Research of User Credit Compliance Willingness Based on Ttf Model

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Abstract: According to the Characteristics of Credit Contract Performance in Stages, This Paper Constructs a Performance Supervision Model to Focus on the Role of Credit Performance Supervision in Protecting the Rights and Interests of Creditors. Although the Establishment of Default Clauses and Guarantees Helps to Fulfill the Contract and Strengthen the Credit Supervision of the Lender, the Credit Supervision Must Pay a Certain Cost. Credit Supervision is Really Effective Only When the Cost of Performance Supervision is Lower Than the Benefits Brought by Supervision. Compared with the Nominal Form Supervision, the Substantial Supervision Can Increase the Profit of the Lender.

1. Introduction

Saracevic (1995) proposed that the evaluation of information systems could be divided into two categories: system-centered and user-centered. These methods could complement each other and were considered in the evaluation of effective information retrieval systems. Draw upon

TTF model and subsequent improvements made by scholars, give full consideration to the system, the user, the user needs, and the relationship between the tasks that will be involved in the evaluation activity influence factors according to their different integrated into the vera.ttf properties, so as to avoid ignore a particular aspect of system or user in the evaluation, subjective bias error caused too quantitative or too, and give full consideration to the task elements in utilizing resources, as a point in the evaluation of system and user [1]. The realization of specific information needs of users is regarded as a task completed by users using the network, and various databases, websites, BBS and search engines of network resources are regarded as the technical means for users to choose and solve their information needs and support information collection. The task technology adaptation theory can be used to consider the utilization efficiency of network information resources, that is, the user's task requirements and the adaptation of network tools affect the utilization efficiency of network information resources. Only when the functions and characteristics of online information system can well support users' information needs or tasks can the utilization of information resources have higher efficiency.

The integrated model shows the mechanism of network information resources being used correctly and fully under the influence of various factors. Break these interacting factors into three pieces:

(1) External factors, including organizational influence and social norms, usage habits, etc.;

(2) Internal factors: personal ability;

(3) Core factors: technical characteristics, task characteristics and task technology adaptation. In addition, the use of technology in this module can be extended to T A M, which is not covered in this article.

1.1 External Factors: Organizational Influence, Social Norms, Usage Habits, Etc.

The influence of the organization on many users, especially those who are engaged in a group task or project, may use a specific database or information system for organizational requirements or commands. This cannot reflect whether a network information system can really meet the task needs of users. In addition, for some information systems have permission restrictions, the role and

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status of users in organizational tasks will affect whether they can get convenient and comprehensive information system service support. The organizational structure and the assignment of authority will affect the suitability of individual tasks and technologies in the implementation of tasks. When evaluating network technology products, it is a noticeable problem to consider the organizational support that users get when performing tasks.

Due to the limited time and energy of individuals such as social norms and usage habits, people may not spend extra time to understand and learn a certain technology, but adopt some information system that is not more conducive to the completion of tasks according to their surrounding or previous usage habits [2]. Now there are new technology to the market, the old system is constantly updated, many technology companies, database companies for the launch of new products to the user training and trial. In practice, people tend to stay in the use of the old system, even if there is a better technology product launched without a convenient and fast learning channel will not be quickly accepted and automatically learn and put into use. In order to break this psychological factor and habitual influence, the company sends special trainers or agents to lead new and old users to understand the advantages of new technology products, which is a good strategy to make users accept the technology.

1.2 Internal Factors: Personal Ability, Etc.

People choose techniques that have been successful in their past missions, based on their past experience. Users' judgments of their ability to use computers and networks also affect their use of technology and the completion of tasks. Users in the network information activities, not only need the knowledge and skills about Computer use, and need the knowledge and skills about Internet use, so do to Campeau and Higgins definition proper extension, this Computer self-efficacy (Computer Self efficacy, CSE) refers to the individual for his own use to judge the ability of Computer and network, these abilities including user to commonly used software and hardware of Computer knowledge and skills, etc., Also includes a number of commonly used or well-known websites at home and abroad, network database and search engine understanding and information query capabilities.

1.3 Core Factors: Technical Characteristics, Task Characteristics and Task Technology Adaptation

Characteristics of technology (information resources) the use of network information tools involves various factors such as the application of information technology, the status of system information resources, network communication conditions, access to information resources, specific information needs of users, and user cognition. Therefore, the characteristics of network information tools can be classified from different perspectives. This paper discusses the characteristics of network resources, which can help users to obtain the required resources more conveniently and accurately, including the efficiency of information content organization and retrieval, the coverage of information content, user-friendly, easy to use, the subtlety of content, personalized services, etc.

