



D

Economics

R&D INVESTMENT, INNOVATION EFFICIENCY, VALUE CREATION AND DIGITAL TRANSFORMATION OF LARGE ENTERPRISES IN CHINA— —A MODERATED MEDIATION MODEL

Dazhi Yue^{1*} and Shuanping Gao²

^{1,2}Faculty of Business school, Xiamen Institute of Technology, China

*Corresponding author, E-mail: 2893207180@qq.com

Abstract

In recent years, the R&D investment and innovation efficiency of China's large enterprises have different development. It is of great significance for the high-quality development of China's large enterprises to study the relationship between the two and analyze the mechanism and degree of their influence on enterprise value creation under different levels of economic development. Through literature review, this paper puts forward some theoretical assumptions about the relationship among R&D investment, innovation efficiency, and enterprise value creation of large enterprises at the present stage and the adjustment of digitalization degree. On this basis, the provincial panel data from 2011 to 2020 were used to construct a model to test these hypotheses. The results show that R&D investment is beneficial to improve firm value creation, and innovation efficiency plays a part in the mediating variable between R&D investment and value creation due to the positive correlation between R&D investment and innovation efficiency. The degree of digitization positively regulates the first half path of the mediation process, but the regulation effect of the second half path and the direct path is not obvious at this stage.

Keywords: R&D Investment, Innovation Efficiency, Enterprise Value, Digital Transformation

Introduction

Large enterprises play a backbone support role in technological innovation and entrepreneurial development. After the Chinese government launched the white paper “Made in China 2025” in 2015, the goals and tasks of industrial enterprises were further defined, and their innovation-driven and entrepreneurial incubation effects are the results of the implementation of the national strategy of “innovation-driven development”. Large companies rely on their resource endowments, technological advantages, and innovation capabilities to drive various forms of R&D investment activities within and outside their organizational boundaries. In recent years, with the introduction of the national Industry 4.0 industry paradigm, major provinces and cities have started to attract the inflow of high-tech talents and driven by the policy, the R&D investment of enterprises has shown an upward trend. Figure 1 presents the value of R&D investment in China, rising from RMB

868.7 billion in 2011 to RMB 236.38 billion in 2020. The increase in R&D investment can bring into play the innovation-driven effect of large enterprises, improve the innovation efficiency of the enterprises themselves through their resource endowment, technological advantages, and innovation capabilities, and drive the innovation and entrepreneurship development of the surrounding upstream and downstream enterprises through the business incubation effect. At the same time, R&D investment activities of large companies can also show negative effects such as organizational rigidity and innovation inertia, which are not conducive to the efficiency of corporate innovation.

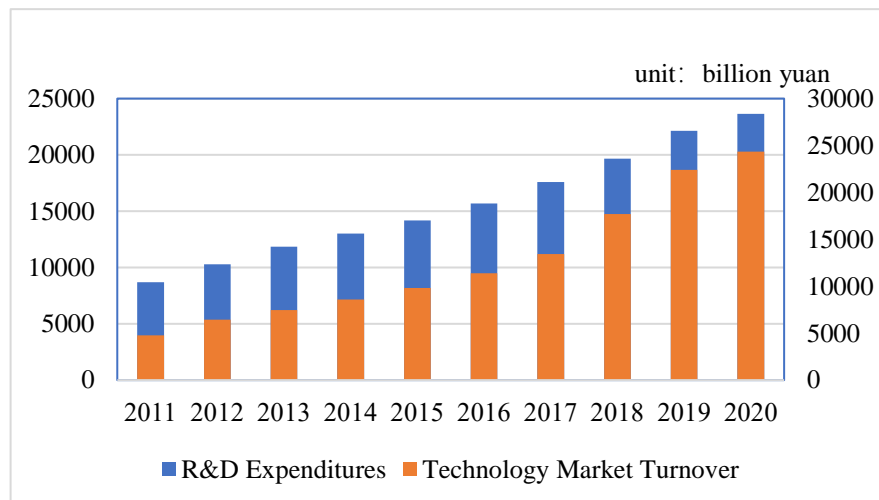


Figure 1: China's R&D expenditure and technology market turnover from 2011 to 2020

While R&D investment is increasing, the issue of corporate innovation efficiency in China cannot be ignored. As can be seen from Figure 1, the technology market turnover shows the growth of the total amount year by year, but due to the different levels of economic development at the provincial level and the uneven spatial distribution of large enterprises, resulting in large variability of innovation efficiency. At the same time, there is no overall but significant linear relationship between firms' R&D expenditure and technology market efficiency at the micro-level. Therefore, figure 1 can be divided into three stages: the first stage is a linear relationship between R&D expenditure of enterprises and technology market efficiency in 2011-2017, which basically grows in parallel. Phase 2: in 2017-2019 the gap between corporate R&D funding investment and technology market efficiency becomes smaller, with technology market turnover increasing faster and rapidly equalizing with R&D funding investment. Phase 3: In 2019-2020, the technology market turnover is slightly higher than the R&D funding investment.

Large firms' upfront R&D investment and innovation efficiency are closely related to firm value creation. It is better at improving innovation than at disruptive, disruptive innovation. However, along with the impact of emerging technology developments such as digital transformation and national policy changes, corporate entrepreneurship has begun to undergo a fundamental shift in

organizational form and strategic behavior. Large enterprises are constantly trying to promote various forms of corporate entrepreneurial activities inside and outside organizational boundaries based on technological innovation. Moreover, large enterprises with a central position can play a key leading role in related entrepreneurial activities. This process inevitably brings differentiation and lags in value creation but is growth-oriented in overall performance. Figure 2 presents the cumulative new product sales revenue and the number of R&D invention patents for large Chinese companies between 2011 and 2020. As can be seen from the graph, both have trend growth from 2011-to 2020, but after 2015 the growth is more pronounced for both, especially for new product sales revenue.

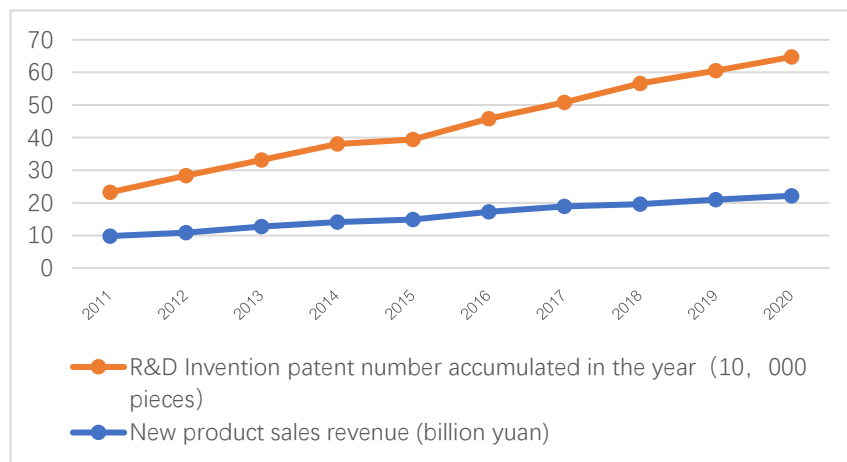


Figure 2: New product sales revenue and R&D patents from 2011 to 2020

In summary, this paper uses provincial panel data and applies a moderated mediating effect model to analyze the enabling effect of digitalization degree on innovation efficiency of large enterprises and incorporates innovation efficiency into the study of the relationship between R&D input and value creation to explore the mechanism of the role of digitalization degree in enabling innovation efficiency and value creation of large enterprises from the mediating and moderating effects. Compared to the existing studies in the literature, the contribution of this paper mainly lies in. First, a mediated quantitative empirical analysis of the relationship between R&D investment and value creation in large enterprises is conducted in the context of China's new normal industrial economy. The conclusions reveal the positive effect of the degree of digitization empowering innovation efficiency and the phenomenon that the degree of digitization weakens the positive effect of value creation between provinces, providing empirical evidence of the degree of digitization empowering value creation at the provincial level and compensating for the lack of quantitative analysis in this area. Second, the inclusion of digitalization degree in the research framework of mediating effects explores the direct path, first half path, and second half path effects of R&D investment and value creation in large firms, enriching the research on the relationship between R&D investment and value creation in large firms. Finally, combined with the findings of the study, policy

insights on how to use the degree of digitalization to empower large enterprises are proposed to provide a basic reference for digital transformation and high-quality development of large enterprises.

1. Literature Review And Proposed Hypothesis

1.1 R&D investment and innovation efficiency

Xiao and Lin (2019) argue that the problem of corporate innovation is not just a short-term R&D investment, but also a long-term continuous investment process with continuity. There are certain efficiency differences among listed companies in different industries, which are affected by the "crowding out" effect of corporate financialization in different life cycle stages. Shen and Chen (2021) concluded that the R&D smoothing behavior of firms in different life cycles differed, with significant R&D smoothing in maturing firms and insignificant in growing and declining firms. Meanwhile, the level of industry competition can significantly moderate the R&D smoothing behavior of firms, and the smoothing effect of cash holdings on R&D investment becomes more significant as the level of industry competition increases. By decomposing the technical efficiency of enterprises, Yanping Zhang (2014) found that although SOEs experienced a long period of efficient innovation, they became inefficient in 2012 during the study period, and the causes of inefficiency were the decline in scale efficiency and diminishing returns to entry scale. From the perspective of provincial comparisons, Shuaiguan Song (2013) reveals that increased investment in innovative talents and enhanced cooperation between industry, academia, and research can moderately compensate for the inefficiency of technological innovation in large enterprises. Yuan, (2021) argued that the innovation efficiency brought by technological innovation investment in national high-tech zones showed a continuous growth and spatial imbalance during the sample period. Some scholars have also addressed this issue from a national policy perspective, alike Chen, Liu, Serrato, and Xu,(2021)found that the government gave significant tax breaks to firms that invested in R&D above a certain threshold or "grade", and that firms' R&D expenditures increased significantly, partly due to the relabeling of costs as R&D. Relabeling accounted for 24.2 percent of reported R&D while doubling R&D would increase productivity by 9 percent. This suggests that firm selection and relabeling determine the cost-effectiveness of stimulating R&D, i.e., modest spillover effects justify increased innovation from a welfare perspective. Xu, Wang and Liu (2021) concluded that government R&D subsidies stimulate firms' R&D investment but have no significant effect on innovation performance, while R&D investment has a significant effect on innovation performance. In addition, the study found a positive effect of R&D investment on the innovation performance of SOEs and firms with R&D staff.

A review of the above literature reveals that most studies conclude that R&D investment leads to an increase in firm innovation efficiency. Specifically, on the one hand, R&D investment can improve the added value of new products and enhance the level of consumer recognition of new products as well as the conversion rate of the technology market. On the other hand, digitization

reduces the transaction and contractual costs and innovation perception differences in the corporate innovation process, while the process of R&D investment in large companies has a cumulative scale, so that with continuous investment in the first period leads to a rapid increase in innovation efficiency in a later period.

Therefore, hypothesis 1 is proposed.

Hypothesis 1: R&D investment will improve innovation efficiency.

1.2 R&D investment and enterprise value creation

Donglian Wu (2016) argues that the current large retail enterprises in China have seen greater growth in both traditional and Internet trading models, but the growth rate of the Internet trading model is significantly higher than that of the traditional trading platform. In addition, while traditional trading methods still account for a large share of the total transaction volume of large retailers, the share of Internet-based trading models is also growing rapidly. In contrast, Li, Shen, (2009) concluded that there is no significant effect of R&D investment on the economic rate of return for either state-owned or non-state-owned enterprises. Research shows that the role of corporate R&D is only to promote technological progress, which is not reflected in changes in profitability, and therefore technological achievements are not successfully transformed into material productivity. The current research has different findings on the relationship between R&D investment and value creation depending on the heterogeneity of large firms.

Other scholars have explored the relationship between the two from both perspectives; for example, Ye (2010) argues that different approaches to China's economic transformation (gradual, decentralized, and experimental) have created different types of large enterprises. These large enterprises can be briefly categorized into five types: (1) enterprises made possible by business diversification; (2) large enterprises made possible by regional diversification; (3) large enterprises entrusted with the management of several single enterprises; (4) large enterprises transformed by governmental functions; and (5) large enterprises made possible by mergers and reorganizations. While different types of corporate headquarters need to create value from matching business portfolios and management models, there are differences due to the causes of large corporations and their types. This determines the differences in their business mix and management models and their matching, and thus their approaches to value creation. Similar studies include Solomon ^[11], where the impact of R&D on productivity is differentiated across different types of firms, showing a non-linear relationship, based on which hypothesis 2 is proposed in this paper.

Hypothesis 2a: R&D investment expands firm value creation.

Hypothesis 2b: R&D investment weakens firm value creation.

1.3 Corporate Innovation Efficiency and Corporate Value Creation

Yuan, Wu and Zhang (2017) concluded that environmental factors, scale efficiency, and random error significantly impact the innovation efficiency of large manufacturing firms in China and become the main factors limiting innovation efficiency. It is also noted that the average innovation efficiency of large manufacturing enterprises is highest in the eastern region, while it is relatively low in the central and western regions. In most provinces (cities) large manufacturing enterprises innovation efficiency there is room for four-dimensional improvement. Ding, Zhao and Hong, (2013) concluded that large local enterprises show large variability in technological innovation efficiency, and the reasons for the differences can be explored from three perspectives, including enterprise size, human resource status, and research activities. In formulating innovation policies, local governments should not simply take the scale of enterprises as the standard but should improve the quality of enterprise human resources as the core goal and improve the "government-enterprise-university" innovation network as the core means, to enhance the technological innovation capability of enterprises through collaborative innovation. And Meng Xu studied that innovation efficiency, in addition to showing spatial gradient differences, also pointed out that the overall relative differences in the level of innovation efficiency of high-tech industries in China showed a slight downward trend.

Synthesizing current research on firm innovation efficiency and firm value creation, the impact relations between the two are similarly undetermined. On the one hand, the improvement of enterprise innovation efficiency will lead to the increase of R&D expenditure of large enterprises, especially in the introduction of scientific and technological talents, the establishment and management of teams, etc., which will reduce the expansion of enterprise investment scale and affect their value creation. On the other hand, large enterprises, due to the existence of regional economic development differences, regional economic development has more preferential policies and support efforts. Therefore, the more efficient a firm's innovation is the more likely it is to receive government support, which in turn will lead to an increase in firm value creation. Based on this, hypothesis 3 is proposed.

Hypothesis 3a: Firm innovation efficiency expands firm value creation.

Hypothesis 3b: Firm innovation efficiency decreases firm value creation.

1.4 The mediating role of innovation efficiency

In summary, the above analysis shows that both corporate R&D investment and innovation efficiency have important effects on firm value creation, and corporate R&D investment leads to the improvement of corporate innovation efficiency. Specifically, the impact of corporate R&D investment on value creation is partly transmitted through corporate innovation efficiency as a mediating variable, i.e., corporate R&D investment leads to the improvement of innovation efficiency at the corporate level, and the improvement of corporate innovation efficiency leads to the increase of corporate value creation at the consumer market level. The organic combination of these two

processes forms a virtuous interaction between continuous corporate R&D investment and value creation. Therefore, hypothesis 4 is proposed.

Hypothesis 4: Innovation efficiency plays a partially mediating role between R&D inputs and value creation.

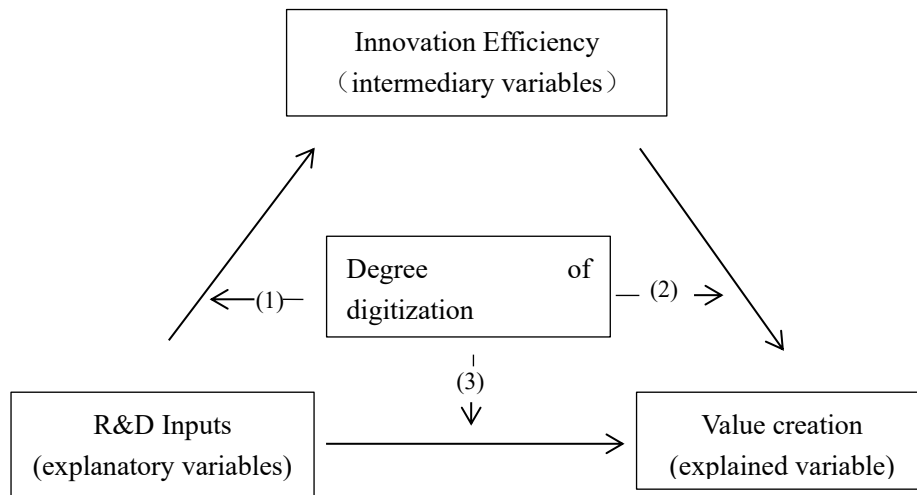
1.5 Moderating role of the level of digital trade development

Zhang, Shen, and Xue, (2021) argued that large enterprises assume an important role in entrepreneurial activities in the digital economy, and that various actors coexist and achieve value creation in a digital technology-driven, diversified enterprise ecology and platform-based environment. Yu, Liu, and Zhuang, (2021) concluded that Internet development significantly promotes technological innovation, both patent data and urban innovation index. At the same time, Internet development accelerates the depreciation rate of patents, conducive to improving the update rate of innovation knowledge; Internet development accelerates the dissemination of information, which enhances the domestic and foreign citations of patents and significantly increases the spillover of innovation knowledge.

