

Credit Risk Assessment of Internet Financial Platforms Based on BP Neural Network

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ABSTRACT

Aiming at the problem of credit risk, this paper selects key data indicators to establish an index system combining with the factors affecting the credit risk of the platform. Python crawler software was used to obtain relevant data of net lending platforms, and the crawled data of more than 1000 platforms were preprocessed. Ninety-five platforms with complete data were selected to build a BP neural network risk assessment model. The BP neural network model is used to make an empirical analysis of the risks of online lending platforms by using the data obtained, and the evaluation method of this paper is compared with the rating method of online lending sky eye. The empirical results show that the error of BP neural network can be stable at about 0.5, and the accuracy rate of evaluation is as high as 95.45%, which is much higher than the accuracy rate of 44.21% of net loan platform. This paper provides decision support for the credit risk early warning of net loan platform.

KEYWORDS

BP Neural Network, Internet Financial Platform, Python Crawler, Risk Assessment

1. INTRODUCTION

Non-governmental finance promotes the development of China's economy and plays an important role in economic development. At present, the Internet financial platforms are engaged in abnormal competition. Due to the lack of market supervision over online lending platforms, the interest rates of online lending cannot be adjusted and controlled steadily, and the platforms lack risk awareness, which leads to the situation that the platforms cannot continue to develop or even go bankrupt. Starting from the credit risk assessment of the platform, this paper studies how the platform can accurately understand its own risks and make timely responses. "Sky Eye" adopts the method of combining expert rating and regression analysis to divide the evaluation results into four grades: "A+", "A", "B+" and "B". "Wangdaizhijia" divides the platform data into 9 points, and obtains different scores according to different weight weights customized by experts. The score is within the interval of $[0,1]$, and the platform closer to 1 represents a low credit risk. Credit evaluation has become an important means for financial institutions to distinguish between "bad" and "good".

Extensive supervised machine learning algorithms have been successfully applied to credit scoring (Wang et al., 2019). Jianhuiyang and Dongshengluo mainly studied the classification of online loan platforms, analyzed the disadvantages of traditional SVM algorithm, and improved it into Adaboost SVM algorithm to classify platforms to improve the accuracy of the model (Yang & Luo, 2017). Chenqijiang et al combined with the traditional loan selection criteria of commercial banks and based on the Logit model, provided a reference way for investors to review information, judge the situation of borrowers through classification, and reduce investment risks (Jiang & Zhou, 2019). However, in dealing with the classification problem, they could not change the trend that the accuracy rate of the model would decline sharply once the number of indicators became more. YuejinZhang et al combined the data of PaiDai and adopted the decision tree method to construct the credit score of the platform, with the main purpose of alleviating the information asymmetry between borrowers and borrowers. However, the data indicators adopted were too few, the evaluation dimension was not high, and the data accuracy was only higher than that of the multiple regression model (Zhang et al., 2016). From the perspective of loan evaluation and from the perspective of the lender, Xinye et al believed that the reduction of credit risk depends on whether higher profits can be obtained. They used the random forest optimization algorithm to obtain profit score and made suggestions based on the results. The method and perspective are quite novel, but this method is not applicable to the online lending platform with dynamic changes and bidding system (Ye et al., 2018). Yugao et al used the improved SBM model of DEA to study the business activities and growth efficiency of 19 online lending platforms and found that there were contradictions between the growth and operation efficiency of the industry (Gao et al., 2018). In the credit risk assessment of online lending platforms, Shenfeng et al proposed an optimization method of BP neural network in credit risk assessment based on the perspective of individual credit risk (Shen et al., 2019). Guansandu et al introduced the genetic algorithm (GA) into

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