO of vavo (klas 1-3)) (ISCED 2) (3)

○ Hoger secundair onderwijs (mbo niveau 2, 3 of 4 / VWO of vavo (klas 4-6) (ISCED 3) (4)

○ Kort tertiair onderwijs (2-3 jarig hbo) (ISCED 5) (5)

○ Tertiair onderwijs bachelor (wo bachelor, hbo bachelor, post-hbo opleiding) (ISCED 6) (6)

○ Tertiair onderwijs master (wo master, hbo master) (ISCED 7) (7)

○ Doctoraat (gepromoveerden, wo doctor) (ISCED 8) (8)

Inkomen

Wat is uw netto inkomen per jaar? Onder netto inkomen worden hier inkomsten uit loon (excl. belasting), pensioen, toeslagen en eventuele andere inkomsten.

○ < €10.000 (= < €833,33 per maand) (1)

○ €10.000 - €26.940 (= €833,34 - €2245 per maand) (2)

○ €26.941 - €50.000 (= €2245,01 - €4.166,67 per maand) (3)

○ €50.000 - €100.000 (= €4.166,67 - €8.333,33 per maand) (4)

○ > €100.000 (= > €8.333,34 per maand) (5)

○ Zeg ik liever niet (6)

- -

Locatie

Ben u woonachtig in Nederland?

○ Ja,　　de　　postcode　　van　　mijn　　woonadres　　is:　　(1)

_____

○ Nee,　　ik　　ben　　woonachtig　　in　　(land):　　(2)

_____

Einde blok: Demografie

Start van blok: Mailadres cadeaubon

Winnen cadeaubon

Als u kans wilt maken op een waardebon naar keuze van €25, kunt u hieronder uw mailadres invullen. De winnaar zal per loting bepaald worden en via email op de hoogte worden gebracht.

_____

Einde blok: Mailadres cadeaubon