

## Research Article

### Theory of Regression Apple Professional Cooperation Organization Research

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**Abstract:** In view of the enterprise ecological apple manor a variety of problems of existence, put forward to the enterprise management transformation, achieve enterprise, collective, individual integrated operation management and the use of regression mathematical model on apple professional cooperation organization analysis. Through the example, Apple professional economic cooperation organization innovation model of the input output ratio than the rural economic cooperation organization is much higher, the conclusion and the utility of the marginal analysis theory is contrary to. Conclusion the apple professional economic cooperation organization of research and development has a certain reference value.

**Keywords:** Apple economic cooperation organization, ecological manor, one element regression mathematical model, organizational innovation model

#### INTRODUCTION

Chinese scholars on rural Economic Cooperation Organization (OECD) classification methods, some scholars according to the professional economic cooperation organization are the professional cooperative and community collaboration organizations. Some scholars on the basis of function will be divided into sales of agricultural products, agricultural supply type, the integration of production and marketing management, technical services. Some scholars on the basis of cooperative economic organizations have set up without relying on divided it into existence which relies on farmer specialized cooperative organization and does not exist on the farmer specialized cooperative organization. Some are in accordance with industry classification (Xu *et al.*, 2008).

Chinese rural cooperative economic organization is the development trend, one is to maintain the OECD nature, continuous development and improvement; another by the OECD to joint-stock cooperative system type. OECD to share-holding cooperation type evolution, because the OECD capital to face challenges, one person one vote and capital return principle of limitation restricts the ability to attract capital and adopts share collaboration to make, can attract additional capital and not a member of the capital, some Share Cooperation Organization to company enterprise change. Stock cooperation system enterprise is determined by the structure of its property right and its operation mechanism determined. The first is a joint-stock cooperative enterprises with the OECD, allow capital to participate in allocate, also the OECD to

joint-stock cooperative enterprises motivation. But joint-stock cooperative enterprises equity exists not transferable, not transactions, cannot be realized, the promotion of this kind of mode is faced with great difficulties. The second is due to the clear property rights, thus forming a kind of staff incentive mechanism of competition. Because the ownership of (property) for the right to operate the constraint, incentive is not full, capital interest is not completely guarantee. The property relationship in the short-term capital accumulation problem has not been revealed, but the long term it is very difficult to continue to grow and develop. These two factors ultimately led to it's to the capital as the core of the company system enterprises, it can be seen from the enterprise ecological apple manor development reform process by empirical (Zhao and Pei, 2009).

In this study, based on the enterprise ecological apple manor development reform process, using regression theory on apple professional cooperation organization modeling, through the empirical analysis, comparative enterprise ecological apple manor and other OECD input-output ratio, thus enterprises ecological Apple manor provides a reform model of innovation development.

Along with the traditional OECD development, the contradiction between its environments has become increasingly prominent. Green Apple Planting is in the person of complete province apple production based on the common problems in the classification analysis, analyzed us to save the apple production is facing difficulties and potential crisis. Introduce blindly breed, enlarge planting area, lack of long term planning, backward management level, fruit quality is poor and

exceed the standard use of pesticides and fertilizers, will bring huge harm to malic production and ultimately damage the interests of the producers (Guo, 2005).

#### “COMPANY+OECD+FARMER” MODE

According to the apple professional cooperation organization problems, put in by constructing ecological apple manor, on the OECD business transformation. The specific scheme is, enterprises with capital form of holding apple manor, in order to achieve the goal of enterprise operation, namely in the "company + OECD + farmer" is realized on the basis of the model of organizational innovation, enterprise, collective, individual integrated management. Enterprises as the holding have decision-making power; OECD member can participate in daily operation. Fruit grower will own orchard in the form of shares to join the enterprise ecological apple manor (that is, to the capital as the core of the company system enterprises), the patterns of the largest apple manor ownership innovation lies in innovation. If the enterprise can be accounted for 1/3 of the shares, the remaining members occupy the remaining shares, the enterprise through the management of apple manor for enterprises and for members only according to their own individual willingness and ability to compete for management positions or operating post. The model does not involve complex land ownership land rotary sensitive questions, just for the orchard for the right to operate the enterprise operation, straighten out the restricting agriculture land ownership dispute, to maximize the mobilization of enterprises, collective and individual initiative, liberated productivity, overcomes the rural economic cooperation organization all the disadvantages, to achieve a true sense of unity, unified production technical services, unified agricultural support, unified market, unified capital operation, unified brand image, unified training, unified quality supervision, unified product R&D, unified logistics distribution (Zheng, 2008):