It follows that the mechanistic relationship between R&D investment, innovation efficiency, and value creation in large firms in the context of the digital economy is different from that in the context of the traditional economy. In this paper, hypothesis 5 is formulated using the degree of digitalization as a moderating variable.

Hypothesis 5: The degree of digitization moderates the mediating effect between R&D investment and value creation.

In summary, it is argued that innovation efficiency plays a partially mediating role between R&D inputs and value creation, and this mediating role is moderated by the level of digitalization development. Accordingly, this theoretical model to be tested can be represented in Figure 3. In the figure, there are both mediating and moderating effects. Among them, the mediating effect is expressed in the fact that innovation efficiency plays a partial effect between R&D input and value creation; while the moderating effect is expressed in the direct moderating effect of R&D input on value creation and the indirect moderating effect of the first half of the path (from R&D input to innovation efficiency) and the second half of the path (from innovation efficiency to value creation).



Picture 3: Theoretical model to be tested

2. Study design

2.1 Source and processing of data

The sample of this paper is the panel data of 30 provincial-level administrative regions in China (excluding Hong Kong, Macao, Taiwan, and Jilin) from 2011 to 2020. The data are obtained from the National Bureau of Statistics website, the CSMAR database, and data from the Digital Finance Research Center of Peking University. The variables used in this paper are shown in Table 1.

2.1.1 Explanatory variable: value creation of large firms (valc)

According to Wang, (2015), the value creation of large enterprises usually indicates the innovation output of enterprises, which can be measured by the following three indicators: the number of patent applications per capita, the number of patent inventions per capita, and the ratio of new product sales revenue (new product sales revenue/enterprise main business input). According to Yu,Wang, (2021), economic development should not only focus on the improvement of "quantity", but also on the improvement of "quality", and the innovation output of enterprises is expressed by dividing the technology market turnover by the regional GDP. The value creation of large enterprises in this paper considers both the impact of new product sales revenue and the impact of regional GDP. Therefore, the value creation of enterprises is expressed by dividing the revenue of new product sales by the regional GDP.

2.1.2 Core explanatory variables, mediating variables, and moderating variables

R&D input is the core explanatory variable in this paper, which is represented using R&D expenditure/regional GDP. According to the hypothesis, innovation efficiency is the mediating variable between R&D input and firm value creation, and it is represented in this paper using technology market turnover/regional GDP. According to the hypothesis, the degree of digitalization

brings new models and business opportunities to enterprises, so the digital transformation is used to moderate the above mediating mechanism.

2.1.3 Control variables

For the selection of control variables, a reference was made to the selection of Wang ,(2015),Yu,Wang,(2021) In order to avoid obvious multicollinearity among the indicators, four indicators, namely fee profit rate, patent application cost rate, patent invention efficiency, and trade dependence, were screened as control variables to measure the economic and enterprise characteristics of different regions.

Table 1: Variable names and definitions

Variable abbreviations	Variable Name	Variable Definition
valc	Value Creation	New Product Sales Revenue / Gross Regional Product
r&di	R&D investment	R&D expenditure/regional GDP
inne	Innovation Efficiency	Technology Market Turnover/Regional GDP
dfi	Digital Financialization	Digitization degree/general digital finance index
exm	Expense Margin	Industrial Cost Margin
pacr	Patent Application Cost Ratio	R&D expenditure/number of patent applications
pie	Patent Invention Efficiency	Number of valid invention patents/number of patent inventions
trd	Trade Dependence	Total import and export/regional GDP

2.2 Regression Model Design

In the mediating effect model with multiple tests, one of the widely used methods is the sequential test method. Therefore, this method will also be used in this paper to test whether firm innovation efficiency is a mediating variable for R&D investment to affect firm value creation. Also, this method will be used to test the moderating effect of the degree of digitalization in this process. To this end, the model test in this paper can be carried out in two stages as follows.

In the first stage, the mediating effect of innovation efficiency between R&D input and firm value creation is tested. Where valc is firm value creation, r&di is firm R&D input, inne is firm innovation efficiency, and controls represent control variables. The model is set as :

$$\ln valc = \alpha_1 + \beta_1 \cdot r \& di + \eta_1 \cdot controls + \varepsilon \quad (1)$$

$$\ln inne = \alpha_2 + \beta_2 \cdot r \& di + \eta_2 \cdot controls + \varepsilon \quad (2)$$

$$\ln valc = \alpha_3 + \beta_3 \cdot r \& di + \gamma_3 \cdot inne + \eta_3 \cdot controls + \varepsilon \quad (3)$$

Among them, model equation (1) tests whether the effect of corporate R&D investment on corporate value creation is significant; model equation (2) tests whether the effect of corporate R&D investment on corporate innovation efficiency mediating variables is significant; model equation (3) tests whether the effect of corporate innovation efficiency mediating variables on corporate value creation is significant after controlling for the effect of corporate R&D investment.

In the second stage, the moderating effect of the degree of digitization on the relationship between R&D investment and the value creation of the firm is tested. Specifically, the existence of three moderating effects between R&D inputs and innovation efficiency, between innovation efficiency and value creation, and between R&D inputs and value creation is tested. To better interpret the model coefficients, the data of R&D input, innovation efficiency, and value creation are centered on testing the existence of such moderating effects through the following three regression models. Where c_valc , $c_r \& di$, and c_inne denote the value creation, R&D input, and innovation efficiency of the firms after centralization, respectively.

$$\ln valc = \alpha_4 + \beta_4 \cdot c_r \& di + \delta_4 \cdot c_dfi + \varphi_4 \cdot c_r \& di \cdot c_dfi + \eta_4 \cdot controls + \varepsilon \quad (4)$$

$$\ln inne = \alpha_5 + \beta_5 \cdot c_r \& di + \delta_5 \cdot c_dfi + \varphi_5 \cdot c_r \& di \cdot c_dfi + \eta_5 \cdot controls + \varepsilon \quad (5)$$

$$\ln valc = \alpha_6 + \beta_6 \cdot c_r \& di + \gamma_6 \cdot c_inne + \delta_6 \cdot c_dfi + \varphi_6 \cdot c_r \& di \cdot c_dfi + \lambda \cdot c_inne \cdot c_dfi + \eta_6 \cdot controls + \varepsilon \quad (6)$$

Regression model (4) tests the existence of the moderating effect of digitization on the direct path of the impact of R&D inputs on value creation; regression model (5) tests the existence of the moderating effect of digitization on the first half of the mediating process (i.e., the impact of R&D inputs on innovation efficiency); (6) tests the existence of the moderating effect of digitization on the second half of the mediating process (i.e., the impact of innovation efficiency on value creation) (6) test whether the moderating effect of digitalization on the second half of the intermediation process (i.e., the effect of innovation efficiency on value creation) exists.

3. Empirical Analysis

3.1 Descriptive description of the model and ADF test

Descriptive statistics were performed on the variables involved in the model, and the results are shown in the table.

Table 2: Descriptive statistics of variables

Variable	Mean	Std.Dev	Min	Max
valc	1730.653	1837.60	18.39	20225.25
r&di	107.033	62.719	2.362	324.157
inne	150.325	270.506	0.255	1749.516
dfi	1.407	0.432	0.095	5.097
exm	7.033	5.519	0.54	69.08
pacr	180.600	77.752	70.648	561.308
pie	2.456	1.160	0.615	8.000
trd	422.139	454.635	10.978	2266.336

The LLC test and Fisher-ADF test were applied to each of the above variables. It was found that these variables, except for the valc variable, satisfied the first-order single integer condition, as shown in Table 3. There was a long-term stable relationship among the variables, and a linear regression model could be constructed to analyze them. The cointegration test conducted by Kao method confirmed the existence of long-term stable relationships among the variables of the model at the 1% significance level, and a linear regression model could be constructed for their analysis.

Table 3: LLC, Fisher-ADF, KAO test results

Variables	LLC test		Fish-ADF test		Kao test(t-value)		
	(p, t)	adjust t	(p, t, d)	p-value	MDF	DF	ADF
valc	(1, 1)	6.185	(1, 1)	-1.545	-11.662***	-1.738**	-1.237*
r&di	(1, 0)	-1.930**	(1, 0, 1)	4.308***			
inne	(1, 1)	-5.232***	(1, 0, 1)	93.00***			
dfi	(0, 0)	-34.062***	(1, 0, 1)	15.014***			
exm	(1, 1)	-7.348***	(1, 0, 1)	6.497***			
pacr	(0, 0)	-7.269***	(1, 0, 1)	8.594***			
pie	(0, 0)	-2.050**	(1, 0, 1)	6.989***			
trd	(0, 0)	-12.594***	(1, 0, 1)	7.753***			

Note: p indicates panel means; t indicates time trend; d indicates drift; 1 indicates included, 2 indicates noncluded; ***, **, and * indicate passing the test at 1%, 5%, and 10% significance levels, respectively.

3.2 *Model regression analysis*

Whether models 1-6 should be modeled as random effects or fixed effects is judged by a combination of Hausman and economic significance tests. As can be seen from the table below, the p-values of the Hausman test in models 1, 3, 4, and 6 are less than 0.01 and in line with the economic significance test. In contrast, models 2 and 5 Hausman test did not pass if the random effect was used. The degree and direction of the quantitative relationship between the variables are not in line with the actual economic significance, so the fixed effect model is used in line with the actual economic significance.

Models 1-3 test the mediating effect of firm innovation efficiency between R&D investment and value creation. Among them, model 1 tests the effect of R&D input on value creation. Its R&D input coefficient value is 0.339, which is also significant at the 1% level, which indicates that the theoretical hypothesis 2a holds. Model 2 tests the impact of large enterprises' R&D investment on enterprise innovation efficiency, and its regression coefficient is 0.5109, which is also significant at the 1% level, indicating that R&D investment will lead to the improvement of enterprise innovation efficiency, and the theoretical hypothesis 1 is valid: Model 3 tests the impact of large enterprises' innovation efficiency on enterprise value creation. Its regression coefficient is 0.332, while significant at the 1% level, implying that the innovation efficiency of large enterprises will lead to the increase of value creation. In addition, by comparing the regression coefficients of the core explanatory variables R&D input in models 1 and 3, it is found that 0.332 (model 3) is smaller than 0.339 (model 1) and significant at the 1% level, indicating that the theoretical hypothesis 4 holds, i.e., innovation efficiency plays a partial mediating effect between R&D input and value creation.

Models 4-6 test the moderating effect of the degree of digitization dfi on R&D input and value creation. Among them, the coefficient of regression model 4 digitization degree dfi is not significant, which indicates that there is no significant correlation between digitization degree and value creation. Then based on the coefficient of the interaction term between digitization degree and R&D input is also not significant, which means that the moderating effect of digitization degree on the relationship between R&D input and value creation of enterprises is not significant at this stage. The coefficient of regression model 5 is 0.345 and significant at the 5% level, indicating a positive correlation between the degree of digitalization and the efficiency of corporate innovation. The regression coefficient of the interaction term between R&D investment and digitalization is 0.287 and significant at the 10% level, which indicates that the increase in digitalization diminishes the role of the firm's technology level in reducing innovation efficiency, i.e., digitalization positively moderates the relationship between new technology and innovation efficiency of the firm. The coefficient of regression model 6 is not significant for the degree of digitization, and the interaction term with the R&D investment and innovation efficiency of firms is also not significant, implying that at this stage, since the digital economy has just emerged, the degree of digitization does not yet have the role of

directly regulating the value creation by the R&D investment of large firms, and also does not have the role of regulating the value creation by the innovation efficiency of firms.

In addition to this, it is clear from the table that the individual models containing interaction terms have higher intra-group R² values than those without interaction terms. The above analysis of models 4, 5, and 6 indicates that the degree of digitalization does not have a moderating effect at this stage in the direct path of the impact of corporate R&D investment on value evaluation but has a positive moderating effect in the first half of the mediating process (from R&D investment to innovation efficiency), while the moderating effect is not significant in the second half of the path (from innovation efficiency to value creation).

Table 4: Model regression results

Dependent variable		Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
		lnvalc	lninne	lnvalc	lnvalc	lninne	lnvalc
Intermediate variables	inne	-	-	-0.1 (-0.52)	-	-	-
	Core explanatory variables	0.339*** (4.08)	0.5109*** (2.72)	0.332*** (3.93)	-	-	-
	c_inne	-	-	-	-	-	-0.01 (-0.35)
Independent variable	c_r&di	-	-	-	0.312*** (3.49)	-0.653*** (3.26)	0.320*** (3.52)
	lnexm	-0.285*** (-2.80)	-0.114 (-0.50)	-0.287*** (-2.81)	-0.282*** (-2.76)	-0.131 (-0.57)	-0.279*** (-2.72)
	lnpacr	-0.355** (-2.01)	-0.670* (-1.68)	-0.363** (-2.04)	-0.369** (-2.07)	-0.602 (-1.50)	-0.376** (-2.09)
Control variables	lnpie	-0.502*** (-4.80)	1.719*** (7.33)	-0.471*** (-3.90)	-0.465*** (-4.16)	1.530*** (6.13)	-0.440*** (-3.51)
	lntrd	-0.734*** (-5.88)	-0.187 (0.68)	-0.727*** (-5.80)	-0.727*** (-5.75)	-0.222 (-0.80)	-0.727*** (-5.72)
	c_dfi	-	-	-	0.067 (0.94)	0.345** (-2.17)	-0.064 (0.87)
Interaction items	c_r&di · c_dfi	-	-	-	0.05 (0.73)	0.287* (-1.77)	-0.07 (0.84)
	c_inne · c_dfi	-	-	-	-	-	-0.02 (-0.86)

Table 4: Model regression results (cont.)

Dependent variable	Model 1 lnvalc	Model 2 lninne	Model 3 lnvalc	Model 4 lnvalc	Model 5 lninne	Model 6 lnvalc
Hausman Test	34.68***	5.74	32.98***	40.95***	15.18*	39.17***
F test	17.32***	19.39***	14.43***	12.44***	14.66***	9.73***
Within R ²	0.2477	0.2678	0.2484	0.2502	0.2807	0.2527
Between R ²	0.0040	0.1060	0.0007	0.0005	0.1447	0.0004
Total R ²	0.0285	0.1224	0.0189	0.0202	0.1542	0.0202

Note: Values in parentheses are coefficient t-statistics; ***, **, and * indicate passing the test at 1%, 5%, and 10% significance levels, respectively; semi-log t-values have been %-processed

3.3 Moderating effect analysis

In order to understand the moderating effect of the digitization degree dfi more intuitively, the panel data can be averaged for its digitization degree and divided into two groups: greater than dfi average and less than dfi average. Among them, the former includes the provinces of Gansu, Guangxi, Guizhou, Hebei, Henan, Heilongjiang, Inner Mongolia, Ningxia, Qinghai, Shanxi, Shaanxi, Tibet, Xinjiang and Yunnan; the latter includes the provinces of Anhui, Beijing, Fujian, Guangdong, Hainan, Hubei, Jiangxi, Shanghai, Tianjin, Hunan, Jiangsu, Liaoning, Shandong, Sichuan, Zhejiang and Chongqing.

The two-panel data are now regressed, and the results are shown in the table.

Table 5: Grouped regression results of digitization degree

Dependent variable		Provincial dfi mean above median		Provincial dfi means below median	
		lninne	lnvalc	lninne	lnvalc
Core explanatory variables	fe	1.095*	0.314	0.426***	0.338***
		(1.70)	(1.27)	(2.88)	(3.98)
	re	1.453***	-	0.428***	0.350***
		(2.45)		(3.02)	(6.13)
Control variables	lnexm	-0.283	-0.289	-0.507**	-0.213
		(0.56)	(-1.49)	(-2.02)	(-1.49)
	lnpacr	-0.622	-0.417	-1.277***	-0.236
		(-0.92)	(-3.36)	(-2.86)	(-0.92)
	lnpie	1.664***	-0.564***	2.229***	-0.268
		(3.11)	(-2.72)	(7.54)	(-1.58)

Table 5: Grouped regression results of digitization degree (cont.)

Dependent variable	Provincial dfi mean above median		Provincial dfi means below median	
	lninne	lnvalc	lninne	lnvalc
Lntrd	-0.434 (-1.15)	-0.781*** (-5.24)	-0.672 (1.16)	-0.183 (-0.55)
Hausman Test	6.15	31.79***	1.76	1.22
wald	32.2***	-	118.3***	56.61***
F test	6.15***	12.15***	22.63***	4.69***
Within R ²	0.2025	0.3360	0.4488	0.1453
Between R ²	0.0391	0.0393	0.1803	0.6794
Total R ²	0.0664	0.1208	0.2235	0.4328

Note: Values in parentheses are coefficient t and z statistics; ***, **, and * indicate passing the test at 1%, 5%, and 10% significance levels, respectively; semi-log t values have been % treated.

