Civil and commercial law improves the construction of social credit system in the context of “Internet +”

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Abstract

As Internet technology sharply improves, the social outlook has been greatly improved. However, in the process of exploring market economy, the problem of credit missing has become prominent. The market economy is a credit economy, so market dishonesty will seriously corrode the market order and hinder the healthy development of the economy. Therefore, this paper, based on the correlation coefficient algorithm, calculated and analyzed the way civil and commercial law improves the construction of the social credit system in depth. The research results show that the construction degree of civil and commercial law definition is 56% in credit system. The construction degree of the characteristics of civil and commercial law is 67%. In addition, the unsound legal system leads to the difficulty of constructing a social credit system is as high as 78%, and the incomplete government mechanism leads to the difficulty of constructing a social credit system is 56%. This means that the complexity of positive information determines the role of public credit service departments in the credit service system.

Keywords: Internet +; Civil and commercial law; Social credit; Correlation coefficient algorithm; Construction plan

AMS 2020 codes: 91F99
1 Introduction

Information technology innovation continues to change the way we work, socialise, share information and interact in society, and this change has contributed to the development of innovation in multiple industries. Information technology innovation has become one of the core drivers of economic growth, and as finance is the blood of the economy, it is imperative to combine finance and technology to achieve Internet financial innovation [1-2]. Internet financial innovation is not simply “Internet + finance” or “finance + Internet”, but will become a new financial industry in the era of “Internet + economy” driven by big data. It is a new financial industry in the era of “Internet + Economy” driven by big data. Internet financial innovation does not change the attributes of traditional finance, but still fulfils the role of financial intermediation, i.e. the function of “asset conversion”, which is to realize the inter-term transfer of resources under the incomplete information of the market. It is still necessary to build credit systems and risk management to prevent market fraud and default [3-4]. However, it is not a ‘pseudo-proposition’, as Liu [5] points out. Wong [9] argues that the Internet has multiple meanings such as interaction, association, network, channel and choice, and that its subject is people, not technology. Internet finance is a new form of participation based on the idea of the Internet, which focuses on the full rights and means [10-11].

China has now entered the Internet society, and the era of big data arising from network interconnection and information sharing has changed the functions and management methods of the government, especially as the current government has proposed to change government functions from a management-oriented government to a service-oriented government, and the ongoing reform of “decentralisation” is a profound reflection of this goal [12-13]. The first step in this transformation is to make active use of new technologies and embrace the Internet. Through methods such as the government’s management model can be adapted to the current new economic development, so as to better serve the market. In recent years China has exposed many shortcomings in the construction of spiritual civilisation, with the lack of social integrity being particularly prominent [14-15]. It is undeniable that China’s private enterprises have brought growth contribution and a high degree of market dynamism to the economy in the process of economic development, but currently many business operators still lack a sense of social responsibility and contractual spirit to match the division of labour in society, and are willing to sacrifice the environment and evade taxes in pursuit of profit. The above practices have not only caused huge losses to China’s fiscal revenue, but have also caused great harm to the social climate. A sound tax credit system is conducive to promoting the modernisation of the national governance system and improving tax collection and management and fiscal revenue [16-17]. In the context of the social integration of Internet-government, transforming the previous concept of government departments operating individually and promoting the construction of tax credit system through the use of Internet+ has become the current opportunity and challenge faced by government departments.