Task requirements for users, they usually start from their task purpose, the knowledge, profession and resource type involved in the task, and then select the resources available to them and related to the task for further information acquisition. Task requirements are usually interpreted as the complexity and difficulty of the task content, and task types are classified accordingly. Goodhue and Thompson suggest that task features are those that make the user more dependent on the information system to perform the task. Therefore, it is necessary to correctly describe the content, nature, scope and difficulty of the task, as well as the user's role and permission in the task, in order to clearly grasp the task requirements.

Task technology adaptation according to Goodhue et al., task technology adaptation refers to the degree to which information technology can assist individuals in completing their tasks or business responsibilities; More specifically, task technology adaptation refers to task requirements, personal abilities and technical functions

Goodhue et al constructed 8 indicators to measure, namely: (1) data quality (timeliness, accuracy

and degree of detail); (2) data localization (whether it is easy to judge the source and meaning of the data); (3) whether authorized to obtain data; (4) system data compatibility; (5) training and ease of use; (6) product timeliness (information system to meet the scheduled requirements); (7) system reliability; 8) relations between information systems and users.

For any given network information system, the network information system with higher information search task-network information system adaptability can better meet the information search needs of users, so it will show higher resource utilization efficiency.

2. Credit Supervision: Default Terms and Guarantee Requirements

2.1 The Definition of Credit Supervision

Credit supervision refers to the restraint and control actions that the lender implements on the borrower in order to avoid the losses caused by improper use of funds and prevent possible credit risks in the process of credit contract performance. The implementor of credit supervision is the lender (bank) and the supervised is the borrower (enterprise). R.G. Rajan and a.winton argue that the supervision of companies applying for loans is an important function of Banks. In order to make the credit ability or debt performance ability of the borrowing enterprise can be brought into full play normally, the bank must design and work out loan contract which is helpful to improve its supervision and incentive effect on the credit performance ability of the enterprise [3]. Compared with short-term loans, Banks should strengthen the supervision of long-term loans. In the process of credit supervision, Banks should not only evaluate the information provided by enterprises applying for loans, but also actively collect first-hand information about the credit ability of enterprises.

In the process of credit supervision, the borrower, as the supervised person, will be constrained in the use of funds. For example, although high-risk projects that may bring higher returns are more attractive to enterprises, lenders may restrict enterprises' investment in high-risk projects for the purpose of risk aversion. On the other hand, the high return rate of high-risk projects may just be a lure, and the actual investment effect may not be beneficial to the enterprise. Therefore, it is wise to avoid and prevent such high-risk projects. For any enterprise, it is also in its own interest to treat investment risks carefully and prevent them effectively. In this sense, credit supervision not only helps the lender to prevent credit risks, but also helps to maintain the interests of the borrowing enterprises.

2.2 Forms of Credit Supervision

Credit supervision needs to be realized through certain supervision forms. In general, there are two forms of bank credit supervision for borrowing enterprises: one is camera supervision, the other is mandatory supervision. These two forms of supervision are not mutually exclusive or either-or, but can complement each other. When necessary, these two forms of supervision can be used simultaneously, both for camera supervision and mandatory supervision. The ultimate purpose of supervision is to encourage borrowing enterprises to abide by the credit contract and fulfill the responsibility of paying off all the loan principal and interest.

The so-called camera credit supervision refers to a form of supervision taken by the camera according to the conditions stipulated in the credit contract. In order to prevent the borrower from defaulting, the bank will set some specific default clauses in the credit contract. When the borrower appears, the situation described in the default clause, the bank has the right to take certain sanctions. Compulsory credit supervision refers to a form of supervision in which the assets of borrowing enterprises are legally compulsory according to the provisions of the credit contract. The most common form of compulsory credit supervision is credit guarantee.

From the time when the bank extends credit to the enterprise to the time when the enterprise performs its debts, credit supervision can be implemented throughout the existence of the credit contract. Of course, the initiative of credit supervision is in the hands of the bank, whether to implement supervision, when to implement supervision, what kind of supervision, these issues depend on the bank's decision. On the other hand, the credit supervision of the bank and the

confirmation of the credit ability of the enterprise can be combined together. Mandatory credit supervision can also be understood as the process of bank guarantee request to borrowing enterprises and guarantee provided by the enterprise is evaluated, confirm and control the process, whether the enterprise from mortgage assets and project profitability since the birth of credit capacity, or from a third party gain of the credit guarantee ability, its credit value must be received the recognition from the bank. The process of confirming enterprise credit value also belongs to the scope of credit supervision.