According to the results in the above table, the regression coefficient of enterprise innovation efficiency on R&D input is 1.453 and significant at a 1% level in provinces with provincial digitalization degrees higher than the median. While the regression coefficient of enterprise innovation efficiency on R&D input is 0.428 and significant at a 1% level in provinces with provincial digitalization degree less than the median, indicating that the digitalization degree has a positive moderating effect between enterprise R&D input and value. It can also be said that for regions with higher innovation capacity, the more obvious is the empowering effect of the digital economy on regional innovation capacity, which leads to the widening of the innovation capacity gap between regions, i.e., the empowering effect of the digital economy on enterprise innovation capacity is more obvious in regions with a higher degree of talent concentration or digital financial development. The overall increase in digitalization enhances the impact of R&D investment on innovation efficiency. This finding is highly consistent with the study by Han, Chen and Liang, (2021).

In addition, the regression coefficient of 0.314 was found to be insignificant in the regression of enterprise value creation on innovation efficiency in provinces where the degree of provincial digitization was higher than the median, while in provinces where the degree of digitization was less than the median, the regression coefficient of enterprise value creation on innovation efficiency was 0.35 and was significant at the 1% level. This indicates that the degree of provincial digitization does not have a moderating effect on the direct path between R&D investment and value creation, due to the difference in the perception of external environmental risks of firms (Xu, Yuan and Wang, 2021), where more information in regions with better economic development makes it easier for firms to perceive external environmental risks, resulting in a decline in firm innovation efficiency eventually leading to a decline in firm value creation as well; on the contrary, in economically backward On the

contrary, in economically backward regions, the more companies perceive the external environmental risks, the higher the level of corporate innovation investment, the higher the innovation efficiency, and ultimately the higher the value creation. In other words, the increase of digitalization at this stage does not significantly improve the impact of R&D investment on value creation.

3.4 Model Robustness Test

In order to test the robustness of the model, the enterprise innovation efficiency is now replaced by the original economic output indicators with the indicators in terms of prior inputs, and the new product development expenditure and the number of projects developed are used to represent the enterprise innovation efficiency level. The regression models 1-6 are re-estimated, and the results are shown in the following table.

Table 6: Robustness test results

Dependent variable		Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
		Invalc	Innppe	Invalc	Invalc	Innppe	Invalc
Intermediate variables	Innppe	-	-	0.039 (0.19)	-	-	-
	Core						
explanatory variables	ln r&di	0.760*** (3.39)	-0.121* (-1.78)	0.764*** (3.39)	-	-	-
	c_nppe	-	-	-	-	-	0.007 (0.30)
Independent variable	c_r&di	-	-	-	0.342*** (4.09)	-0.083*** (-3.35)	0.349*** (4.04)
	lnexm	-0.260** (-2.50)	-0.047 (-1.17)	-0.258** (-2.47)	-0.293*** (-2.80)	-0.044 (-1.41)	-0.274** (-2.55)
Control variables	lnpacr	-0.425** (-2.29)	-0.012 (-0.21)	-0.425** (-2.29)	-0.371** (-2.03)	-0.006 (-0.11)	-0.369** (-2.00)
	lnpie	-0.529*** (-4.99)	-0.148*** (-4.63)	-0.523*** (-4.69)	-0.502*** (-4.78)	-0.149*** (-4.84)	-0.487*** (-4.39)
	lntrd	-0.792*** (-6.25)	-0.071* (-1.88)	-0.788*** (-6.13)	-0.773*** (-5.66)	-0.116*** (-2.93)	-0.780*** (-5.55)
Adjustment variables	c_dfi	-	-	-	-0.039 (-0.44)	-0.078*** (-2.96)	-0.333 (-0.37)
	c_r&di·c_dfi	-	-	-	-0.060 (-0.67)	-0.079*** (-3.00)	-0.060 (-0.66)
Interaction items	c_nppe·c_dfi	-	-	-	-	-	2.56 (0.74)

Table 6: Robustness test results (cont.)

Dependent variable	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
	lnvalc	lnnppe	lnvalc	lnvalc	lnnppe	lnvalc
Hausman Test	45.52***	11.10	44.61***	45.37***	16.46**	47.30***
F test	16.03***	5.94***	13.31***	12.37***	7.24***	9.64***
Within R ²	0.2335	0.1007	0.2336	0.2491	0.1616	0.2510
Between R ²	0.0410	0.0002	0.0441	0.0008	0.0093	0.0006
Total R ²	0.0576	0.0052	0.0606	0.0196	0.0000	0.0914

Note: Values in parentheses are coefficient t-statistics; ***, **, and * indicate significance levels at 1%, 5%, and 10%, respectively; semi-log valuation has been done as a % treatment.

Comparing the results in Tables 4 and 6, it can be observed that the coefficients and the degree of significance changes of the core explanatory variables in the models remain largely consistent. In addition, the control variable pie has opposite signs in the second and fourth models, which indicates the heterogeneity of the economic output and economic input aspects of the degree of digitization regulating innovation efficiency, i.e., the degree of digitization shows positive regulation of innovation efficiency of economic output, while it shows negative regulation of innovation efficiency of product input. In addition to this, the signs of the coefficients of the control variables are largely consistent, indicating that the regression model constructed in this paper has good robustness.

4. Model conclusions and policy recommendations

The text uses a provincial panel data model for 2011-2020 to empirically analyze the relationship between R&D investment, innovation efficiency and value creation of large enterprises in provincial administrative regions of China. The results of the study indicate that.

First, the process of improving R&D investment in large enterprises is conducive to promoting the creation of enterprise economic value. On the one hand, in the process of upgrading the technology level, the investment of human, material, and financial resources of enterprises will enhance the development space of large and medium-sized enterprises to expand the market. On the other hand, the application of new technologies in large enterprises will not only help to grasp the market share but also prompt the upgrading of technology in enterprises in the same industry, which will lead to the introduction of new products. The study by Wang, Ji, (2006) shows that there is a multiplier effect between technological innovation investment and value creation, and reveals that the incentives and constraints of key employees are the factors affecting the multiplier effect, which is the core of technological innovation-based value management in enterprises. The empirical study in this paper mirrors this view that the development of a firm's technology level will lead to an increase in its value creation.

Second, the R&D investment of large firms is positively associated with the innovation efficiency of firms. This finding is in line with He,Qin, (2019) study the quality that digital transformation, driven by the innovation-driven model in the new era, significantly improves the economic efficiency of firms.

Third, a firm's innovation efficiency partially mediates the relationship between R&D investment and innovation efficiency. Firms with higher innovation efficiency tend to have more patent applications and contribute to the increase of commercial conversion rate, which leads to firm value creation. The results of the empirical study in this paper indicate that R&D investment drives innovation efficiency, and firms with high innovation efficiency tend to have more value creation. Therefore, the increase in value creation due to R&D investment in large and medium-sized firms is partly brought about by the mediating variable of firm innovation efficiency.

Fourth, the degree of digitization positively moderates the relationship between R&D investment and innovation efficiency. This empirical study shows that the positive relationship between R&D investment and innovation efficiency is stronger in regions with a higher degree of digitalization. Conversely, the influence of R&D investment on innovation efficiency is weaker in regions with a lower degree of digitalization. Tang,liu and ding,(2020) concluded that the overall degree of "Internet+" in China is low and unevenly distributed, and the technological innovation efficiency of both technology development and technology transformation in the high-tech manufacturing industry shows spatial dependence. This conclusion is also consistent with the empirical study in this paper, such that the impact of R&D investment on innovation efficiency is significantly greater in regions with a high degree of digitalization than in regions with a low degree of digitalization.

Fifth, large firm R&D investment in value creation does not show regional heterogeneity in the degree of digitization, and also, the degree of digitization does not have a significant moderating effect of innovation efficiency on value innovation. The research in this paper shows that the role played by large firm R&D investment in improving firm value creation is not significant in regions with high and low provincial dfi. The reason is that, firstly, firms in regions with relatively slow economic development have more flexible applicability of technology than firms in regions with a high degree of digital transformation. Secondly,He,Qin,(2019) concluded that the contribution of digital transformation to firm performance is more significant in private firms, which are more clustered in economically underdeveloped regions. Also, this paper found that the degree of digitalization does not have a significant moderating effect of innovation efficiency on value innovation. This finding is consistent with Tang,liu and ding,(2020),Li,Yang,Chen, (2021) that "Internet+" has a significant positive impact on technological innovation efficiency in the R&D stage, but not in the transformation stage. Although this digital transformation in the form of "Internet+" can significantly improve the efficiency of enterprise innovation, it also has cumulative effects and lags.

According to the above conclusions, the following policy recommendations are proposed:

First, the overall advantage of technological progress of large enterprises should be vigorously exploited. The conclusion of this paper shows that the technological progress of enterprises can effectively improve the value creation of enterprises. Therefore, the acceleration of the process of technological innovation and upgrading of large enterprises is conducive to the enhancement of value creation. The current technological advancement paths of large enterprises in China mainly include internal R&D, the introduction of foreign technology, and purchasing domestic technology according to the different sources of technological knowledge. Internal R&D is a large enterprise based on its own technical level to break through technical difficulties to generate new technology and effective technology innovation for external absorption of technology. The introduction of foreign technology enterprises should have their own development rhythm, plan, and focus on introducing external technology that the enterprise has not fully mastered but has a pressing need. At the same time, to strengthen the domestic institutions of higher education, industry, academia, and research projects to promote the transformation of scientific research results.

Second, further restructuring the industrial structure, especially the industrial layout of economic regions. The analysis in this paper shows that the impact of large enterprises' R&D investment on innovation efficiency is partly achieved by the increase of digitalization. The vigorous development of the "Internet+" development model has effectively contributed to improving technological innovation efficiency. However, the regional economy of China is regionally heterogeneous in terms of both the level of technological innovation and the efficiency of technological innovation. In the "pro" "clear" government-enterprise relationship, the government should focus on the development of policies to consider the shackles of regional technological innovation capacity, but also to consider the promotion of large and medium-sized enterprises to invest in R&D mobility, especially to strengthen the innovation of human and financial resources upfront investment. For regions with high technological innovation efficiency and low enterprise value creation, the focus should be on accumulating and guiding technological innovation efficiency, improving the ability of technology transformation to create value through government support or talent introduction, and thus improving the ability of large enterprises to create value.

Thirdly, the traditional enterprise development model should be changed, and innovation efficiency should be improved by relying on the "Internet+" economic background and green environment. This study shows that the degree of digitalization does not show significant moderation in the relationship between innovation efficiency and enterprise value creation. The reasons for this are twofold. One is that innovation efficiency is still in a state of technology accumulation at this stage of "Internet+", and has not yet reached the process of quantitative to qualitative change, so we cannot see the improvement of innovation efficiency transformation in large enterprises in the era of the digital economy. On the other hand, the change of economic development mode from focusing on economic efficiency to green environmental protection needs to improve environmental protection. It also needs to invest the necessary human and material resources.



Fourth, deepen the reform of the science and technology system to improve the efficiency of large enterprises' science and technology resource allocation. The research in this paper shows that the level of new technology R&D in large enterprises does not show the heterogeneity of regional digitalization degree on value creation. The reason is that the large enterprises with a high degree of digitization are still in the traditional processing stage, especially in the manufacturing industry, facing the contradictory problems of low product market demand structure and unreasonable matching of R&D resources, resulting in the low-value creation ability of enterprises, which shows similarity with the value creation ability of large enterprises with a low degree of digitization. Therefore, it is necessary to deepen the scientific and technological reform of large enterprises, integrate the existing R&D resources, build a platform to encourage technical cooperation and exchange, transform the traditional conservative model into a new intensive model, and then enhance the innovative value of high technology.

References

- Chen Z., Liu,Z.,Serrato,S.,& Xu,Y.,(2021).I. Notching R&D Investment with Corporate Income Tax Cuts in China. *American Economic Review*, 111(7), 2065-2100.
- Ding, Y., Zhao, J., & Hong, T.,(2013).Analysis of technological innovation efficiency and influencing factors of large enterprises in Heilongjiang Province. *Journal of Harbin Engineering University*, 34(08), 1069-1076.
- Han, L., Chen, S., & Ling, L. (2021).Digital economy, innovation environment and urban innovation capacity. *Science Research Management*, 42(04),35-45.
- He, F., & Qin, Y., (2019). Research on the economic consequences of digital transformation of real enterprises driven by innovation. *Journal of Northeast University of Finance and Economics*, 5(05), 45-52.
- Li, J. & Shen, K. (2009). Barriers to technological transformation and economic growth transformation-empirical evidence from large and medium-sized industrial enterprises. *Journal of China University of Geosciences (Social Science Edition)*, 9(03),79-83.
- Li, L., Yang, S., & Chen, N. (2021). “Internet+”, Technological heterogeneity and innovation efficiency--a study based on inter-provincial industrial enterprises panel data. *Journal of China University of Geosciences (Social Science Edition)*, 48(02),69-80.
- Shen, J., & Chen, Y. (2021). Corporate life cycle, industry competition level and R&D smoothing--an empirical study based on Shanghai and Shenzhen A-share high-tech enterprises. *Journal of Beijing University of Technology*, 23(4), 124-134.
- Tang, X., Liu, R., Ding, Q., & Zhang, Z., (2020). Research on the efficiency of technological innovation in China's high-tech manufacturing industry--based on the perspective of Internet. *Journal of Liaoning University (Philosophy and Social Science Edition)*, 48(02), 69-80.

- Wang, L. (2015). Measurement and analysis of innovation-driven growth of large and medium-sized industrial enterprises in China. *Quantitative Economic and Technical Economics Research*, 32(11),90-104.
- Wang, Q., & Ji, J., (2006). On technological innovation and incentives and corporate value. *Economic Issues*, (11), 11-13.
- Wu, D., (2016).Research on e-commerce business model of large retail enterprises under the concept of value creation. *Business Economic Research*, 40(22),58-60.
- Xiao, Z. & Lin, L., (2019). Corporate financialization, life cycle and persistent innovation - an empirical study based on industry classification. *Finance and Economics Research*, 45(08),43-57.
- Xu, J., Wang X., & Liu, F.,(2021). Government subsidies, R&D investment and innovation performance: analysis from pharmaceutical sector in China. *Technology Analysis & Strategic Management*, 33(5),535-553.
- Xu, M., (2021) Measurement of Innovation Efficiency in China's High-tech Industries and Research on Spatial Disequilibrium. *World Scientific Research Journal*, 7(2),420-429.
- Xu, W., Ruan, Q., & Wang, G., (2021). Private entrepreneurs' perceptions of external environmental risks and firms' investment in innovation. *Research Management*, 42(03), 160-171.
- Ye, G., Chen, J., & Lan, H. (2010). Jingling Chen, Hailin Lan. Value creation of corporate headquarters and the types of corporate headquarters in China during the transition period. *Journal of Management*, 7(03),331-337.
- Yu, C. & Wang, X.,(2021). An empirical test of financial innovation on high-quality economic development. *Statistics and Decision Making*, 37(09),88-92.
- Yu, Y., Liu, F., & Zhuang, H. (2021). Internet development and technological innovation: A patent production, renewal and citation perspective. *Scientific Research Management*, 42(06), 41-48.
- Yuan, M., & Sun, H. (2021). Study on the spatial imbalance and dynamic evolution of the distribution of technological innovation efficiency growth in national high-tech zones--based on a double non-parametric estimation method. *Technology Economics*, 40(05),1-9.
- Yuan, X., Wu, L., &Zhang, P., (2017). Research on the innovation efficiency enhancement path of large manufacturing enterprises in China under green growth. *Science and Technology Progress and Countermeasures*, 34(22), 85-92.
- Zhang, Y. (2014). Research on R&D innovation efficiency of large state-owned enterprises[J]. *Science and technology economic market*, (03), 27-28.
- Zhang, Y., Shi, Y., & Xue, L. (2021). A study on the practice of entrepreneurship and innovation driven by large enterprises in the digital economy. *Theory and Modernization*, (01),14-20.

THE DUNNING'S OLI FRAMEWORK AS A KEY FOR MNE CONSIDER WHERE TO PLACE FDI

Jia Hou

Marketing Department, Business School, Xiamen Institute of Technology, China
*Corresponding author, E-mail: 2893207180@qq.com

Abstract

This paper aims to describe Dell Computer Corporation's (Dell) background and strategic analysis as an example to analyze how one multinational enterprise (MNE), Dell, did decision-making processes when considering where to place Foreign Direct Investment (FDI). FDI will be defined, followed by reasons for the existence of FDI. A global overview of FDI will then be presented. The Impacts of FDI will be explored, followed by some different theories of FDI. And Dell's decision about where to locate is driven by the desire to help this MNE succeed is an important factor to explain the geographic expansion of MNE. The approach chosen is based on Dunning's OLI framework to provide a realistic explanation. These analyses will include ownership, location, and internalization through theories and my individual analysis. Finally, the paper will conclude with a brief conclusion.