The emergence of the credit system is based on the basic fact that non-immediate transactions, in the middle of any kind of transaction between strangers or even acquaintances, there is the problem of whether to keep one’s word, and only by obeying the laws of market exchange can one maximize the pursuit of benefits, in order to adapt to such laws and ensure such a day, it is necessary to establish and maintain the order of credit through the civil and commercial legal system [18-19]. According to Dencik [20], the social credit system is a mechanism that acts as a norm of behaviour in the market economy and ensures the healthy transformation of a country’s market economy from one in which the original means of payment are the dominant means of transaction to one in which credit is the dominant means of transaction. The role of credit systems is directly demonstrated by, firstly, their role for consumers in improving their standard of living, dealing with emergencies and providing convenience [21-22]. Individual consumers who have a stable job or a regular income can use their creditworthiness to obtain credit for consumption and enjoy the convenience and comfort of material
life in advance: secondly, for enterprises, they can increase their purchasing power when they are short of funds and cannot afford to buy goods, and by adopting credit sales they can expand their transactions and gain a competitive advantage. If a credit management system can be set up within the company, it will not only help the company to sell safely on credit, but also to make objective and scientific credit decisions and prevent “triangular debts” from occurring. From an indirect or macro point of view, firstly, at a certain stage of market development, developed countries invariably rely on the expansion of credit transactions in order to expand the size of the market, which in turn leads to the expansion of production; secondly, credit systems invariably play an important role in regulating market order [23-24]. Scholl [25] argues that credit, by its very nature, constrains the behaviour of market participants and thus regulates the economic order of the market. Furthermore, a credit system can improve the efficiency of government, maintain the image of government, and to a certain extent play a role in preventing and detecting criminal acts [26-27]. In short, the establishment of a credit system can create an open and transparent environment and confirm a clear and enforceable standard and boundary, which is fair trade under honesty and trustworthiness. On the positive side, in such an environment, both parties to a transaction are clear about their respective interests to pursue, are able to quickly access each other’s true credit information, and adopt credit transactions, which improves the efficiency of transactions and reduces transaction costs: for the economy as a whole, it enlivens the market, reduces overall transaction costs and operating costs, and effectively maintains economic order [28-29]. On the flip side, the absence or lack of a sound credit system not only leaves traders unprotected when their legitimate rights are compromised, but also causes traders to lose confidence and reduce their trading behaviour from various investment and consumption links, which would be a very significant impediment to the sustainable development of the social economy [30-31].

In summary, the civil and commercial law to protect the day of the credit of the unfolding, while the credit system in the law aims to establish a good business environment, to achieve a harmonious relationship between people and enterprises in the transaction, in short, the two purposes unified, the civil and commercial law to establish the credit system and the system of the basic value orientation is to maintain the security of the transaction [32]. Therefore, the idea of this paper starts from the background of Internet+, and proposes countermeasures to improve the tax credit system from three aspects, such as the degree of perfection of civil and commercial law, the core problems of social credit system, and the construction of social credit system respectively.

2 Credit model construction based on the correlation coefficient method

2.1 Correlation coefficient method study

In the study of personal credit assessment, two main categories of behaviour are used to classify customers into default or non-default. Customer default is used as a positive category sample and customer compliance is used as a negative category sample. The features selected for the personal credit assessment study are biased, and for the positive class samples, the cost of misclassification will be greatly reduced in practice if the relevant features are all biased towards the positive class. The combination of feature subset selection strategies and classifiers can improve classifier performance in most cases compared to the full set of features. However, it is important to note that the choice of the optimal feature subset varies between classifiers. Depending on how feature selection and models are combined, feature selection algorithms can be mainly classified as filtered, wrapped and embedded. The filtering type is based on univariate screening, which mainly includes correlation coefficient method and chi-square test; the wrapped type mainly includes recursive feature elimination method; the embedded type can be divided into penalty term based feature selection method and tree model based feature selection method.
The Correlation Coefficient Method (CCM), is a statistical measure used to reflect the degree of similarity between two variables. It is calculated by the following formula:

$$r = \frac{\sum (x - \bar{x})(y - \bar{y})}{\sqrt{\sum (x - \bar{x})^2 (y - \bar{y})^2}}$$

(1)

Where $r$ represents the degree of correlation between two variables and takes a range of values. Generally speaking, $r$ less than 0.4 is a weak correlation.