Enterprise ecological apple manor has the following special functions:

- Scale integrated functional, enterprise advantage into fruit grower specialization function of organization, implementation dimensions is changed manage, integrated operation, economic considerations.
- Technology transfer function, advanced cultivation techniques for fruit trees through the enterprise ecological apple manor, transfer and translate into productivity.
- To share the wisdom of function, will be the advanced business management concept, through the enterprise ecological Apple manor executive, sharing labor wisdom achievement.
- Collection of information function, build up information platform, realize the sharing of resources.

- Synchronous operation function, according to the company's mode of operation, realizes the synchronous operation of function.
- The ability of complementary function, enterprise resources and production labor and land resources combination, produce benefit maximization principle.
- Fruit industry development function, through the enterprise ecological apple manor drive action, vigorously develop new technology, new achievement of science and technology garden.
- The integrity of the cultivation function, through the enterprise credit culture, the single fruit grower random behavior planning for the enterprise behavior, thus boosting the social credibility enhancement.
- The organization function, fruit industry in more than 20 apples Production County has established the enterprise ecological apple manor, gradually solved the problem of produce and sale.
- the function of sales, enterprises ecological apple manor mode, its advantage lies in the sales of the last link of market main body, the more concentrated and the ability to open up the market is greatly improved, the grasp of the market more sensitive (Xu, 2006).

#### ANALYSIS METHODOLOGY

The so-called regression analysis, is to a large amount of observation data on the basis of using the methods of mathematical statistics, establish the dependent and independent variables in the regression relationship between the expressions of function (called regression equation).

**Regression analysis:** When the study of causation involving only the dependent variable and one independent variable, called a regression analysis. Linear regression is a thing to develop independent and dependent variables are the simple linear relationship between the single factors, its model can be represented as a type (1):

$$Y = \alpha + b.X \quad (1)$$

where,

Y = The dependent variable

X = The independent variable

A = A constant

B = The regression coefficient

Here we use a regression model analysis and validation of the OECD Model, enterprise innovation mode to output effect manor. In the OECD investment proportion and the proportion of investment in enterprise Xs manor Xt as independent variables, the output value of Yi as the dependent variable, to establish a regression mathematical model; Due to the numerical variables is relatively large, the smaller value

Table 1: Apple professional cooperation organization benefit analysis table Yuan

Year	Output	Fixed assets	Flow of funds	Management cost
2008	117517.5	11119.5	6525	1798.5
2009	123102	12241.5	6136.5	1890
2010	134104.5	13419	6354	2109

Payments to every 10 ha average, according to = 15 acres/ha conversion; the same following

Table 2: The enterprise ecological apple manor benefit analysis Yuan

Year	Output	Fixed assets	Flow of funds	Management cost
2008	131850	7935	4845	510
2009	139500	8310	4980	525
2010	149400	8850	5655	585

of the independent variable, the equation for the normalization, is transformed into a linear function of the logarithm; Using Eviews on 1~2 data calculation, are established, the proportion of investment enterprises OECD manor and output correlation regression equation formula (2) ~ (3) (Table 1 and 2):

$$\ln Y_s = 16.87002 - 4.721530 X_s, R^2 = 0.729132, F = 34.99378 \quad (2)$$

$$\ln Y_t = 11.73733 - 6.867947 X_t, R^2 = 0.291875, F = 5.35835 \quad (3)$$

From the type (2) regression results show that the coefficient of determination, model  $R^2 = 0.729132$ ,  $F = 34.99378$ , a regression equation fitting degree better. Use of type (2) estimates, the OECD investment proportion changes on the value influence the results are as follows: the OECD investment proportion declined by 1% points each, output growth of 4.72%. This proved difficult to input into the OECD.

From (3) a regression model of the coefficient of determination results,  $R^2 = 0.291875$ ,  $F = 5.35835$ , equation of overall significance although weaker, but also passed the test. Use of type (3) calculates the proportion of investment; enterprise manor changes on production value influence the results as follows: the enterprise manor into the weighting of each increase of 1% points, output growth of 6.87%. This proved that enterprise Apple manor mode input and output ratio is much higher than the OECD model.