Keywords: Dunning's OLI framework, MNE, FDI, Dell Computer Corporation

Research Background

In recent years, the growth of strategic asset-seeking FDI is best demonstrated by the increasing role of mergers and acquisitions as modalities of FDI, it includes Dell, which is a Multinational Enterprise (MNE). In the new global economy, FDI by MNEs greatly helps overall economic development in developing countries, such as China. Globalization has stimulated competition across borders and has pushed governments to focus on developing strategies for their countries (Khan and Khan, 2017). Today, some developing countries' governments attempt to attract FDI.

Critical Evaluation about Dunning's OLI Framework and Dell Computer Corporation

If any enterprises are usually more competitive than their similar industries in their home country, they prefer to choose to invest abroad, such as DELL. Here will focus on Dell to make decisions when it considers where to place FDI activities to gain larger rewards. It aims to examine whether Dunning's OLI framework correctly adopts MNE's FDI in China by Dell.

Ownership

Dell's own advantage is its Direct Sales Model, that is, remove agents and sell products directly to customers to enhance and expand its competitive advantages. (Andrews, Chompusri & Baldwin, 2015). In this way, Dell could obtain the following advantages in the market. It can supply a more affordable price to customers with a variety of products, and guarantee the delivery service. And Dell contacts customers directly and meets the customers' needs to ensure that the company provides service both efficiently and effectively. In addition, Dell also ensures the products have not been

produced. However, Dell has been sold them through Internet. Therefore, a well-operated supply chain management ensures that there is no inventory in Dell and achieves the cost advantage here. So, it can develop more accurate demand forecasts. Another key to the successful transfer of Dell's ownership advantage is Dell's focus on a localization standardization approach to treat each market individually to meet some different customer groups. Hence, Dell's selling system in China not only successfully uses the Direct Model to sell PCs online but also properly identifies market segments to create a shared goal. Furthermore, keeping in a relatively low price can become Dell's core competency. It also can become Dell's ownership advantage.

Location

David (2014) indicates that a suitable location can reduce the MNE's cost and improve their efficiency. To some extent, China fulfilled Dell's criteria as a suitable location to enter around 1999, because China was relatively stable Chinese people were perceived to have adequate spending power, and there was potential for future growth in the market. At the same time, the Chinese government made more incentives to attract FDI. Second, China's location in East Asia is very positive for Dell, because it has a long coastline and three significant rivers, which all provide transportation of people and goods to large areas of the country to support convenient for trade and reduce some transportation costs. Thirdly, China is sometimes assumed to be a low-cost manufacturing country due to its low labor in large part.

MNE should utilize these assets and deploy them effectively, the reduction of natural resources and some artificial impediments to reduce some related transaction costs, and the growing need from other countries can promote MNEs and coordinate their cross-border activities. All of these factors can help China into the second-largest economy in the world. Therefore, China's location advantage has had the dual benefit of access to attract FDI to inflow, as well as a base to control operations regionally. That's why Dell opted for China because the potential profit may be forecasted and they also found the reduced cost of entry.

Internalization

Dunning (2017) pointed out that Internalization (I) advantages refer to the ability of a firm to leverage abroad its domestic advantages by internalizing markets. Dell's global supply chain is suitable for internalization and had been a successful business model in China. To manufacture its products, Dell coordinates a global production network that spans four continents, North and South America, Europe, and Asia. To minimize Dell's cost and to extend the build-to-order, Dell's Direct Sales Model around the world. Some specific locations have been selected by Dell corporation to control some factors, such as the quality of labor and the manufacturing cost. Dell's Direct Sales Model avoided some dealer markups because it removes wholesalers and retailers. In this way, Dell does not consider that they have to compete for valuable shelf space.

Moreover, in order to run Dell's other operations, such as for some large enterprises, Dell can support solutions to increase server utilization and improve responsiveness to ever-evolving needs while reducing the costs of IT expansion. Therefore, it is important for the internalization of activities to fall under the responsibility of Dell. By building a global distribution and supply chain, Dell increases its reach with every country it enters. Only by internalizing operations in China can make a securely link it to its network, reduce transaction costs, and subsequently control and spread its operations throughout Asia from its regional headquarters in China. Therefore, there are many benefits from Dell's internalization advantages in China.



Conclusion

MNE's decision-making is influenced by OLI and this framework has remained the dominant analytical framework for accommodating a variety of operationally testable economic theories of the determinants of FDI and the foreign activities of MNEs. The pattern of Dell's business model managed FDI in China based on Dunning's eclectic paradigm. Dell's motivation for an FDI move stemmed from a market shares expansion using a direct sales model, which was a good match for moving into an emerging market such as China. Although there is a convenient fit with the eclectic paradigm, there are other substantial theories and reasons to explain Dell's FDI in China.

Reference

- Andrews, T. G., Chompusri, N., & Baldwin, B. J. (2015). *The Changing Face of Multinationals in Southeast Asia*. London, UK: Routledge
- David, P. (2014). *High technology centers and the economics of locational tour- naments*. Stanford. California, USA, Stanford University (mimeo).
- Dunning, J. H. (2017). *Alliance Capitalism and Global Business*. London, UK: Routledge.
- Khan, S. M. & Khan Z. S. (2017). *Book Review: World Investment Report 2006, FDI from Developing and Transition Economies: Implications for Development by United Nations Conference on Trade and Development*, Journal of Asian Economics, 18(3), pp. 553-561.

VARIOUS PERSONNEL POLICIES TO PROMOTE DIVERSITY IN EUROPEAN COMPANIES

Kyoko Kato

College of Engineering and Design, Shibaura Institute of Technology, Japan
*Corresponding author, E-mail: kkato@shibaura-it.ac.jp

Abstract

The purpose of this study (especially this paper) was to investigate the companies in Europe, as advanced in diversity and inclusion, regarding policies and practices to utilize females (or minorities) in Europe, leading countries of diversity. Investigating how to utilize the role model mechanism was positioned as the highest priority survey item. Results of the interviews from 5 companies in Sweden and Belgium indicated that not many companies actively introduce role model practices, which is contrary to the expectations. However, there is one big difference in how companies interpret diversity (inclusion) problems. These companies are already aware that there is a limit to advancing policies by focusing only on female workers. They understand the fact that theories and logic themselves cannot solve the problem of diversity, and that the emotional and cognitive gap between male and female workers remains. And they are trying to deal with this problem with the idea of including “ALL” employees (not only female employees)”. Japanese companies need to refer to the fact that they made films focusing on ideas and perspectives, not on the surface of role model behavior. This paper concludes with several suggestions for future research.

Introduction

Managing diverse human resources is an important issue for Japanese companies in a globally competitive environment (Welcome to Ministry of Health, Labour, & Welfare, 2013). Therefore, there is a strong demand to promote the active participation of human resources, such as female workers, who have traditionally been minorities (Sunaguchi, 2021). Under such circumstances, private companies and public institutions are aware of the need for a person who can serve as role models and mentors for the action guideline (Ministry of Health, Labour and Welfare, 2021). However, there is no unified academic definition for role models, and their significance and effects are ad hoc interpreted without academic discussion (Gibson, 2004). As a result, they cannot be systematically used in the actual workplace.

For Japanese companies to truly become globalized and promote the active participation of diverse human resources, it is necessary to enable individual workers to find "their own" role models that suit them rather than redefine role models that reflect modern social backgrounds and organizations (Ota & Maeda, 2021). The goal to solve the above problem is therefore to systematically classify the various role models that exist in organizations and to clarify the method that allows each individual worker to choose a role model that suits them instead of unilaterally recommending it by the organization (Mizoguchi, 2021).

To accomplish the goal, the first step is to capture the components of a role model from many different aspects and to clarify how to express various role models by components. The second step is to develop a system that can identify a role model that meets each individual's needs based on the components.

This paper is a part of the research mentioned above, especially taking an early part of uncovering the "role model components." In this paper, several case studies from Sweden and Belgium companies are introduced for a reference point of how to utilize and develop female workers in a workplace in Europe. In addition, they are leading companies in personnel policy on female utilization and diversity as part of the work.

The Journey

Interview with corporate human resources (mainly HR professionals or labor professionals) involved in employee development, and what measures and initiatives they are taking for specific human resources groups (female, immigrants, etc. minority) investigate. The general questions are as follows.

Question:

- What kind of mechanism do you have for employees with various backgrounds to encourage their career plans and working styles in the organization?
- Do you have a mechanism that focuses on your personal career path (e.g., role models, mentors, etc.)? Who and how is such a mechanism based on what kind of information?

Business trip summary:

Period: March 21, 2018 (Wednesday) -March 28, 2018 (Wednesday)

Location: Stockholm (Sweden) and Brussels (Belgium)

Summary and analysis of interviews during business trips

The list of company personnel interviewed during the above business trip is as follows.

March 21, 2018: Company M (Manufacturing: Global)

- Ms. M. A., Group Human Resources
- Ms. M. B., Vice President, Head of Marketing Support, Group Strategy

March 22, 2018: Company E (Manufacturing: Global)

- Ms. E. A., HR manager

March 22, 2018: Company A (Engineering Consulting)

- Ms. A. A., HR manager

March 23, 2018: Company C (Manufacturing: Global)

- Ms. C. A., HR manager
- Ms. C. B., Intern of the company

March 26, 2018: Company T (Manufacturing: Global)

- Ms. T. A., HR Manager

All contact persons' names are anonymized so that the company name is not identified.

Company M (Manufacturing - Global)

Company M, which was first visited in Sweden, is a manufacturing company. Because of the nature of the products that they handle, all employees in this office in Sweden are Swedish nationals, and there are overwhelmingly many male employees. To deal with these circumstances, a full-scale diversity program started relatively late in 2007. At that time (2007), the number of female managers was 13%, but a goal was set to increase it to 30% by 2020. Regarding the mentor system, it was abolished in 2009 when it had an official program before, and now there is an informal mentor system for all employees, not just women. Other than the above



programs, this company has tried various attempts such as developing role models and influencers, networking programs, and leadership programs as other companies have done.

The most impressive moment of the interview is that the person in charge asserted that the most important factor was the commitment of management teams. Company M has seven executives, two of whom are female. One of them, named Ellen, was promoted from floor-level employees. The HR division featured Ellen as a role model for all female employees, and interestingly, they made her documentary film.

Company E (Manufacturing: Global)

At Company E, which I visited next, the HR person described all their practices were "in progress" (haven't led to a visible result yet) at the beginning. Still, she recognized issues their company faces, such as slow performance and the need for innovation associated with human resource development.

The CEOs of Company E were dismissed one after another in 2016 and 2017, and the HR strategy had to be reviewed each time, but the only HR practice that was promoted without blurring was career development. There were some forces who resisted spending time and money on training under the poor performance at that time, but they gradually accepted the idea and the mindset of "designing my own career." Since the company is in a traditional (old school) manufacturing industry, some expressions in their everyday conversations might lead to gender discrimination, so attempts to change the wording have begun. By advancing things on a fact-based explanation, the company tries to instill that this concept of diversity is necessary and important as a company.

Company A (Engineering Consulting)

As with the two companies already mentioned, it was interesting that the person in charge of company A started talking after prefaced that "all measures are on-going" The company's commitment to diversity has been triggered by a large number of female employees leaving their jobs due to mergers and acquisitions that have continued over the past few years. As with the above two companies, men traditionally dominated the workplace, so we are now paying attention to gender equality in all processes.

However, the most characteristic measure of this company is "Lady's month", and during this period, we are implementing a very challenging measure of hiring only females. Although there were some dissenting opinions, there was a big factor of awareness inside and outside the company, and as a result, many excellent women could be hired. There is also a by-product that the number of male applications has increased as the mass media have picked it up.

Another interesting measure of the company is the presence of employees in the role of Diversity Coach. It is a measure that began with the challenge of how to smoothly provide new lives and labor to Sweden when many immigrants (refugees) from the Middle East also flooded Sweden. Immigrants from the Middle East belong to completely different cultures. Therefore, to quickly adapt to a new life in Sweden, the company recruits employees from the workplace as coaches from the same country and accompanies them not only with immigration work but also with various procedures and life construction.

Company C (Manufacturing: Global)

A major feature of Company C is that it hires many graduate student internships in the HR department and provides them with the opportunity to conduct research and research on workplace

diversity. Not only is this a unique opportunity for graduate students to observe actual sites and data, but it is also a great opportunity for companies to look back on their HR policies from an external perspective. Like the above three companies, company C, which is a machine tool manufacturer, has traditionally been a workplace where men are the majority. Currently, the female R & D ratio is as high as 20%, but the structure is not even when looking at the entire company. For example, in the engine development department, 9% are female (which indicates that they always work alone). In the cab department, 20% are disjointed. Finally, in the management department, such as the HR department, 80% or more are female.

In Company C, the idea of diversity and integration is integrated with the sustainability guideline of the company. By properly presenting this idea and stance, the company is promoting the understanding of its suppliers. It was impressive that their presentation turned into a selling point for the company.

Company C considers that diversity is developed based on the idea of 1) skill and 2) necessary ability, which creates a logic that leads to the performance of the company.

The company considers personality, nationality, gender, and age as just a small part of diversity (like “the tip of the iceberg”). Therefore, it is difficult to link such diversity to productivity. On the other hand, the diversity of experience, knowledge, hobby, personality, value (like “under the surface of the iceberg”) can be linked to the actual performance. Therefore, it is important not to “adjust” but to “respect” and “turn” these differences into strengths. The HR staff said that it was necessary to remove the unconscious bias to implement.

Company T (Manufacturing: Global)

The Belgian company T, which I visited last, is a food manufacturer, but it is doing business in a position like a so-called “agricultural cooperative” where Farmers are also stakeholders. Unlike Sweden, the history of immigrants is in the history of Belgium itself. The history of immigrants has had a great influence on the labor relations of companies in this country. Company T has a mentor system, which is included in the training program for new employees. If there is a request from employees, the HR department will offer this mentoring system, but they may refer another person if matching does not work. In some cases, the mentor system is used for people in higher positions, and sometimes it is used for people at the entry-level in others. Since not all employees need a mentor, this system is not mandatory and is only used by those who need it.

Outcomes and Discussions

The main purpose of this trip to Europe was to investigate what policies are being implemented in European companies to utilize role models. Before traveling, it was a top priority goal to ask about the effects on the premise that Europe, a developed country of minorities, is already producing results in many countries. After a series of interviews, however, it turns out that even Europe, especially those considered to be the most advanced in terms of gender equality, has difficulty with minority issues. Under the pressure of dealing with increasing immigrants (= minorities), all the companies visiting this time face difficulties in terms of understanding the importance of the “inclusion” concept from the bottom of their hearts and trying to grasp diversity from that perspective. For example, even in Sweden, as a leading country for gender equality (1st in the EU on the Gender Equality Index: EIGE, 2020), the percentage of top-managed women may be less than 30% in the traditional manufacturing industry visited and is as the same as all other companies.

However, there is one big difference from Japanese companies. These companies are already aware that there is a limit to advancing policies by focusing only on female workers. They understand the fact that theories and logic themselves cannot solve the problem of diversity and that emotional and cognitive gaps between male and female workers remain. And they are trying to deal with this problem with the idea of Diversity and Inclusion (D & I hereinafter) of “all employees (not only female employees)”. This is what Roberson (2006) stated inclusion as “seeking out, valuing, and using the knowledge and experiences of diverse employees for business benefit (p. 12). The attempt that the companies are making seems serious enough to differentiate it from that of Japanese companies.

During the trip this time, I could not identify a company that was actively talking about role models, but companies that have adopted female athletes as their image models, for example. However, even in this case, the company does not pick her up as a “successful” or “active” woman. Instead, the company strives to convey its “idea.” For example, the experience of role models, such as striving toward goals, having various experiences, recovering from failure, and experiencing the real thrill of taking on challenges, overlaps with the careers of each person working at a company. For the author of having discomfort with the diversity policy of many Japanese companies, it was a healthy gratification that they approach it by understanding the “core” concept of inclusion. Due to the immigration issues mentioned above, this idea of Inclusion seems to be more and more important in Sweden. On the other hand, Belgium, a neighboring country, seems to have a difference in the definition and way of thinking of diversity from Sweden, even in same Europe, because the composition of the country is historically multinational.

Conclusions and Future Research

The purpose of this study (especially this paper) was to investigate the companies in Europe, as advanced in diversity and inclusion, regarding policies and practices to utilize females (or minorities) in Europe, developed countries of diversity. Investigating how to utilize the role model mechanism was positioned as the highest priority survey item. Still, not many companies used the role model system contrary to expectations.

Although it can be said that this is a somewhat disappointing result, it became clear that understanding the reason will lead to the future role model study. First, it was found from the case study that the utilization of women cannot be successful unless it is promoted from the framework of the utilization of “all” people, which then is the essence of D & I (Roberson, 2006). For example, the utilization of females and minorities in companies would not be successful unless it is promoted from the framework of the utilization of all people. This must be a great suggestion for many Japanese companies that are only concerned with symptomatic treatments that focus solely on females and minorities.