A chi-square test assumes that the characteristics and target variables are independent of each other. The deviation of the actual value from the theoretical value is calculated. The closer the actual value is to the theoretical value, the smaller the difference and the smaller the chi-square value. It is calculated as follows, with $A$ denoting the actual value taken and $E$ denoting the expected number.

$$\chi^2 = \sum \frac{(A - E)^2}{E}$$

(2)

The correlation coefficient method is used to obtain features by recursively selecting the smallest set of features. First, the classifier is trained on all the features to obtain the importance of each feature, then the least important features are eliminated and the training continues. A predetermined number of features is reached by recursively. The coefficients of the less influential features are decayed to zero by setting the scaling factor so that these features are removed and the important features are retained. The objective function for its optimisation as follows:

$$\min_{\omega} \frac{1}{2} \left\| Y - X^T \omega \right\| + \lambda \left\| \omega \right\|$$

(3)

Where $\omega$ is the regression coefficient and $\lambda$ is the penalty term of the paradigm $\omega$ of the regression coefficient $L_1$.

Binomial logistic recursion is a classification model with the following conditional probability distribution:

$$p(Y = 1 | x) = \frac{\exp(\omega \cdot x + b)}{1 + \exp(\omega \cdot x + b)}$$

(4)

$$p(Y = 0 | x) = \frac{1}{1 + \exp(\omega \cdot x + b)}$$

(5)

Where $x \in \mathbb{R}^n$ is the input sample attribute, is the category label of $Y \in \{0, 1\}$ samples, and $\omega = (\omega^{(1)}, \omega^{(2)}, \ldots, \omega^{(n)})$ is the weight vector. As in equation (6) the probability of the event occurring and the logistic model can be expressed as:

$$\frac{p}{1 - p} = e^{\omega \cdot x + b}$$

(6)
Based on this model, the output $y$ with the highest posterior probability is found for a given input $x$ using the correlation coefficient method.

Given that the input space $x \in \mathbb{R}^n$ is a collection of $n$-dimensional vectors and the output space is the class label $y = \{c_1, c_2, \cdots, c_k\}$, the correlation coefficient method is defined as follows.

$$p(Y = c_k \mid X = x) = \frac{p(X = x \mid Y = c_k) p(Y = c_k)}{\sum_k p(X = x \mid Y = c_k) p(Y = c_k)}$$

(8)

The conditional independence of equation (8) is assumed to be:

$$p(X = x \mid Y = c_k) = p\left(X^{(1)} = x^{(1)}, \cdots, X^{(n)} = x^{(n)} \mid Y = c_k\right) = \prod_{j=1}^n p(X^{(j)} = x^{(j)} \mid Y = c_k)n^n$$

(9)

The classification of the correlation coefficient method therefore has the following rules.

$$p(Y = c_k \mid X = x) = \frac{p(Y = c_k) \prod_j p(X^{(j)} = x^{(j)}) p(Y = c_k)}{\sum_k p(Y = c_k) \prod_j p(X^{(j)} = x^{(j)}) p(Y = c_k)}$$

(10)

$$y = \arg \max_{c_k} p(Y = c_k) \prod_j p(X^{(j)} = x^{(j)}) p(Y = c_k)$$

(11)

The basic model of the correlation coefficient method is defined as a linear classifier with maximum interval on the feature space for a given training sample set $D = \{(x_1, y_1), (x_2, y_2), \cdots, (x_n, y_n)\}, y \in \{-1, 1\}$ by constructing and solving the constrained optimization problem:

$$\min_{\omega, b} \frac{1}{2} \|\omega\|^2$$

(12)

$$s.t. \ y_j (\omega \cdot x_j + b) - 1 \geq 0$$

(13)

The optimal solution $\omega^*, b^*$ is thus obtained by separating the hyperplane as well as the classification decision function as:

$$\omega^* x + b^* = 0$$

(14)

$$f(x) = \text{sign}(\omega^* x + b^*)$$

(15)

The correlation coefficient method is a basic classification and regression algorithm. In classification problems, the process of constructing a decision tree is the process of selecting features and
determining decision rules, which can be seen as a collection of if-then. The core of the decision tree is feature selection, and the algorithms include the ID3 algorithm, the C4.5 algorithm and the CART algorithm. Take ID3 as an example to introduce the principle of decision tree algorithm.