2.3 The Role of Credit Supervision

From the perspective of encouraging enterprises to abide by the credit contract commitments, the role played by the camera credit supervision and the mandatory credit supervision are not exactly the same, but have different emphases.

From the perspective of discretionary credit supervision, the default clause in the credit contract can make the repayment period of the loan more effective. In the credit contract, if the bank has the right to modify the loan contract or call in the loan when the loan company defaults, then the default clause can act as a “catalyst” to improve the flexibility and effectiveness of the credit contract. c. w. Smith and j. b. warner demonstrated that giving Banks some discretionary control in credit contracts helped reduce adverse selection and moral hazard of borrowers.

From the perspective of compulsory credit supervision, if the bank puts forward credit guarantee requirements to the borrowing enterprise at the same time of signing the credit contract, and the enterprise can also meet such requirements, then the establishment of guarantee can legally guarantee the bank's priority to dispose of the mortgaged assets of the enterprise [4]. Thus, when credit contracts are negotiated, Banks tend to prefer more guarantees, not the other way around, all things being equal. The purpose of the bank is to make the whole loan completely guaranteed with interest. In general, Banks are more eager to demand guarantees when business prospects are bad. In a given situation, the bank may make additional collateral demands on the lending company, probably based on private information the bank has obtained about the company, whether confirmed or not, indicating that the company is in financial crisis and facing liquidation. Therefore, the bank targeted loans to enterprises put forward the corresponding guarantee requirements in essence is to implement effective supervision.

Compared with short-term loans, Banks tend to put forward additional default clauses in long-term loans, which is also desirable and effective in practice. The precondition for Banks to adopt such a form of supervision is that credit contracts are concluded on the basis of sufficient information, and Banks do not need to pay high costs to obtain such information. But default clauses also restrict Banks to some extent, because it is generally inappropriate to act unilaterally unless the bank has sufficient information to prove that a company has breached a credit contract. In general, the addition of default clauses in long-term loan contracts can not only improve the incentive for enterprises to fulfill credit contracts, but also improve the incentive for Banks to supervise enterprises. Because, under the default clause, if a company reneges, it loses some of the rights it already has. On the other hand, if a bank abandons supervision, its loan earnings will also decrease. In this sense, the default clause plays an important role in the performance of credit contract.

From the perspective of guarantee, it is one of the core contents of credit guarantee and an important form of mandatory loan supervision to set up mortgage for specific assets of enterprises applying for loans and confirm their credit value. Guarantee the essential function of the compulsory credit supervision lies in: once the borrowing enterprise goes bankrupt, the mortgage that the bank has obtained for the specific assets can legally guarantee the bank's actual control of these assets, so as to reduce the losses caused by the enterprise's default to the bank. On the other hand, for the borrowing enterprise, if there is no default, then the specific assets that have been set up as collateral are still controlled and used by the enterprise, without affecting the production and operation activities of the enterprise. Therefore, this kind of compulsory credit supervision actually plays a function of encouraging the borrower to fulfill the contract and severely punishing the

default behavior.

3. Credit Performance Supervision Model

3.1 Basic Assumptions of the Model

Assume that credit financing has three timing points and two phases (as shown in figure 1).

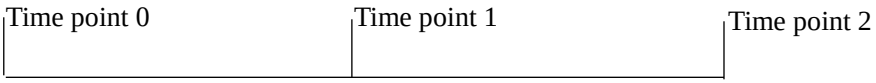

Figure1. Two stages of credit financing

At the point 0, the enterprise asks the bank for financing, hoping to put in a sum of capital of I, and set mortgage guarantee based on the income of its investment projects (there is no other additional guarantee form). At the time point 1, the business activities of the enterprise come to a conclusion. At this time, the success of the investment project can draw a preliminary conclusion, and the outside world can also observe the signal about the opportunity of the enterprise's success. Based on this signal, if the project assets of the enterprise are liquidated in the first stage, the residual value of the assets can be obtained as W1. If the liquidation is not carried out in the first stage, then the enterprise may succeed and get a cash flow R at time 2, or it may fail, and the cash flow in the failure is zero. In both cases of the second phase, the residual value of the enterprise project assets is W_2. Assuming$W_2 < W_2 < R + W_2$, the cost of confirming the enterprise cash flow and residual value of project assets is zero. All participants in the credit market are risk-neutral and expect zero return.