On this business trip, I couldn't find any concrete examples in which role model systems are actively utilized in a workplace. However, I learned from such companies that they make the role model system voluntary so that those who want to use it can use it freely and flexibly. Also, one of the companies I visited made a movie about role models (female employees) that focused on role model processes, difficulties, experiences, ideas, and role model perspectives rather than performance and glory. In Japan, the role model system has been used with the intention that by presenting a role model who fits the purpose of a company's goals and performances (Waki, 2019). However, as Watanabe (2006) suggests, it should not be used to produce followers who mimic a role model or encourage them to live the same way. Rather, it exists for them to learn something from the role model, and each of them forms their own way of life. Therefore, Japanese companies need to refer to the fact that they made films focusing on ideas and perspectives, not on the surface of role model behavior.

Future research should examine how COVID-19 affects corporate diversity policies and practices by interviewing the same companies that I visited in 2018. The virus is forcing manufacturing companies worldwide to transform their business models in a quite drastic way. These drastic changes must greatly influence how companies deal with their employees. The pressure to shift to a green economy and a sustainable society may also have an impact on employee-management relations. For example, with the spread of remote work, it turns out that being in the workplace does not necessarily lead to a high-performance evaluation, which in turn may be a great opportunity for promotion and salary increases for people with non-standard work styles. In addition, companies seeking diverse work styles may need various role models regardless of gender, age, and other characteristics. It would be interesting to see whether the change affects D & I policies and practices negatively or positively. If it has a positive impact, clarifying the cause would apply to policy proposals in Japanese companies.

This research trip has shown that there are still many challenges in achieving true D & I even in advanced diverse countries. However, it also says that including/focusing “all” employees, not a particular group of employees, for making practices/policies would be the first step to implementing a “true” diversified workplace. In this regard, the trip was fruitful enough to find suggestions and hints for making the first step.

References

- EIGE. (2020). Gender Equality Index 2020: Sweden. October 28, 2020. Retrieved December 15, 2021, from <https://eige.europa.eu/publications/gender-equality-index-2020-sweden>
- Gibson, D. E. (2004). Role models in career development: New directions for theory and research. *Journal of vocational behavior*, 65(1), 134-156.
- Ministry of Labor, Health and Welfare (2013). Mentor seido dounyu / Role model fukyu Manual [The handbook for introducing mentor system and role models]. Retrieved January 7, 2022 from: <https://www.mhlw.go.jp/file/06-Seisakujouhou-11900000-Koyoukintoujidoukateikyoku/0000106269.pdf>
- Ministry of Labor, Health and Welfare. (2013). *Mentor System Introduction/Role Model Dissemination Manual*, Retrieved December 15, 2021, from <https://www.mhlw.go.jp/topics/koyoukintou/2013/03/07-01.html>
- Mizoguchi, Y. (2021). Career Keisei Shien ni okeru Role Model no Kinou to Kankei-sei [Functions and relationships of role models in career development support]. *Bulletin of Graduate School of Education*, Kyoto University, 67, 375-388.
- Ota, M. & Maeda, J. (2021). Bunken ni miru waga-kuni no kango kyouiku ni okeru role model no gainen. *Nagano Kango University Journal*. 11, 51-61.
- Roberson, Q. M. (2006). Disentangling the meanings of diversity and inclusion in organizations. *Group & Organization Management*, 31(2), 212-236.
- Sunaguchi, B. (2021) Josei no Shoshin-Iyoku ni kansuru Role-model-ron no Riron teki Kenkyu [Theoretical study of role model theory on women's willingness to promote. Society and management]. *Journal of society and management*, Sugiyama Jogakuen University, 18, 71-91.
- Waki, Y. (2019). Diversity to Inclusion no Gainen-teki Sai no Kousatsu [Consideration of the conceptual difference between diversity and inclusion]. Kushu-Sangyo University.
- Watanabe, M. (2006). Josei no Career keisei shien no arikata: “Role model ni kansuru chousa-kenkyu” [How to support female career development: From the results of “Survey research on role models” no kekka kara. *National Women's Education Center Research Journal*. 13, 16-26.

“保险+期货”下的广西糖料蔗收入保险研究

GUANGXI SUGAR CANE INCOME INSURANCE UNDER “INSURANCE+FUTURES”

江建明

Jianming Jiang

泰国正大管理学院中国研究生院

Chinese Graduate School, Panyapiwat Institute of Management, Thailand

*Corresponding author, E-mail: 294798745@qq.com

摘要

本文利用 2009-2019 年广西 14 市的糖料蔗单产数据、郑州商品交易所白糖合约交易价格以及现货价格数据，运用小区域单产估计法---密度比模型对广西 14 市糖料蔗单产分布进行估计，基于 Clayton Copula 连续函数构造了广西 14 市单产和价格的联合分布函数，对不同保障水平下的广西糖料蔗收入保险费率进行了测算。研究表明，本文所构造的方法是有效的，不同保障水平下广西不同地市的糖料蔗收入保险费率存在差异。最后，本文对广西糖料蔗收入保险的开展提出了相关建议。

关键词：广西糖料蔗 收入保险 密度比模型 Copula 方法

Abstract

In this paper, based on the sugar cane yield data of the 14 cities in Guangxi from 2009 to 2019, contract transaction price of the white sugar and the spot price data of Zhengzhou Commodity Exchange, the small area yield estimation method—the density ratio model is employed to estimate the sugar cane yield distribution in the 14 cities. By means of the continuous function—Clayton Copula, the joint distribution function of the unit yield and the price in the this 14 cities is constructed, and the insurance premium rate of sugar cane income under different guarantee levels is calculated. This research demonstrates that the method constructed in this paper is effective, and there are differences in the rates of the sugar cane income insurance in different regions and cities under different security levels. Based on this research, some pertinent suggestions on the development of sugar cane income insurance in Guangxi are offered in this paper.

Keywords: Sugarcane of Guangxi, Income Insurance, Density Ratio Model, Copula Method

引言

近年来,中国农业保险在近年来越发受到重视,近年来,中国农业保险在近年来越发受到重视,在 2016 - 2018 年相继出台的中央 “一号文件” 强调农作物收入保险创新和发展的重要性,目标价格保险制度、价格指数保险、收入保险和完全成本保险等险种陆续进入试点和推广阶段。2016 年以来,中央 “一号文件” 连续 5 年聚焦收入保险的试点和发展,2019 年财政部、农业农村部、银保监会和林草局四部门联合印发《关于加快农业保险高质量发展的指导意见》,提出到 2022 年收入保险将成为我国农业保险的重要险种。2021 的中央一号文件再次提出扩大三大粮食作物完全成本保险和收入保险试点范围。由于农作物收入保险可以同时降低产量和价格造成的风险,保障种植户收入,因此农作物收入保险是未来建立建全农业保险体系的重要内容 (安毅 & 方蕊, 2016)。

广西是国内最大的糖料蔗产区,其糖料蔗产量连续 20 个榨季位居榜首,产量占到全国的三分之二,蔗糖业已成为广西最具优势的主导产业 (周红梅, 2016)。自 2006 年广西正式启动政策性农业保险试点以来,糖料蔗保险产品不断完善和创新,目前主要开办有政策性糖料蔗种植保险、糖料蔗价格指数保险和白糖 “保险 + 期货” 价格指数保险。目前,广西主要实施推行糖料蔗保险产品,在销售价格和种植成本方面给蔗农提供了一定程度抵抗市场风险和自然灾害的保障,但还存在以下问题。一是保障不够全面。就险种结构而言,现行糖料蔗保险产品仍停留在单一风险保障上,即对自然灾害、意外事故等生产风险的保障或对蔗糖价格波动引起市场风险的保障,不完全具备收入风险保障功能。二是保障程度有限。政策性糖料蔗种植保险每亩最高赔付金额为 800 元,这个金额是依据 2004~2011 年糖料蔗平均物化成本的 80% 来确定的,而糖料蔗种植成本已基本达到 1400 元/亩,赔付金额仅能保障再植成本,无法完全覆盖蔗农面临的实际损失。三是运行机制不完善。糖料蔗价格指数保险属于政策性农业保险,是中央和地方财政资金补贴险种,根本目的是为了保障和维护蔗农的种植收益,糖厂作为市场化运营主体,其经济效益应当由市场化操作确保,不应依靠政府财政补贴资金进行保障。四是可持续性有待加强。目前白糖 “保险+期货” 价格指数保险 2019 年在广西罗城县试点开办,保费补贴大部分来自于商品交易所的补贴,缺乏中央、自治区财政的补贴支持。2020 年白糖 “保险+期货” 价格指数保险进行了推广,其推广效果仍然有待通过实践验证。广西糖料蔗收购价格从 2019/ 2020 年榨季起退出政府指导价格管理,实行市场调节价,糖料蔗收购价格不再采取蔗糖价格挂钩联动、二次结算的管理方式,这意味着在市场冲击影响之下,一旦蔗价糖价下跌,现行的主要糖料蔗保险产品保障效果有限,蔗农面临的收入风险仍将处于暴露状态。收入保险可以同时价格和产量进行保障,具有较好的应用前景。但对于广西糖料蔗收入保险,由于产量数量较少,另外糖料蔗收购以糖料蔗产量计算,但目前期货市场中对应的只有白糖期货价格,如何在二者之间进行转化,是定价过程要解决的问题,因此目前对此相关研究极少,实际推广尚处于理论探讨阶段。

研究目的

为了从理论上丰富收入保险在中国可行性及具体费率测算的研究,为广西糖料蔗收入保险的实际推广提供参考建议。本文运用密度比模型和 Copula 结合的方法以 2009 - 2019 年广西

14 市的糖料蔗单产数据、郑州商品交易所的白糖期货数据以及白糖现货数据为基础进行不同保障水平下收入保险费率的厘定。在此过程中通过使用 Cramer-von Mises 统计指标, 最终使用 Clayton Copula 函数进行糖料蔗单产和价格分布的连接, 通过蒙特卡洛模拟的方法进行费率的计算, 最后根据费率厘定结果, 对广西地区推进 “保险+期货” 模式下的农作物收入保险的持续开展提出相关建议。

文献综述

美国从 1996 年开始实行 “保险 + 期货” 下农作物收入保险的试点以来, 学者们对农作物收入保险的实施条件和优势开展了大量的研究。Meuwissen & Hurine (1998) 认为农作物收入保险的实施需要具备丰富可得的农作物单产及价格数据。Mahul & Stutley (2010) 研究表明收入保险产生的最重要的前提是完善的公共财政和监管政策。从收入保险试点的实施效果来看, Hennessy et al (1997) 发现收入保险降低了提供成本且提高了再分配效率。孙蓉 & 李亚茹 (2016) 认为 “保险+期货” 模式在保障国家粮食安全方面具有提高粮食生产能力、保证国家粮食价格稳定、降低国家粮食产量波动等功效。李亚茹 & 孙蓉 (2017) 从农产品价格机制改革的角度出发, 提出 “保险 + 期货” 模式适合最低收购价格的粮食作物、临时存储政策的农产品和生产者定额补贴的农产品。

研究收入保险的核心问题在于费率的测算。Copula 方法是目前研究的主流方法, 主要用于价格和产量边际分布。美国作为利用期货市场分散农业风险较早的国家, 其主要的农作物收入保险在进行价格边际分布测定时均以农产品期货合约价格为基础。Stokes (2000) 指出保险的行为像一种看跌期权, 保险公司可以使用不同执行价格的期权作为风险管理工具。由于保险和看跌期权之间的这种相似性 (Mahul, 2003), 在计算收入保险费的过程中普遍采用的方法是假设期货价格服从某种确定的分布。对于目标产量的确定国外学者大多基于实际历史产量法 (APH), Botts & Boles (1958) 认为以产量服从正态分布为前提的 APH 法可以应用于制定农作物保险费率。后来的研究中, Wu & Zhang (2012) 提出一种灵活的非参数密度估计方法, 采用来自相邻地理单元的短面板数据对作物产量分布进行估计。

目前对于广西糖料蔗的保险研究大多数还是从政策性保险和区域产量保险为主, 如卢业飞 & 刘全跃 (2017) 对广西糖料蔗价格指数保险试点工作进行了研究, 唐金成 & 曹亚楠 (2013) 对广西糖料蔗种植保险的发展进行了比较详细的分析, 廖雪萍 et al. (2014) 对广西甘蔗主产区的产量灾损风险进行了评估, 如马改艳 & 周磊 (2018) 从广西糖料蔗的区域产量特点对广西糖料蔗区域产量保险的风险区进行了划分, 陆琬佳、禰维言 (2021) 从广西糖料蔗保险的发展情况分析广西糖料蔗收入保险的可行性和产品的设计, 但对糖料蔗收入保险的费率厘定尚无相关文献进行研究, 因此深入研究广西糖料蔗收入保险的费率计算问题具有重要的理论价值和现实意义。

综合以上文献可知, 中国 “保险 + 期货” 模式下的农作物收入保险费率制定的研究仍然有较大的发展空间, 主要存在的问题: 一是目前中国学者对于农作物产量分布的研究大部分采用的是实际历史产量法, 即 APH, 该方法需要以大量丰富的小区域历史单产数据为基础, 由中国现有的统计年鉴或统计网站缺少时间长度较长的历史单产数据, 而且缺乏小区域的单产数

据。二是，目前对于农作物收入保险定价大多基于 Copula 方法，但对 Copula 方法的选择依据的指标不统一，导致由于 Copula 函数选择不当造成价格和产量的依赖关系分析不全面，出现低估费率的情况。

研究方法

基于密度比模型的广西糖料蔗收入保险费率测算

目前国内统计网站或各省市统计年鉴缺乏完整的县、乡村等更小区域的糖料蔗历史单产数据，本文选取的糖料蔗均以市为单位。但市级数据存在的问题是糖料蔗单产数据样本量较少的问题，本文提出基于密度比的糖料蔗单产分布的估计。

1. 数据来源与预处理

本文采用的单产数据来自于广西统计年鉴，单产=产量/播种面积，为了计算不同城市的费率是否有较大差别，本文选取了广西各市的 2009-2019 年的单产数据，单产数据的单位为：吨/亩。

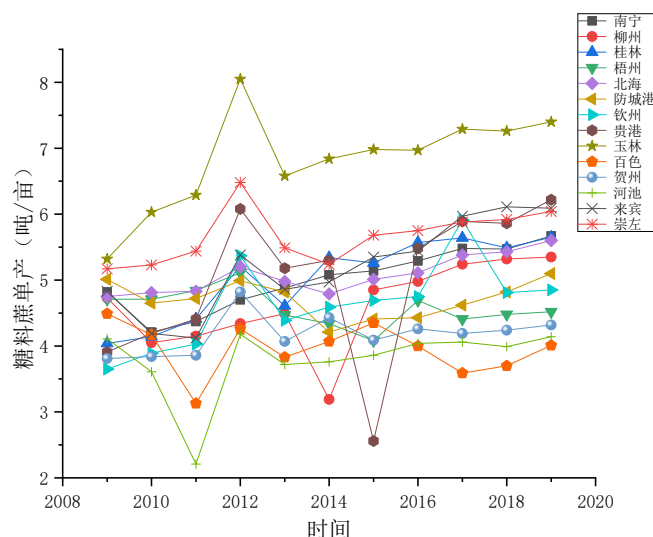


图1: 广西14市糖料蔗单产趋势图

由图可知，广西各地糖料蔗单产的特征为：各地差异较大，近十年总体增长但波动较大的特征。形成这个特征的原因主要是广西各地的气候差异较大，在桂西北如河池，百色雨量偏少，而在桂南如柳州、来宾等地雨量充沛，另外是个别地区进行了优质品种的推广，产量得到了较大提升，还有一部分原因是在南宁等地，种植户普遍采取套种西瓜等其他农作物和通过留取当年糖料蔗根系进行种植，造成产量降低，这一部分产量的降低实际上会影响费率的计算，以及在糖料蔗收入保险实际核算中出现逆向风险问题，因此在糖料蔗收入保险实际保险标的确定过程，这一类套种、留种情况应该排除在外。

结合美国收入保险的定价经验和我国现阶段推出其他产品如水稻、玉米等收入保险的保险产品条款可知，在预期价格的确定上应采用期货价格作为定价基础，这将有助于减轻农户的逆向选择风险，也有利于控制承保风险。为了在费率厘定计算过程中，将最大可能的收入损失考虑到计算过程中，因此在考虑预期价格的基础上，也不能忽略现货价格，本文的现货价格来自广西泛糖交易中心数据 (<http://www.gsmn.com.cn/gxtw/sjzx/index.html>)，最后取现货价格与期货价格中的最大价格作为对应价格。由于糖料蔗收购是以糖料蔗的实际重量（吨）为单位衡量种植户的收入，而对应的期货产品为白糖，但白糖价格与糖料蔗收购价格之间的比可以认为是常数。