Entropy is a measure that represents the uncertainty of a random variable. Let \( X \) be a discrete random variable with a probability distribution of

\[
p(X = x_i) = p_i \quad i = 1, 2, \ldots, n
\]  

(16)

The entropy of a random variable is defined as:

\[
H(X) = -\sum_{i=1}^{n} p_i \log p_i
\]  

(17)

The conditional entropy \( H(Y|X) \) of a random variable \( Y \) given a random variable in equation (17) represents the uncertainty under the condition that the random variable is known, and is defined as:

\[
H(Y | X) = -\sum_{i=1}^{n} p_i H(Y | X = x_i)
\]  

(18)

The information gain represents the degree to which the information uncertainty of class \( Y \) is reduced by knowing the information of feature \( X \). The information gain of feature \( A \) on the training dataset \( D \) is defined as the difference between the empirical entropy \( H(D) \) of the set \( D \) and the empirical conditional entropy \( H(D|A) \) of \( D \) under the given conditions of feature \( A \), i.e.

\[
g(D, A) = H(D) - H(D | A)
\]  

(19)

The core idea of the correlation coefficient method is to select the feature with the greatest information gain to construct the node, and then continue to apply the above method to the child nodes until the sample is divided or a restricted tree depth is reached.

2.2 CCM-Credit model building

The CCM algorithm is to construct multiple base learners and combine them through certain strategies, which usually gives better results than a single learner. The CCM-Credit model uses self-sampling to generate different base classifiers. Specifically, given a training set with a number of samples, the model is trained separately by sampling a sample set of training samples with put-back sampling, and the final results are voted on in the classification problem. The model flow chart is shown in Figure 1.
The CCM-Credit model is very similar to the Random Forest algorithm in that both consist of a number of decision trees. The main differences between extreme random trees and random forests are generally compared as follows: in the process of constructing each decision tree, random forests use bootstrap resampling methods to obtain a subset of samples for training, while CCM-Credit models use all samples for training; secondly, random forests select the bifurcation nodes in a decision tree by means of information gain in a random subset, the The CCM-Credit model uses a completely random selection of bifurcation features. Thus, to some extent, the CCM-Credit model will achieve better results than the random forest.

The optimization is expanded to the second order derivative and a canonical term is added to the objective function to weigh the decline of the objective function against the complexity of the model. The objective function is.

\[ \text{Obj}^{(r)} = \sum_{i=1}^{n} l(y_i, \hat{y}_i) + \sum_{j=1}^{T} \Omega(f_j) + \text{constant} \]  

(20)

According to the Taylor formula, the objective function can be transformed into:

\[ \text{Obj}^{(r)} \approx \sum_{i=1}^{n} \left[ l(y_i, \hat{y}_i^{(r-1)}) + g_i f_i(x_i) + \frac{1}{2} h_i f_i^2(x_i) \right] + \Omega(f_j) + \text{constant} \]  

(21)

\[ \Omega(f_j) = \gamma T + \frac{1}{2} \lambda \sum_{j=1}^{n} \omega_j^2 \]  

(22)

Where \( \gamma \) and \( \lambda \) are penalty factors and \( T \) is the number of leaf nodes of a given tree.

The complexity of the CCM-Credit model to find the optimal split point = number of features \( \times \) number of split points \( \times \) number of samples. To reduce the time complexity, a histogram algorithm, a mutually exclusive feature bundling algorithm, and a one-sided gradient sampling algorithm are proposed.

Instead of XGBoost’s pre-sorting algorithm, the histogram algorithm discretizes a continuous floating-point feature into \( k \) integers and performs a gradient accumulation and a count of the number of features, depending on the partition box in which they are located. When traversing the feature, it is only necessary to traverse to find the optimal partition point based on the discrete value of the histogram. The mutually exclusive feature bundling (EFB) algorithm, which is accelerated from the
point of view of feature reduction, allows the number of features to be reduced by fusing and binding some features, which further reduces the time complexity when constructing the histogram. A constant is introduced for balancing. The effect of noise and low frequency category type data on the data distribution can be reduced by:

\[
\hat{x}_k = \frac{\sum_{j=1}^{n} [x'_j = x'_k] \cdot y_j + ap}{\sum_{j=1}^{n} [x'_j = x'_k] + a}
\]

(23)

Where \( p \) is the prior term added and, for binary classification, the prior term is the prior probability of a positive case; \( a \) is a weighting factor greater than 0.