From the results of empirical analysis, output growth depends largely on the apple professional organizational innovation model. From the enterprise Apple manor patterns can be seen, the proportion of investment rise to output growth has positive role; secondly, this mode to reduce operating costs, management costs can play the role to get instant results and output growth than the OECD Model increasing almost ten times. Why small, reduce investment will increase value, while the large scale will be vice. This conclusion contradicts the common sense of people, especially the utility of the theory of marginal analysis. This is a description of the author consider the problem of deeper problems and analysis the problem of deep administrative levels is more important.

## RESULTS AND DISCUSSION

Some scholars put forward rural economic cooperative organization in the "private, civilian canal, civilian be benefited" three big principles. The study put forward "the enterprise, business management, doubles benefit (enterprises, fruit grower)" principle of the establishment of enterprise ecological Apple manor new concept.

Enterprise ecological Apple manor is to advance fruit industry the important carrier of industrialization of fruit industry industrialization, the core issue is to establish reasonable interest coupling mechanism. Cooperative organization and leading enterprises are the important force in fruit tissue. Through bibcock enterprise and professional cooperation organization organic union, form a close interest connection mechanism. Carry out "company + cooperation + farmer" the innovation of organization management mode. In bibcock enterprise alone plays a role in the local and actively guides the formation of the economic cooperation organization and actively meets the radiate of bibcock enterprise. In the equal voluntary, mutual benefit on the basis of a joint, in order to increase fruit production management level of organization, improve fruit industry specialization and fruit commercialization level. The positive coordination of agricultural economic cooperative organization in enterprise equity, enjoy enterprise synergism, increase farmers.

The apple producing areas and advocate sell an area representative of the leading enterprises to carry out research and in-depth interviews, with a regression model analysis and empirical method based on apple industry, leading enterprises organizational innovation model of input-output analysis, the conclusion is, the OECD Model difficult to input, output drop but rise and shoddy, with bad generation and become inevitable. But the enterprise manor mode input-output ratio is ten times of the OECD model. Through the model assumptions and data collection, in the original model and constantly revised and improved on the basis of the apple industry, eventually leading enterprises organizational innovation model of internal motivation of positioning in the enterprise strategy adjustment, the scale of development and cultural change, external cause of positioning in the technology to promote, market demand and government regulation. Based on the test data, it proved that this classification method is scientific and feasible (Guan and Fu, 2000).

## CONCLUSION

Selecting two kinds of Rural Economic Cooperation Organization (Enterprise Ecological Apple manor, apple Professional Economic Cooperation Organization), build fruit production input and output database, calculation and quantitative analysis.

Quantitative analysis using the authority of the SPSS 14.0, i.e., a linear regression analysis method, defines the significant test standards are  $a = 16.87002$  or  $a = 11.73733$ . Its main purpose is through the sample regression inference in general. Therefore, the sample data conforms to the specifications, deciding whether accurate inference. The so-called reward rate (returns to scale), refers to all production inputs in the same percentage change in output rate. When all the input factors of production rate increased 1%, if the output has increased 1%, have fixed ratio compensation; if the output increase of greater than 1%, that produced scale economy; if the increase in yield less than 1%, that produced less economic. According to the proportion of compensation principle, the OECD investment proportion declined by 1% points each, output growth of 4.72%, the weighting of each enterprise estate investment increased 1% points, output growth of 6.87%.

According to the law of diminishing marginal returns, in the technology unchanged, other production factors input is constant, increasing some factor of production inputs, when the investment of factor of production capacity has increased by more than a certain critical point, the factor of production inputs, the total output increment will gradually reduce. Based on the practice of input-output critical point is difficult to define, this thesis is a innovative research, through the innovation of rural eco business model empirical analysis, enterprise manor mode output growth than the OECD model output value increasing almost ten times, for the pattern in the area of fruit to find theoretical basis to promote the development of.

In recent years, Shaanxi province apple industry chain development and organization system construction progress, especially the market of network intermediary service organizations, for farmers

establishing professional cooperation platform, but compared with the advanced, either postpartum link development, bibcock enterprise quantity quality, fruit grower organization degree, the role of industry associations to play, especially to produce supply and marketing, trade workers and peasants organization development still exists a huge gap (Zhao, 2007).

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