由于广西各地区糖蔗种植期限一般为每年的 2-3 月份，生长期为 5-10 月份，11-1 月份为收获期，因此本文在收获价格（实际价格）选择郑州商品交易所次年 11 月份至第二年 1 月份到期期货合约的月平均结算价。而预期价格则选取郑州商品交易所次年 5 月份到期期货合约在承保当年 10 月份的月平均结算价，最后取收货价格和预期价格的最大值作为当年的白糖期货价格，而白糖现货价格也采用同样的时间跨度计算，最后取现货价格与期货价格中的最大值作为当年的白糖价格。本文在时间跨度上选取了 2009 年至 2019 年的数据进行实证研究，价格数据单位为：元/吨。

由于各地市产量数据和价格数据在时间的跨度上较短，时间趋势项不明显且对时间趋势项的二次多项式回归结果不显著，因此先对数据进行预处理操作

用 Y_t^i 表示第 i 个市在 t 时刻的单产数据， P_t 表示 t 时刻的价格数据，若时间趋势项为常数，则单产数据可以表示为 $Y_t^i = \bar{Y}_t^1(1 + \varepsilon_t / \bar{Y}_t^1)$ ， $P_t = \bar{P}_t(P_t / \bar{P}_t)$

其中 \bar{Y}_t^1 表示第 i 个市单产数据的平均值， \bar{P}_t 表示价格的平均值

则 \tilde{Y}_t^1 和 \tilde{P}_t^1 可由以下式子给出 $\tilde{Y}_t^1 = \frac{\varepsilon_t}{\bar{Y}_t^1}$, $\tilde{P}_t^1 = \frac{\varepsilon_t}{\bar{P}_t^1}$

2. 边际发布测定

产量分布的测定：由于本文采用糖料蔗单产数据均以市为单位，目前尚无文献有相关研究经验按照一个确定的分布估计单产数据。因此本文采用密度比模型的方法对单产分布进行估计。根据 (Yvette2017) 的研究，该模型可以有效的解决在数据较少的情况下带来的估计偏差。本章在此基础上，采用上区域估计的密度比模型对单产数据进行解释，密度比模型假设各市的产量概率密度函数 $f_i(x)$ 可以表示为

$$f_i(x) = f_0(x)h_i(x) \quad (\text{式 1})$$

对于 $f_0(x)$ 的估计，采用更加弹性的非参数估计方法，这样可以将所有市级数据进行合并，扩大数据量，参考 (Yvette,2017) 的研究，采用对数样条方法进行拟合 $f_0(x)$ 。由于数据量较少，选用简单的正态分布函数对 $h_i(x)$ 进行估计，最后将两个函数相乘并积分归一化，最终求得第 i 个市的密度函数。

价格分布测定：根据 Goodwin et al. (2000)，价格数据选用对数正态分布进行拟合比较合适。

3. 基于密度比模型的 Copula 函数的收入保险费率计算方法

Copula 连接函数来构造产量与价格的联合分布函数。根据前面得到的第 i 个市的产量分布函数 $F_i(x)$ 和价格分布函数 $G(x)$ ，则第 i 个市产量和价格的联合分布函数可以写成 $C(F_i(x), G(x))$ ，其中 $C(.,.)$ 为二元 Copula 函数。本文待选的 Copula 模型有 Normal Copula, Archimedean Copula 中的 Frank Copula 和 Clayton Copula。本文选择 Cramer-von Mises 统计量衡量经验 Copula 函数到估计 Copula 函数的距离。对某一组独立同分布样本，假设他们的分布来自某一种分布族 F_θ 。假设对这个分布函数的参数进行估计为 F_θ ，样本对应的经验分布函数为 F_n ，则有 Cramer-von Mises 统计量为 $S_n = n \int (F_\theta - F_n)^2 dF_n$ ，从式子中可以发现 S_n 与 $F_\theta - F_n$ 的 L^2 范数呈正相关，即估计函数越接近经验分布函数，则该值越小。因此，可以通过该值选出对所有地市综合程度最接近经验分布函数的 Copula 分布族。

由于各地市数据量较少导致模型准则选定的不一定是最适合的，需要全面地结合所有地市拟合结果，另外在相同的 Copula 模型下，各地市费率厘定的结果具有要更好的可比性。因此假定所有地市的 Copula 函数类为一致的。但由于参数可能会有差异，Copula 模型可能不一致。以 Cramer-von Mises 统计量作为拟合优度检验，第 i 市第 j 种 Copula 模型对应的检验统计量记为 S_{ij} 。一般 S_{ij} 越小，拟合优度越高。记 S_{ij} 在 S_{i1}, S_{i2}, \dots 中的秩为 r_{ij} ，本文选择 $\sum r_{ij}$ 最小的 Copula 模型。

得到概率密度函数后可以通过数值积分或者 bootstrap 的方法来计算费率，本文使用 bootstrap 的方法生成随机数来计算费率。费率的公式如式 (1) 所示：

$$\frac{E(\max\{\alpha E(PY) - PY, 0\})}{\alpha E(PY)} = \frac{E(\max\{\alpha E((1 + \frac{\varepsilon}{Y})(\frac{P}{\bar{P}})) - (1 + \frac{\varepsilon}{Y})(\frac{P}{\bar{P}}), 0\})}{\alpha E((1 + \frac{\varepsilon}{Y})(\frac{P}{\bar{P}}))} \quad \text{式 (2)}$$

其中 α 表示保障水平， $(1 + \frac{\varepsilon}{Y})(\frac{P}{\bar{P}})$ 表示通过 Copula 方法得到的单产与价格的联合分布。

下图给出了所有产量数据整体的直方图，以及基于这些数据使用对数样条估计出的 $f_0(x)$ ，它是图中峰度最低尾部最宽的分布。图 2 中黑线为所有样本的共同基线密度，彩色线为每个城市的个体密度。从视觉上看，不同城市的密度是相似的，因为它们来自一个共同的基线密度。但由于偏差函数的存在，各市的个体密度与基线密度之间存在合理的偏差。通过使各市的概率密度 $f_0(x)$ 与一个期望为 0、方差为各市数据方差的正态分布相乘，可以使产量波动不大的地市的概率密度会更加集中在 0 附近并且产量波动较大的地市会更接近 Log-spline 方法得到的函数。图 3 给出了价格的概率密度直方图和相应的对数正态分布估计。

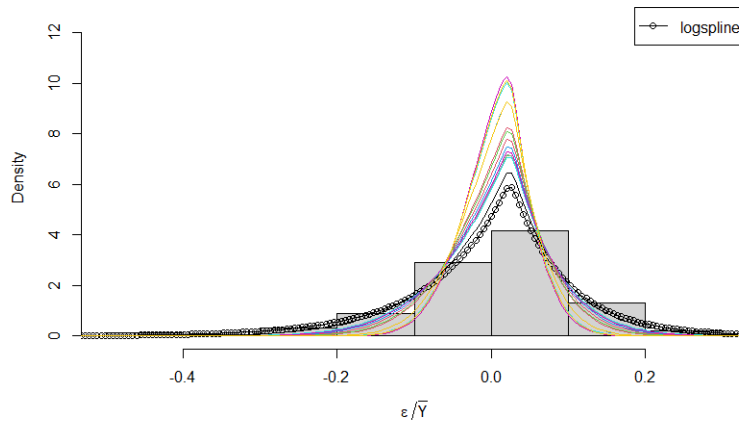


图2: 基于所有产量数据的估计（黑线）以及各市的概率密度的估计

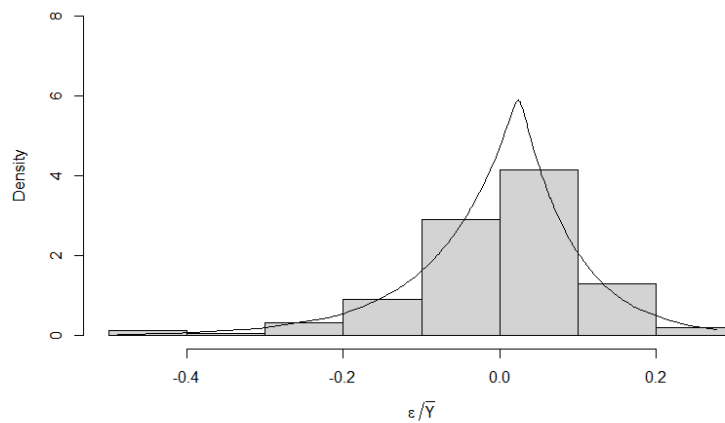


图3: 价格直方图和对数正态估计

表 1 列出了三种 Copula 对应的不同地市的数据估计出的模型的拟合优度统计量。统计量越大, 估计的模型就和经验 Copula 分布相差越大, 拟合优度就越低。由于不同的地市数值没有一定的可比性, 本文首先把每个城市对应的三个 Copula 的统计量转化为有序变量 (如南宁 Clayton Copula 的秩为 3, Frank Copula 的秩为 2, Normal Copula 的秩为 1。其次把这些秩按每个 Copula 分别相加得到表 1 中的秩和。通过表 1 可以看出 Clayton Copula 的秩和最小, 费率计算采用的 Clayton Copula 选择 Copula 的标准是 Cramer-von Mises Statistics, 选择统计量结果最低的值, 所以本文在进行农作物收入保险费率计算时使用的联合分布的 Copula 函数全部选用 Clayton Copula。表 2 列出了糖料蔗收入保险费率的厘定结果。

表 1: Copula 函数统计量结果

地区	Copula 函数		
	NormalCopula	FrankCopula	ClaytonCopula
南宁	0.0849	0.0807	0.1049
柳州	0.1294	0.1250	0.1181
桂林	0.1118	0.1127	0.1064
梧州	0.0981	0.0967	0.0903
北海	0.2525	0.2453	0.2252
防城港	0.1155	0.1153	0.0993
钦州	0.0936	0.0926	0.0793
贵港	0.0831	0.0827	0.0740
玉林	0.3372	0.3160	0.2851
百色	0.1363	0.1416	0.1539
贺州	0.4379	0.4630	0.4424
河池	0.2073	0.2348	0.2000
来宾	0.1522	0.1610	0.1464
崇左	0.1858	0.1835	0.1864
秩和	30	28	19

表 2: 费率厘定结果

地区	保障水平						
	100%	95%	90%	85%	80%	75%	70%
南宁	6.21%	4.20%	2.44%	1.37%	0.59%	0.26%	0.07%
柳州	7.59%	5.35%	3.57%	2.34%	1.33%	0.66%	0.26%
桂林	6.73%	4.64%	2.97%	1.79%	0.93%	0.37%	0.13%
梧州	6.48%	4.33%	2.64%	1.44%	0.70%	0.26%	0.08%
北海	6.39%	4.27%	2.66%	1.49%	0.64%	0.26%	0.08%
防城港	6.28%	4.08%	2.55%	1.28%	0.62%	0.23%	0.07%
钦州	6.63%	4.54%	2.82%	1.57%	0.79%	0.38%	0.14%
贵港	7.46%	5.51%	3.67%	2.38%	1.33%	0.73%	0.34%
玉林	7.15%	5.04%	3.29%	1.98%	1.07%	0.46%	0.19%
百色	5.55%	3.54%	1.97%	1.01%	0.43 %	0.18%	0.04%
贺州	5.56%	3.37%	1.98%	0.83%	0.38%	0.12%	0.04%
河池	5.81%	3.61%	2.08%	1.15%	0.54%	0.21%	0.08%
来宾	7.24%	5.20%	3.38%	2.02%	1.11%	0.58%	0.23%
崇左	5.64%	3.45%	1.96%	0.99%	0.43%	0.14%	0.04%

研究结果

根据上节中表 2 的厘定结果, 当保障水平介于 70%-100%时, 测算得到的各个地市收入保险费率水平介于 0.04%-7.59%之间。柳州在 100%保障水平下测算出的收入保险费率水平大概为 7.59%, 而百色、贺州在 70%保障水平下测算出的收入保险费率水平仅为 0.04%。可能的原因不同地区的自然状况存在差异, 从而农业生产的风险程度不同。并且随着保障水平的降低, 保险的费率也进一步降低。例如, 在 100%保障水平下测算出的南宁市的收入保险费率值为 6.21%, 在 85%的保障水平下测算出的收入保险费率值仅为 1.37%。这是因为对于承保方而言, 保障水平越高风险发生时面临的赔付越高, 因此面临可能存在的较高的赔付承包方需要更高的

风险管理成本。通过表 2 还可以发现, 与美国平均农作物收入保险费率 10% 相比, 本文测算得到的糖料蔗收入保险费率偏低, 可能的原因是由于我国和美国所处的现状不同, 中国收入保险发展相比美国推迟约 20 年。美国在试点初期费率也较低, 但后来随着收入险的全国范围内的推广和更丰富的赔付率等数据的积累, 收入险费率一直在不断调整直到稳定在现在的水平。目前中国农作物收入保险处于试点阶段, 较低的费率和较全面的保障更容易吸引农户对于收入保险的关注和支持, 有利于后期的产品推广和数据积累。从广西 14 个地市的收入保险费率的差异可以说明, 如果测定收入保险费率时选择较小地块的产量数据作为费率测算的基础, 可能能够更好反映收入保险所保障的产量风险的真实情况。因为测算费率中使用的数据为市级的年单产数据, 忽略了更小地区例如县、乡等区域的单产波动情况。因此丰富的农作物单产数据是制约我国农作物收入保险设计的重要因素。

总结

作为广西发展的重要农业产业之一, 广西糖料蔗产业的发展关系到广西蔗农的生产生活, 发展糖料蔗收入保险将成为保障糖料蔗产业健康发展的重要手段。收入保险通过提供更全面的保护, 可以有效的激发农户的投保热情。而影响农户投保的关键因素在于保障范围的不足和赔付情况的不确定。基于上述分析, 本文收集 2009 至 2019 年广西糖料蔗单产数据与郑州商品交易所的白糖期货数据和广西泛糖交易中心数据的现货数据, 通过构建基于密度比模型的 Copula 方法对广西 14 个市不同保障水平下糖料蔗收入保险进行了费率测算, 结果表明该方法是有用的, 同时表明收入保险费率与保障水平有密切的关系, 保险公司承保糖料蔗收入保险也面临着较高的风险, 较高的费率也会影响农户的投保热情, 因此在展开糖料蔗收入保险试点过程的过程中需要保险公司和期货公司积极开展产品的设计, 同时也需要政府在政策上进行支持。

讨论

基于以上结论, 本文认为广西糖料蔗收入保险的发展应从如下几个方面进行完善,

1. 完善糖料蔗收入损失数据库

费率厘定决定了糖料蔗收入保险实施的有效性, 需要大量的精度较高的产量数据与价格数据作为支撑。美国具有较完善的农作物收入损失数据库, 并通过遥感等高科技提高数据采集的效率, 数据涵盖了各个县, 农业部门对数据进行统一的管理, 数据透明, 从而提高了费率计算的精确性。广西目前还没有系统的糖料蔗收入损失数据库, 糖料蔗单产数据收集不够系统科学, 而糖料蔗种植户目前仍然以散户为主也是数据缺失的重要原因。因此, 相关统计部门、主管部门和保险公司应当充分发挥各自优势, 相互配合, 搭建比较完善的以县级为单位的单产、价格、成本、收集等信息, 为糖料蔗收入保险的实施提供强有力的数据支持。

2. 完善白糖期货市场

期货市场的价格已经包含了周期性、长期趋势性等对价格的影响因素, 以期货市场价格来确定农产品保险预期价格较为合理。目前白糖期货价格发现功能较差, 期货价格与现货价格的关联性不够紧密, 这些问题都会导致费率厘定的偏差, 影响糖料蔗收入保险的功能发挥。因此, 应当以法律等手段严格规范期货交易, 强化期货价格发现功能。

3. 完善糖料蔗收入保险财政补贴机制

由于糖料蔗收入保险承保风险较大,开展糖料蔗收入保险需要政府的财政补贴。合理的财政补贴机制,一方面可以减轻保险公司的经营压力,鼓励保险公司进行糖料蔗收入保险的创新,有效提高保险实施过程中的服务质量,推动糖料蔗收入保险的实施,另一方面也有助于提高农户参保的积极性。制定补贴政策的同时,需要加强补贴实施的管理,在进行补贴时充分全面调查农户对保险公司赔付的额度和赔付标准,保障农户的利益,同时打击重复补贴,做到差异化补贴,向规模化种植户、种植企业进行倾斜。

4. 优化糖料蔗收入保险服务工作

在糖料蔗收入保险推广的过程中,政府要加强相关保险政策的宣传。糖料蔗种植户对保险的期望可以概括为“服务要跟上,程序要简化,赔付要及时”。保险公司需要加强相关业务人员的业务能力的培训,在产量核定方面利用先进的技术进行测量计算,保证核定的准确性。

参考文献

- Botts, R. R., & Boles, J. N. (1958). Use of normal-curve theory in crop insurance ratemaking. *Journal of Farm Economics*, 40(3), 733- 740.
- Goodwin, B. K., Roberts, M. C., & Coble K H. (2000). Measurement of price risk in revenue insurance: implications of distributional assumptions. *Journal of Agricultural and Resource Economics*, 25(1), 195-214.
- Hennessy, D. A., Babcock, B. A., & Hayes, D. J. (1997). Budgetary and producer welfare effects of revenue insurance. *American Journal of Agricultural Economics*, 79(3), 1024-1034.
- Mahul, O. (2003). Hedging price risk in the presence of crop yield and revenue insurance. *European Review of Agricultural Economics*, 30(2), 217-239.
- Mahul, O., & Stutley, C. J. (2010). *Government support to agricultural insurance: challenges and options for developing countries*. Washington, D. C. : World Bank Publications.
- Meuwissen, M. P. M., & Huirne, R. (1998). Feasibility of income insurance in European agriculture. In AAEA Annual Meeting. 1998-08-10, (pp. 2003-2008). New York: American Academic Press.
- Stokes, J. R. (2000). A derivative security approach to setting crop revenue coverage insurance premiums. *Journal of Agricultural and Resource Economics*, (10), 159-176.
- Wu, X., & Zhang, Y. Y. (2012). Nonparametric estimation of crop yield distributions: A panel data approach.
- Zhang, Y. Y. (2017). A density-ratio model of crop yield distributions. *American Journal of Agricultural Economics*, 99(5), 1327-1343.
- 卢业飞, & 刘全跃. (2017). 广西糖料蔗价格指数保险试点工作的探索与实践. *安徽农业科学*, 45(28), 214-216.
- 周红梅. (2016). 广西启动糖料蔗价格指数保险试点既赔蔗农又补糖企, 此举属国内首创. *世界热带农业信息*, (2), 21-22.
- 唐金成, & 曹亚楠. (2013). 广西甘蔗种植保险发展研究. *农村金融研究*, (4), 72-77.
- 孙蓉, & 李亚茹. (2016). 农产品期货价格保险及其在国家粮食安全中的保障功效. *农村经济*, (6), 89-94.
- 安毅, & 方蕊. (2016). 我国农业价格保险与农产品期货的结合模式和政策建议. *经济纵横*, (7), 64-69.
- 廖雪萍, 杜裕, 黄梅丽, 李政, 李耀先, 史彩霞, & 林振敏. (2014). 广西甘蔗主产区产量灾损风



- 险评估. *气象研究与应用*, (3), 50-53.
- 李亚茹, & 孙蓉. (2017). 农产品期货价格保险及其在价格机制改革中的作用. *保险研究*, (3), 90-102.
- 陆琬佳, & 禰维言. (2021). 广西糖料蔗收入保险的可行性分析及产品设计. *广西糖业*, (2), 23-28.
- 马改艳, & 周磊. (2018). 甘蔗区域产量保险的风险区划研究——以广西为例. *江苏农业科学*, (11), 358-362.