In each iteration of the CCM-Credit model, the loss function uses the same dataset to derive the gradient of the current model, which is then trained to obtain the base learner, resulting in a bias in the gradient estimation and hence a prediction bias. The CCM-Credit model replaces the gradient estimation method in the traditional algorithm by using ranking boosting, which in turn mitigates the bias in the gradient estimation and improves the generalisation capability of the model.

With regard to the study of the problem of unbalanced personal credit data classification, it is clearly not reasonable to use accuracy alone as the only evaluation indicator. The following indicators can be calculated.

\[
\text{Accuracy} = \frac{TP + TN}{\text{total}}
\]

(24)

\[
\text{Recall} = \frac{TP}{TP + FN}
\]

(25)

\[
\text{Precision} = \frac{TP}{TP + FP}
\]

(26)

Where \( \text{Accuracy} \) is the accuracy rate, \( \text{Recall} \) is the recall rate, \( \text{Precision} \) is the precision rate and \( \text{total} \) represents the overall sample.

Logarithmic loss, or cross-entropy loss, quantifies the accuracy of the classifier by penalising incorrect classifications. For the dichotomous classification task, this is calculated as:

\[
\logloss(y, p) = -\frac{1}{N} \sum_{i=1}^{N} (y_i \log p_i + (1 - y_i) \log (1 - p_i))
\]

(27)

Where \( N \) denotes the number of samples, \( y_i \) and \( p_i \) denote the true value of the first sample and the probability of a correct prediction respectively.

The ROC curve is a visual representation of the classifier performance, giving the change in the relationship between TPR and FPR for the CCM-Credit model, allowing a more intuitive observation to compare the strengths and weaknesses of each learner; the AUC value is the area value under the ROC curve, which is used to evaluate the generalisation ability of the model.
3 Building a social credit system for civil and commercial law

3.1 The core issues of a social credit system

Although China has promulgated the Outline of the Social Credit System Construction Plan and the construction of a social credit system has achieved certain results, in reality, it still fails to meet the needs of social and economic development, and there is still a certain gap with the fine governance of big data. Therefore, in this paper, the core issues such as legal system, government mechanism, mobilization of the public and privacy protection paradox are analyzed in depth. The specific results are shown in Table 1. The calculated analysis shows that the inadequacy of the legal system leads to a 78% difficulty in achieving the construction of a social credit system. There are no strict legal regulations when collecting and using information, therefore many unscrupulous elements in the market use credit information for profit, which seriously infringes on citizens’ information privacy. The incompleteness of the government mechanism has led to a 56% difficulty in achieving the construction of a social credit system. This is because China’s socialist market economy is developing rapidly and various contradictions are gradually coming to the fore in the process of social transformation and development and deepening reform, among which the credit issue is also very prominent. Not only is there a lack of corresponding laws and regulations to restrain breach of trust, but also the regulatory actions taken by government departments are severely lacking, administrative penalties and legal sanctions are insufficient, and credit issues have basically become a dead end in government administration. Insufficient mobilisation of the public leads to a 21% difficulty in achieving a social credit system. The paradox of privacy protection has emerged, making it 67% difficult to build a social credit system.

Table 1. Summary of core issues in social credit systems

<table>
<thead>
<tr>
<th>Problem name</th>
<th>Kernel keyword</th>
<th>Difficulty of premise set (%)</th>
<th>Solutions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Legal system</td>
<td>Imperfect, legal</td>
<td>78</td>
<td>Collection of personal information by legal means</td>
</tr>
<tr>
<td>Government mechanism</td>
<td>Incomplete, department</td>
<td>56</td>
<td>Establish perfect supervision mechanism</td>
</tr>
<tr>
<td>Mass mobilization</td>
<td>Insufficient, community</td>
<td>21</td>
<td>Establish a complete credit file system.</td>
</tr>
<tr>
<td>The Paradox of Privacy</td>
<td>Appearances, weaknesses</td>
<td>67</td>
<td>Convenient access to more citizens’ personal information</td>
</tr>
</tbody>
</table>