Suppose that the enterprise we want to observe is a corporate enterprise. According to the company law, the enterprise only assumes limited liability for its debts to its property. From the perspective of the enterprise, what it is concerned about is to make the financing arrangement of the enterprise best for itself. Even if liquidation is to be carried out, it should be carried out under the most favorable conditions for the enterprise.

3.2 Cost of Credit Performance Supervision

The key information of the model is the probability of success of the project operated by the enterprise at point 2. At time point 0, both the borrower and the borrower in the credit market believe that the probability of the success of this project is$P \in (0,1)$. At time point 1, the enterprise gets a more accurate signal theta (this is a private signal) about the chance of the project success, where $\theta \in (\theta_1, \theta_2)$ and $0 \ll \theta_1 \ll \theta_2 \ll 1$. We stipulate that the value of the signal is equal to the chance of success of the enterprise under the given signal. For ease of analysis, we assume that θ_1 and $\theta_2$are of equal value $P = (\theta_1 + \theta_2)/2$.

If outsiders (such as other investors who are not involved in the running of the business are allowed to monitor the business, they can also observe signals about the business's chances of success, but such monitoring costs g.

Running situation of the enterprise, on the other hand, although belong to private information, however, enterprise is a part of social economic activities, to its operating conditions will also know something about the outside world, as a result, signals about business project successfully opportunity theta objectively exists a public do not need to spend any costs can be obtained by noise signal (noisy signal). This public signal is called $\varphi$and has a valueφ_1 and φ_2. φ_1 for the real signal β conditional probability is$\frac{1}{2} < \beta < 1$.

3.3 Social Value of Performance Supervision and Liquidation Decision

In the enterprise performance supervision model, within the contract framework, the main goal of the enterprise is to raise funds from outside the enterprise to maximize the value of the

enterprise [5]. Due to conclude contracts may neither phi according to public signal, it is impossible toφ, according to the enterprise have the true signal in this way, the bank to liquidation of the enterprise only in the following two conditions is likely to happen: the first kind of circumstance is that the bank after observation can prove some confirmation of default has occurred; The second scenario is that the company can neither repay the loan at point 1 nor roll over the loan.

Now we analyze the social value of supervising enterprises and the optimal liquidation decision. Let q be the conditional probability of the enterprise's success at time point 1. When the bank considers the liquidation of the defaulted enterprises, the liquidation decision chosen should be beneficial to the society. The necessary and sufficient conditions for making such a decision are:$W_1 \geq qR + W_2$.

Suppose the probability of the bank making the optimal clearing decision isθ^*, then

$$q \leq (W_1 - W_2)/R$$

Enterprise value based on enterprise private information is $V_0[max\theta R + W_2, W_1]$, while enterprise value based on public information is$V_0[max\varphi R + W_2, W_1]$. Therefore, the social value (or the social value that is beneficial to the lending bank) of information based on enterprise liquidation is V, where

$$V_\varphi = V_0[max\theta R + W_2, W_1] - V_0[max\varphi R + W_2, W_1]$$

In a word, accurate information is helpful to improve the optimal decision-making level of Banks in making liquidation decisions or loan rolled-over decisions for enterprises, and also can improve the value of enterprises. When the probability of optimal liquidation decision is very small, the bank should not make liquidation decision on the enterprise [6]. However, when θ^* is very large, the bank should make a timely decision to implement the liquidation of the enterprise. In terms of θ^* averages, liquidation decisions are influenced by more accurate information about the business. If $\theta^*$is very close to P (the probability of project success that both lenders and borrowers agree on), information about the business outlook is likely to influence the bank's decision to clear or roll over loans, and the more accurate the information, the greater the impact.

4. Summary

In the absence of supervision, the actual repayment period of long-term loans with default clauses is always longer and longer, which shows that the default clauses without supervision are completely empty. However, if supervision is put in place, the situation will change immediately and loan repayment period may be shorter. Of course, credit supervision always has to pay a cost, and Banks should implement the supervision responsibility as soon as possible after weighing the costs and benefits. If Banks only rely on public information to take nominal so-called “supervision” actions without substantive supervision, then credit supervision will become a mere formality, which will not only limit the profitability of Banks themselves, but also not help the formation and improvement of enterprise credit ability.

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