企业员工激励问题及对策研究——以麦田房产有限公司为例

THE PROBLEMS AND COUNTERMEASURES OF ENTERPRISE STAFF MOTIVATION——TAKING MAITIAN REAL ESTATE CO., LTD. AS AN EXAMPLE

李明昊^{1*}, 池昭梅², 初健³

Minghao Li^{1*}, Zhaomei Chi², Jian Chu³

^{1,2} 泰国正大管理学院中国研究生院

³ 中国宿迁学院艺术与传媒学院

^{1,2} Chinese Graduate School, Panyapiwat Institute of Management, Thailand

³ School of Art and Media Suqian College, China

*Corresponding author, E-mail: 794699568@qq.com

摘要

在企业发展当中, 人力资源十分重要, 已成为企业人力建设的关键因素, 激励已然成为人力资源中最重要的一环。而企业实施激励最主要的目的就是提高员工工作满意度, 并期望员工在实现自身发展的同时, 能够完成组织的共同发展目标。近年来, 房地产行业得以快速发展, 使得对人才的需求不断增加。但是很多公司对人才的重视程度不够, 忽视员工激励的建设, 从而出现员工工作效率低下等问题。本文从员工激励的角度对北京麦田房产有限公司存在的问题进行研究分析, 找出了公司员工激励方面出现频率较高并且具有典型性的问题, 并提出了详细的应对策略, 以期可以将员工的主动性与能动性激起, 挖掘其工作方面的潜在能力, 形成聚合力, 同时还要对公司的人力资源管理制度进行完善, 使其在市场中占据更有利的优势地位。并希望能为其他公司提供较好的借鉴意义。

关键词: 激励 人力资源 组织目标 工作动机

Abstract

In the development of enterprises, human resources is very important, which has become the key factor of human construction of enterprises, and incentive has become the most important link in human resources. The main purpose of the enterprise implementation incentive is to improve the employee work satisfaction, and hope that the employees can achieve the common development goals of the organization while achieving their own development. In recent years, the real estate industry has developed rapidly, thus increasing the demand for talent. However, many companies do not pay enough attention to talents, and ignore the construction of employee incentives, thus causing low employee work efficiency and other problems. This paper saves Beijing Wheat ye Real Estate Co., Ltd. from the perspective of employee incentive Research and analyze the problems, find out the frequent and typical problems, and put forward detailed response strategies, in order to arouse employee initiative and initiative, explore their potential ability, form synergy, and improve the company's human resource management system to occupy a more advantageous position in the market. And hope to provide a good reference significance for other companies.

Keywords: Incentive, Human Resources, Organizational Objectives, Work Motivation

引言

在知识大爆炸的今天，公司的正常经营和运作都离不开人力资源的支撑，对于公司人力资源而言，不仅需要科学的人力资源制度，更需要公司的激励制度来发挥先驱的作用。依照“二八”原则，企业最关键的两成员工所创造的效益约占企业总效益的八成。如何激发这些人员的能力，以此来提高公司的生产效率成为重中之重。较佳的激励环境能够将员工们的工作热情唤起，使其潜力得到充分的展现，特别是在竞争愈演愈烈的当下，必须要防范优秀员工的流失，使该群体的忠诚度得到切实的提升，为员工制定合理的激励方案，只有这样员工才有可能充分发挥自己在公司当中的价值，最大限度的促进公司的发展 (任真礼, 2018)。因此，如何制定一套科学合理的激励方案，留住内部优秀人才，并激发员工的工作潜力，吸引外部优秀人才，提高公司的整体工作效率，是麦田房产有限公司面临的难题，同时也是大多是房产经纪行业需要攻克的难题。

研究目的

激励是指能够从根本上满足员工切身需要的条件，激发员工的工作热情，让其积极主动地投入到工作当中，主动的参与到公司的建设上来，而不是公司通过采取一系列严格的惩罚手段，让员工被迫工作，出现工作效率低的现象。完善的激励方案可以在一定程度上帮助员工提高工作效率，调动工作的积极性，努力实现自身的发展目标，从而促进公司目标的实现。所以，尤其对于房产经纪行业这种销售行业，激励作为关键性的手段，占据着不可或缺的地位。房产经纪行业作为新兴的服务业，麦田房产在员工激励方面还存在着不足，例如：薪酬制度设计不合理，形式较为单一，激励缺乏连续性和持续性；缺乏科学合理的绩效考核制度，虽然有但实施效果较差；缺乏员工职位发展规划，晋升机会少，培训方案不完善；企业文化制度还未完全建立，欠缺凝聚力。结合新形势下的房产经纪行业的现状，建立健全公司员工的激励方案，对公司的可持续性发展具有明显的现实意义。本文站在员工激励的角度对麦田房产公司的发展进行分析，用问卷调查法，揭示出公司员工激励方面存在的普遍且具有代表性的问题，结合房产经纪行业目前的发展缺陷，给出合理化建议，以期可以将员工的工作热情与能动性调动起来，使其产生归属感，并形成聚合力，同时还要对公司的人力资源管理进行优化，从而争取到更多的市场份额。

文献综述

1. 激励的概念

激励具体指的是组织借助对适宜的外部奖励形式以及工作环境的创设，以一定的行为规范以及惩罚性策略，通过信息沟通互动来对员工的行为进行激发、引导、保持、归化，以使组织及其成员个人目标得以达成的系统活动。

员工激励是指借助多个有效的途径，不同程度地约束或是满足员工的各种需要，从而将其需要、动机、欲望激发出来，使其形成某一特定目标，而且在达成此目标期间保持高昂的情绪以及不间断的积极状态，对其潜在能力进行深挖，争取将预期目标加以实现的过程 (郭静宜, 2013)。

2. 激励的表现形式

为了使员工在完成目标的过程中保持足够的积极性，通过各种有效手段来满足员工的差异化需求，形成差异化的激励方式，充分挖掘员工的潜力，以此达到预期的目标。

2.1 物质激励

物质激励主要指的是借助薪酬、奖金、补贴等方式来激励员工，从而将其工作热情唤起。物质激励包括工资待遇、奖金分配、福利待遇等方面，因此与优化的薪酬制度能使员工获得较高的物质需求，并从中拥有满足感和幸福感，这种物质激励的方法已成为目前最主要的激励手段，也是最简单、直接、高效的方法 (李荣华, 2019)。但这种激励方法一开始可能会收到比较好的效果，随着时间的推移可能效果会逐渐降低。

2.2 非物质激励

非物质激励是指激励员工采取非物质化的方式，工作中多用于指精神方面的激励。作为物质激励的重要补充，它已然成为公司激发员工积极性的重要手段。二者应根据激励对象的不同，在一个合理化的范围内，最大化的调动员工工作的积极性。虽然非物质激励大多是无形的，但内容确实丰富多样的。从发展层次来看，其方式以企业文化激励、职位发展激励、绩效考核激励等为主，来进一步满足员工更深层次的需求，促进自我实现和自我发展。但这种激励方法较为复杂，需要企业在更深层次上培养员工的价值观和文化认同 (吴阳阳, 2020)。

研究方法

1. 文献研究法

文献法的主要内容是通过对现有文献的读解，理清研究的脉络，从而奠定自己研究的基础。本文基于激励的概念和激励的表现形式两个部分的相关文献进行了搜集、整理和分析，为本研究的开展提供理论指导，奠定理论基础。

2. 问卷调查方法

为促进公司更高目标的实现，增加员工的满意度，提高工作幸福感，更加认同公司的发展战略，本文以北京麦田房产有限公司为例，以该公司业务经纪人为研究对象，实施问卷调查。问卷内容的设计主要围绕该公司员工现在的薪酬水平、公司绩效考核指标和公司考核制度的透明度，等等。调查目的是分析员工对现行激励制度的满意度，找出现有的激励方案中不合理之处。以匿名形式开展员工激励问卷调查，能够真实地反映出员工对现存制度的满意程度，发现激励方案中不符合员工需求的制度。

研究结果

1. 麦田公司员工激励的现状

1.1 公司概况

麦田房产集团成立于 2000 年 10 月 19 日，2005 年成功在北京设立门店，坐落于北京市朝阳区绿地中心附近。成立以来，经过公司领导以及员工的不懈努力，目前在北京房地产经纪行业中排名前三，公司采取直营的方式，主要致力于居间和代理服务。目前在北京已经设立 282 家门店，员工人数超过 6000 多名。麦田特有的团队精神让麦田服务超越个体之力，在文化上独树一帜，在科技上兼容并包。麦田追求成为社会企业，与同行共存于一个生态圈，维护行业的共同利益，让房产顾问成为快乐的职业。

1.2 公司的组织结构

北京麦田房产有限公司组织结构主要分为两层，公司领导主要为董事长、总经理，并根据总部和业务线划分成两个不同的部门。其中总部设有业务支持部、创新中心部、信

息技术部、财务部、人事行政部；业务线主要由各个大区的经理负责，下设店经理、经纪人，由公司统一管理。具体如图 1 所示。

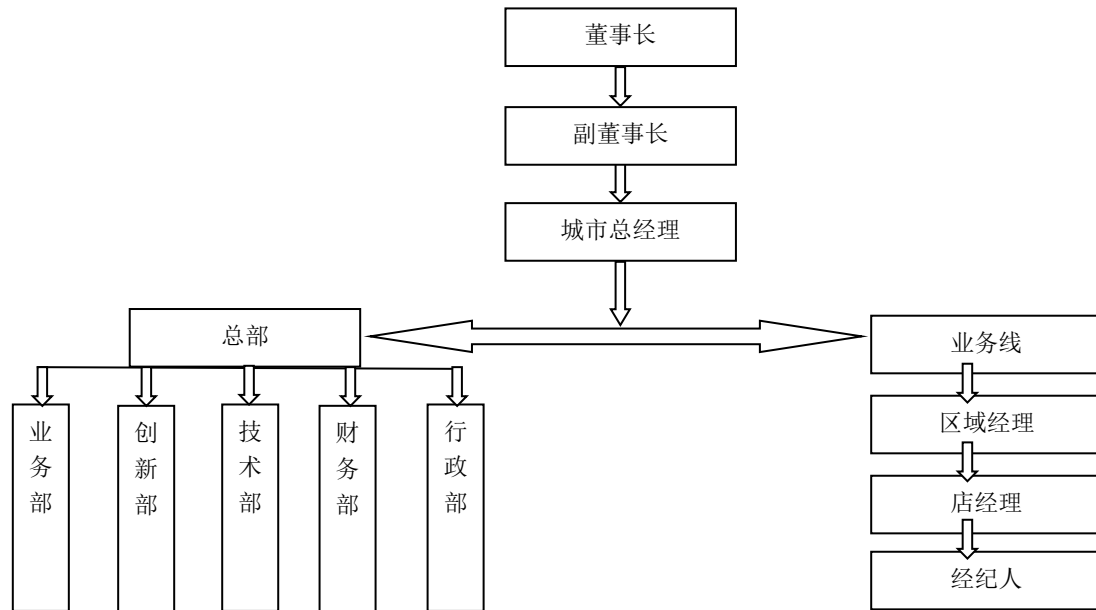


图1: 组织结构图

2. 麦田公司员工激励的现状分析

2.1 员工基本情况分析

(1) 公司员工层级分布

本文以北京麦田公司业务线西大区为主要研究对象，该区域员工一共有 253 人，其中高层管理者最少，仅为 1 人，普通员工占 77%。如表 1 所示。

表 1: 公司员工层级分布表

员工层级	人数	占总体百分比
高层管理者	1	1.5%
中层管理者	9	3.5%
基层管理者	47	18%
普通员工	196	77%
合计	253	100%

(2) 公司员工性别分布

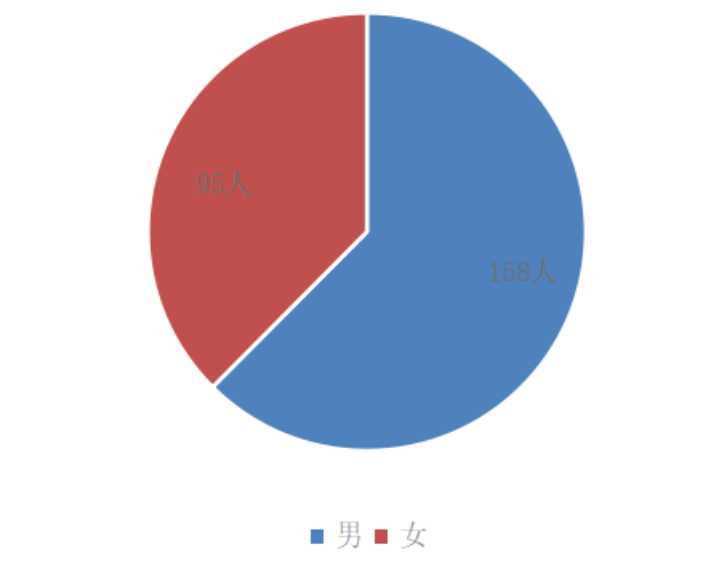


图 2: 公司员工性别构成图

如图 2 所示。北京麦田公司员工男女比例大概为 2: 1, 该区域有男性员工 158 人, 女性员工 95 人。因为该公司是房产经纪行业, 从根本上来讲还是属于销售行业, 性别比例分布基本符合行业内部的规律。

(3) 公司员工年龄分布

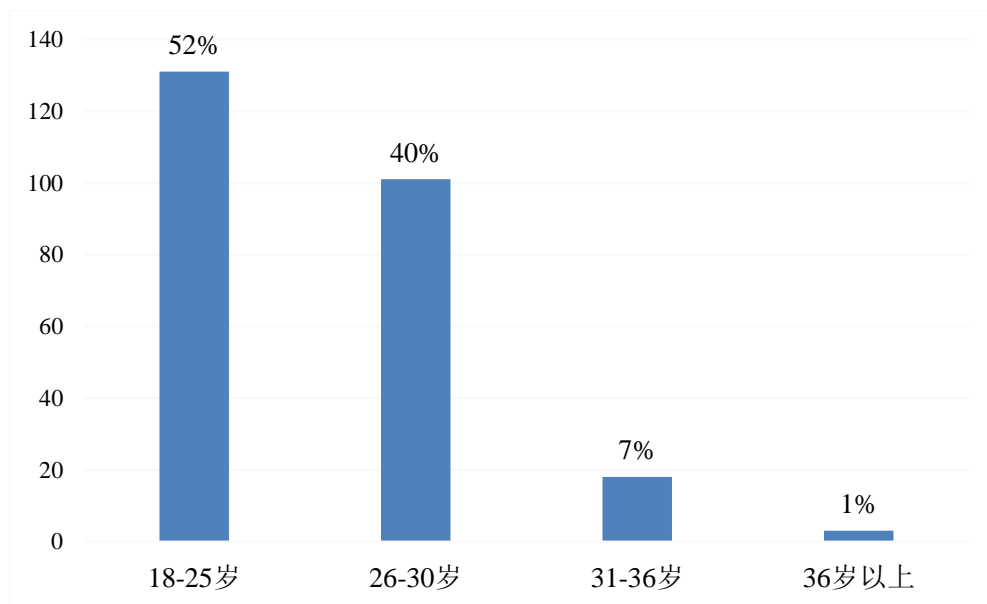


图 3: 公司员工年龄分布图

从图 3 中可以明显的看出，年龄差别较大，18-25 岁的员工占 52%，其次是 26-30 岁的有 40%，30 岁以上的则仅仅为 8%左右，说明该行业的从业人员普遍偏向年轻化。这也正是因为销售行业的特殊性决定的，销售行业人员流动比较大，且具有很大的工作强度，尤其是对于北京麦田这种处于成长阶段的公司，更需要年轻的力量帮助公司发展壮大。