3.2 The relationship between credit and civil and commercial law

Both the market economy and civil and commercial law must be powered by credit for sustainable development, and the construction of a credit system for civil and commercial law has also become the trend, which has an important impact on guiding China’s economic and social development. Constantly improving the mechanism of social credit system can improve the effectiveness and fairness of market transactions and make the business environment more healthy and scientific. Advocating the construction of the credit system of civil and commercial law is a necessary means to protect the safety of transactions and promote rapid economic development, and to realise the principle of social urban trustworthiness in a real sense. Therefore, this paper uses the CCM-credit model as a calculation tool to conduct an in-depth study on the relationship between social credit and civil and commercial law. The parameters and ranges of the variables involved in the model are shown in Table 1.
Table 2. Table of parameters for civil and commercial law modules

<table>
<thead>
<tr>
<th>Number</th>
<th>Parameter name</th>
<th>Definition</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>$g_i$</td>
<td>First derivative of loss function</td>
<td>$(-\infty, +\infty)$</td>
</tr>
<tr>
<td>2</td>
<td>$h_i$</td>
<td>Second derivative</td>
<td>$(-\infty, +\infty)$</td>
</tr>
<tr>
<td>3</td>
<td>$f_i(x)$</td>
<td>The i decision tree</td>
<td>$[1, n]$</td>
</tr>
<tr>
<td>4</td>
<td>$\Omega(f_i)$</td>
<td>Complexity of decision tree i</td>
<td>$(0,1,4,6,19,45,79)$</td>
</tr>
<tr>
<td>5</td>
<td>$constant$</td>
<td>The sum of complexity of the previous t-1 tree</td>
<td>$[k,k+1,k+2,…]$</td>
</tr>
</tbody>
</table>

The credit problem was used as the problem parameter and the civil and commercial law as the improvement parameter. The specific results are shown in Figure 2. The analysis of the calculations shows that the degree of construction defined by civil and commercial law in the credit system is 56%. The fundamental reason for this phenomenon is that the definition of credit in civil and commercial law is mainly judged by the degree of performance of the parties to their obligations. Firstly, it is a question of valid promises and contracts, which require civil subjects, as legally defined, to fulfill their promises and contracts and, at the same time, to bear legal liability in certain cases. In the course of many transactions, civil subjects are expected to judge their creditworthiness by obtaining information and information about the parties to the transaction, which is an important means of preventing fraud and increasing the success of the transaction, and the ability of civil subjects to fulfill their obligations and assume responsibility is once again demonstrated. A comparative analysis shows that the degree of construction of civil and commercial law features is 67%. The main reason for this is that the civil subject is consciously inclined towards the fulfillment of a contract or commitment and actually has the ability to assume obligations can be considered the primary characteristic of civil and commercial law. The true meaning of credit is analysed, as it represents the socio-economic relations between people, so that having powers and fulfilling obligations as well as having claims and debts are within the scope of such economic relations. Credit is also characterised in civil and commercial law by the analysis of the situation through the future and expectations, where changes in economic interests lead civil subjects to have certain expectations. Credit is to a certain extent equivalent to expectations, and a commodity is equivalent to a certain amount of money. Credit also has a certain interest in civil and commercial law, and value is one of the criteria by which it is judged.

![Figure 2](image-url)

Figure 2. The relationship between credit systems and civil and commercial law
3.3 Building a social credit system

The establishment of an economic credit system or an ethical credit system, and the predominance of positive or negative information systems are two of the more realistic issues in the construction of a social credit system at present, and clarifying these two issues helps to clarify the direction and thinking of the construction of a social credit system. Table 3 shows some important individual quality characteristics in the individual credit assessment system. As can be seen from Table 3, the complexity of positive information determines the limited role of the public credit service in the credit service system; on the one hand, the public sector cannot have such a large and complex group of information at its disposal, and on the other hand, the public sector lacks the specialisation and expertise to integrate and assess this information. The limitations of the public sector are most evident with regard to one particular type of positive information: the individual characteristics of the borrower. This includes information on the borrower’s spending habits, work effort, vices, personal character, etc.

