

x5 (Project E) = RMB 55,520 yuan.

The target benefit (investment recovery): $f = \text{RMB } 231,900$ yuan (2015);

The average investment recovery rate $= 23.19 \div 72.3 = 0.468$;

The calculated results show that: the investment benefit is higher in 2015 than in 2014 and the average investment return rate has increased by 3.23%.

4. CONCLUSIONS

(1) Despite the extensive application in various fields of the society, the general linear programming still has many limitations. The problem can be resolved to a certain extent by the linear programming based on gray prediction, which is more scientific, advanced and practical than general linear programming. Firstly, the constraint value is time-variant; secondly, the model's coefficient changes in a certain range; thirdly, the objective function can be a relative optimization value; finally, the model provides a lot of useful information, leaving a high degree of freedom for decision-makers.

(2) GM (1,1) is the most commonly used gray prediction model. This paper constructs a gray prediction model to predict the future technical progress of an enterprise. The accuracy test demonstrates that the proposed gray model has high prediction accuracy and can be used to forecast the technical progress of the enterprise. Besides, it is discovered that the enterprise will make more and more technical progress in the coming years.

(3) The gray linear programming model can be applied to economic development and enterprise management. The establishment of a predictive gray linear programming model helps predict and compare the programs proposed by different departments of the enterprise, so as to select the most suitable program for decision-makers.

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