<table>
<thead>
<tr>
<th>Table 3. Important and unimportant quality characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Important</strong></td>
</tr>
<tr>
<td>Honesty, honour</td>
</tr>
<tr>
<td>Strictly abide by time and rules</td>
</tr>
<tr>
<td>Luxury, frugality</td>
</tr>
<tr>
<td>Vigor</td>
</tr>
<tr>
<td>Work performance</td>
</tr>
<tr>
<td>Habit (drinking, gambling, nuisance)</td>
</tr>
</tbody>
</table>

Table 4 provides an explanation of several important criteria. As can be seen from Table 4, information related to the personal quality characteristics of the consumer accounts for at least 15% of the weighting in the credit assessment. In the US, 57% of retail establishments experience delays in payment, but as long as the debtor can demonstrate a positive willingness to repay, actively compensate for losses and communicate well, their credit level will not be affected. This information can clearly compensate for credit levels if defaults and failures are caused by factors that would not be expected under normal circumstances.

<table>
<thead>
<tr>
<th>Table 4. Important positive quality characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Honesty, honour</strong></td>
</tr>
<tr>
<td>1. Whether the borrower has the conviction to strive for repayment;</td>
</tr>
<tr>
<td>2. Whether borrowers strive to inform borrowers of their operational risks in a timely manner;</td>
</tr>
<tr>
<td>3. How to treat all borrowers fairly if they have a record of default;</td>
</tr>
<tr>
<td>4. If the borrower has default records, whether he or she makes efforts to pay;</td>
</tr>
<tr>
<td><strong>Energy, attitude</strong></td>
</tr>
<tr>
<td>1. Whether borrowers show an attitude of hard work and positive work</td>
</tr>
<tr>
<td>2. Whether borrowers have speculative tendencies</td>
</tr>
<tr>
<td>3. Whether borrowers spend enough energy on other items of the project</td>
</tr>
<tr>
<td><strong>Frugality, luxury</strong></td>
</tr>
<tr>
<td>1. Whether household consumption matches income</td>
</tr>
<tr>
<td>2. Whether specific consumer goods match income</td>
</tr>
</tbody>
</table>

4 Conclusion

As an institutional arrangement for a country’s credit management, a social credit system has the important function of reducing information asymmetry, curbing moral hazard and facilitating economic transactions. Establishing a high-quality social credit system can effectively reduce transaction costs, promote the development of social credit transactions and credit consumption, and establish a social culture of honesty and trustworthiness. This paper uses the CCM-Credit model as a
calculation tool to conduct an in-depth investigation into the construction of a social credit system. The specific findings are as follows.

1) The analysis of the calculation shows that the inadequacy of the legal system leads to a 78% difficulty in realising the construction of a social credit system. The main reason is that the current construction of China’s social credit system lacks supporting laws and regulations, there is no clear law to protect personal privacy information, and the Personal Information Protection Law is still in the process of being revised, so there are no strict legal regulations when it comes to the collection and use of information.

2) Comparative analysis shows that the incompleteness of government mechanisms leads to a 56% difficulty in achieving the construction of a social credit system. This is because China’s socialist market economy is developing rapidly and various contradictions are gradually coming to the fore in the process of social transformation and development and deepening reform, among which the issue of credit is also very prominent. The difficulty in achieving a social credit system due to insufficient mobilisation of the masses is 21%. The paradox of privacy protection has emerged, leading to a 67% difficulty in building a social credit system.

3) The model calculates that the degree of construction of the credit system, as defined by civil and commercial law, is 56%. The root cause of this phenomenon is that the definition of credit in civil and commercial law is mainly judged by the extent to which the parties fulfil their obligations. The degree of construction of the characteristics of civil and commercial law is 67%. The main reason for this is that civil subjects are consciously inclined towards the fulfilment of contracts or commitments and that the ability to actually undertake obligations can be considered a primary characteristic of civil and commercial law.

References