（4）公司员工教育分布情况

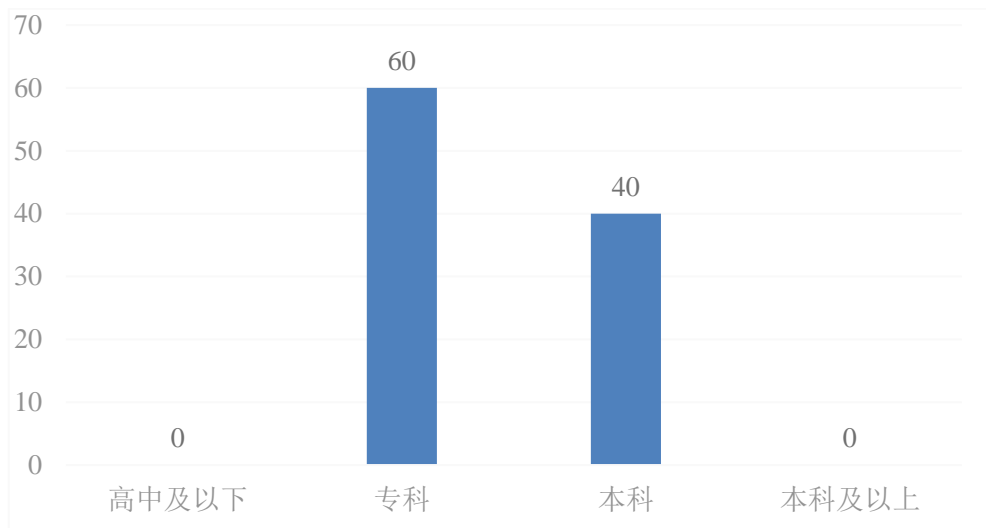


图 4：公司员工教育情况分布图

从图 4 可得知，公司大多数员工专科和本科毕业，销售行业对一个人的要求也比较低，对专业素质的要求更低，导致公司可能会出现鱼龙混杂的情况，而这就会在一定程度上对行业造成不利的影响，所以应加强员工培训，提升员工的素质和能力。

（5）公司员工工作年限分析

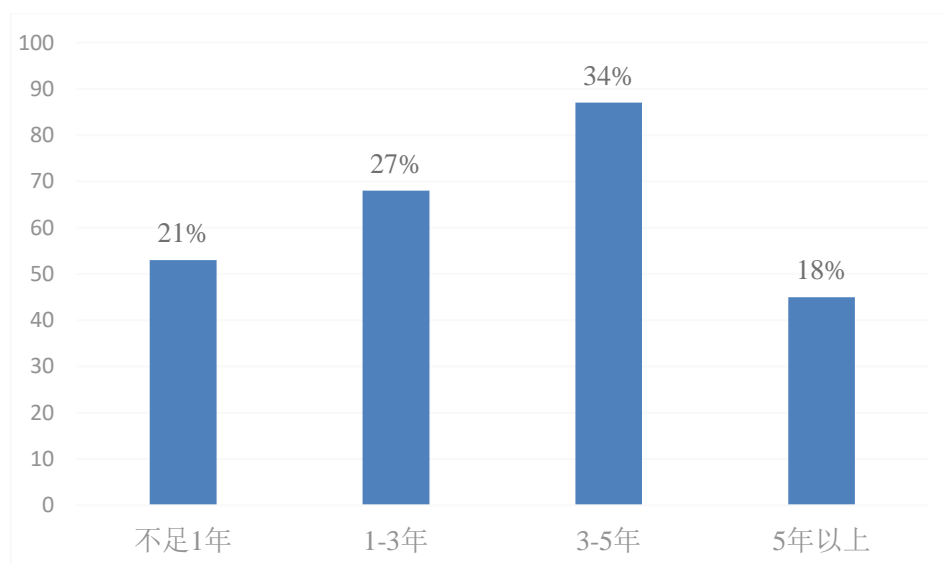


图 5：公司员工工作年限分析图

从图 5 中可以直观的得知，员工工作年限相差不大，较为均匀，这也说明公司有独特之处，能够吸引和留住员工，但大多数员工是在公司工作 1-5 年的，公司可以通过改进企业文化，来吸引和留住更多的优秀人才。

2.2 员工激励方案现状

（1）物质激励方面

麦田公司员工的薪酬激励主要包括两方面，分别是基本工资和提成，员工薪酬水平的高低，靠自己的销售业绩来决定的，公司会从业绩里面扣除 15%，然后剩下的业绩双方按照一定的业绩比例进行平分，并按照平分的业绩再乘以自己的抽成，就是最后员工所得到的工资。对于转正后或者是提点高的经纪人来说，可以通过高提点获得高额的报酬；但对于刚入职的员工，还有一个转正的考核，如果没有转正之前，签一单买卖的抽成只有 10%，与转正后的销售人员相差一倍。另外，租赁方面新员工的抽成也要比转正后相差一倍。

麦田公司员工在福利方面设有“五险”，没有住房公积金。设有专门的“麦基金”，是为帮助家庭困难、遇到重大突发事件等导致贫困的内部员工，解除后顾之忧，安心工作。如果表现良好还会颁发相对应的奖项并给予物质方面的奖励。

（2）非物质激励方面

现如今，麦田公司非物质激励主要有以下三个方面。

1) 绩效考核激励

绩效考核方面主要有销售业绩考核、工作态度考核，比较单一，其中销售业绩考核方面包括工作过程和工作成果考核，工作过程考核有员工房源量、客户量、委托率、钥匙率、带看量等，工作成果考核主要为成交的业绩；工作态度考核即出勤率的考核。初步建立了有关绩效考核的相关制度，但在具体的执行过程中，难免出现过度重视销售业绩考核而忽视工作态度考核的结果，导致考核缺乏客观性和公正性。另外考核主体一般为该区域的管理者，较为单一，缺乏全面性。

2) 职位发展激励

麦田公司的发展处于上升阶段，在同行业中有一定的地位，员工跟随公司的发展步伐，未来的职位发展还是很清晰的。麦田公司员工晋升规则是经纪人、菁英、储干、见习店长、店长、区域经理、大区经理、城市总经理，经纪人在整个晋升过程中主要依靠个人的业绩，个人业绩足够高才有晋升的机会，如果经纪人的业绩上不去，那么他的职位晋升也就不太可能实现。另外，公司晋升中存在着领导推荐的现象，没有形成良好的自荐形式。

在培训方面，公司会给新入职的员工提供为期五天的培训，主要讲解公司的文化、制度、房产经纪行业的发展等，让员工在培训中进一步了解公司，加深对行业的认知。后期新老员工的培训内容大致相同，缺乏员工需要的最核心的专业方面的培训，从而出现培训不符合员工需求的现象。

3) 企业文化激励

麦田公司的企业文化独具自身特色和魅力，麦田的“五行”分别为感恩、本真、专注、精进、正向，“一道”为利他。公司全部人员也一直践行公司的文化，并获得了很好的口碑。在企业文化的指引下，公司内部人员朝着共同的目标前进，营造出和谐的家庭氛围，让员工在工作中感受到快乐，感受到个人价值。公司经常开展公司文化方面的学习，并不断的根据时代的发展变化，完善公司的文化。

3. 麦田公司员工激励调查问卷

3.1 调查目的

本文以北京麦田房产有限公司为例，研究对象是该公司业务经纪人，调查目的是分析员工对现行激励制度的满意度，找出现有的激励方案中不合理之处。以匿名形式开展员工激励问卷调查，能够真实地反映出员工对现存制度的满意程度，发现激励方案中不符合员工需求的制度，并根据员工的实际需求制定人性化的激励方案，增加员工的满意度，提高工作幸福感，更加认同公司的发展战略，以此促进公司更高目标的实现。

3.2 调查问卷分析

为了更好的分析麦田公司员工激励的现状，根据北京麦田公司的现有的激励政策，以及人力资源分布情况，本次调查问卷主要在四个方面分析，分别是薪酬福利、绩效考核、职位发展、公司文化。发放问卷时采取随机抽选的模式，以此保证调查问卷的合理性和科学性，本次调查问卷一共发放了 150 份，收回 135 份，问卷回收率是 90%，其中有效问卷为 130 份，有效率是 96%。在问卷调查的全部过程中，采取了不记名的方式，填好后直接收回，保证了整个调查问卷的严密性和科学性。

为将调查问卷更好的传达出来，分别对问题的答案非常满意、比较满意、一般、不满意、非常不满意，按照 5-1 赋予不同的分数值。平均值越高，说明员工满意度就高，实施的激励效果越好；反之，平均值低的满意度越低，相应的激励效果也不太明显。并将问卷汇总分类，分别从员工薪酬福利、绩效考核、职位发展、公司文化四个方面对北京麦田公司存在的问题进行分析研究，其基本情况如下：

(1) 公司员工薪酬福利激励

公司在员工薪酬福利激励方面的具体调查结果，如表 2 所示。

表 2： 员工薪酬福利调查数据

模块	问题	非常满意	比较满意	一般	不满意	非常不满意	平均值
薪酬福利激励	目前的薪酬激励满意度	14	34	48	19	15	3.4
	公司目前的奖金分配满意度	6	15	32	59	18	2.5
	公司目前的福利待遇满意度	2	9	21	68	30	2.1
	薪酬具有差异性，能否切实反映员工实际绩效水平	14	57	33	14	12	3.4
	公司薪酬水平是否具有竞争性	25	31	39	21	14	3.2

从调查问卷结果的数据分析可得知，麦田公司员工整体上对员工薪酬激励满意度不高，薪酬激励的满意度较高，达到 3.4 分；薪酬的差异性也能够普遍反映员工实际的绩效水平，也达到了 3.4 分；公司薪酬水平具有竞争性，平均只在 3.2 分；公司奖金分配的

满意度较低，薪酬满意度在 2.5 分，福利待遇满意度 2.1 分。北京麦田公司的薪酬处于中间偏上的水平，在同行业领域中还是具有一定的竞争性，说明公司在薪酬激励方面还是较为丰厚的，而且薪酬能够普遍反映员工实际的绩效水平，但是奖金分配和福利待遇制度没能很好的满足员工的需求。总体来说，麦田公司应加强薪酬方面的建设，提高市场竞争力，吸引和留住优秀人才。另外公司在奖金分配和福利待遇上不是很合理，公司应根据员工的实际需求满足制定科学合理的激励方案，提高员工满意度。

(2) 公司绩效考核激励方面

公司在绩效考核激励方面的具体调查结果，如表 3 所示。

表 3: 员工绩效考核调查数据

模块	问题	非常满意	比较满意	一般	不满意	非常不满意	平均值
绩效考核激励	公司绩效考核指标合理，与公司战略目标一致	8	36	40	42	4	3.0
	绩效考核制度完善，能得到有效执行	14	24	33	25	34	2.7
	公司绩效考核能否反映员工实际工作水平	11	37	40	35	7	3.1
	公司考核公正透明，具有说服力	9	25	37	33	26	2.6

由上述分析可知，公司绩效考核指标合理的平均值在 3.0 分；绩效考核能否反映员工实际工作水平的得分是 3.1 分；绩效考核制度完善，能得到有效执行的平均值在 2.7 分；公司考核公正透明，具有说服力的平均值在 2.6 分。说明公司已经建立了较为健全的绩效考核制度，并能够反映员工实际的工作水平，但执行力和考核公正度较差，造成绩效考核激励结果不太理想。

(3) 公司员工职位发展激励方面

公司员工职位发展激励方面的问卷调查分析结果，如表 3-4 所示。

表 4: 员工职位发展调查数据

模块	问题	非常满意	比较满意	一般	不满意	非常不满意	平均值
职位发展激励	是否重视员工职业发展生涯规划	21	26	34	33	16	3.0
	公司晋升是否公平公正	23	26	31	29	21	3.0
	职位是否符合付出	18	34	43	27	8	3.2
	公司培训是否符合实际需要	16	21	34	36	23	2.8
	公司是否开展定期培训，来满足员工的需要	25	26	29	27	23	3.0

从表中的数据可以看出，公司的员工晋升还是较为合理的，平均值都在 3.0 左右，职位符合付出达到 3.2 分，重视员工职位发展、晋升公平公正、定期开展培训来满足员工需求平均值为 3.0 分，公司培训符合实际需要在 2.8 分。说明大多数员工满意目前的职位发展制度，公司还是重视内部员工的晋升的，并为每一位员工提供了培训的机会，只要能力足够，就有机会得到进一步发展的机会。但由于市场是不断变化的，行业也是动态发展的，公司还是应该有忧患意识，及时调整职位发展方案，防范未来出现的各种不确定因素 (胡月明, 2020)。

(4) 公司文化激励方面

公司文化激励方面的问卷调查分析结果，如表 3-5 所示。

表 5: 公司文化激励调查数据

模块	问题	非常满意	比较满意	一般	不满意	非常不满意	平均值
公司文化激励	对目前的文化激励是否满意	26	35	39	24	6	3.4
	是否认同公司的文化愿景和发展战略	34	39	37	12	8	3.6
	是否满意公司团队合作的氛围	28	41	39	18	4	3.5
	公司管理者决策是否听取员工的意见和建议	18	33	44	21	14	3.1

从上表的数据可以得知，员工很认同公司的文化，且对公司文化的认可高于员工薪酬福利激励、绩效考核激励和职位发展激励，员工认同公司文化愿景和发展战略平均值达到了 3.6 分，员工满意公司团队合作的氛围和对目前文化激励满意度分别达到了 3.5 分和 3.4 分，公司管理者决策是否听取员工的意见和建议也达到了 3.1 分。说明公司的文化建设很完善，公司对文化的建设的重视程度较高，并在全公司开展文化建设活动。员工之间工作氛围很融洽，团队之间相互合作，积极执行公司的文化和参与文化的建设，提高了员工的参与度和归属感，从而利于公司文化激励方案的建设。但是为了更好地提高公司的影响力，公司还应从更高层次上提高全体员工对文化的认同感，并让每一位员工积极参与到公司的文化建设上来。

总结

1. 麦田公司员工激励存在的问题

1.1 薪酬激励未见成效

据开展的问卷调查数据显示，只有 37%的员工对于公司现有的薪酬激励表示满意/比较满意，有超过 6 成的员工表示一般甚至不满意，薪酬激励效果并未显现出来。现如今，公司所运用的薪酬结构较为单一，具体是底薪加提成，就工资而言，底薪比较低，提成占据很大的比重，如果员工前期不签单，尤其是对于新入职的员工压力会非常大，加之在京工作的人员生活成本高，容易产生付出与收入不成正比的情况，这样一样很多没转正的员工便会选择离职。从奖金方面看，奖金分配相对于员工的薪酬收入比例较低，根据上述分析也可得

知员工对公司的奖金分配满意度较低，奖金分配上缺乏灵活性，对员工激励作用收效甚微。同时薪酬在同行业中虽然具有一定的竞争性，薪酬水平方面吸引力还不够。从长期来看，还是应该完善公司的薪酬结构，吸引优秀人才，减少人员的流失。虽然高额的佣金对员工有较强的激励性，但麦田房产有限公司在薪酬激励方面还是具有很大的不稳定性，难以发挥出有效的薪酬激励效果。

现阶段麦田房产有限公司过于关注员工工资水平的高低，对于福利待遇激励方面的重视程度还不够。经纪人的福利无差别，福利内容几乎没有变化，对员工的吸引力逐渐降低，虽然公司投入了一定的成本，但没有起到真正激励员工的目的 (王晓宁, 2020)。说明公司对于员工的实际需求未得到充分重视，对该方面的分析过少，只满足了员工的保健因素，忽视了真正对员工起激励作用的因素，导致员工缺乏工作的热情和动力。

1.2 绩效激励相对简单

从问卷调查数据结果分析可以了解到，在问道麦田房产有限公司员工对公司绩效考核指标合理，与公司战略目标一致的问题时，只有 34%员工反馈满意/较为满意，大多数员工表示一般甚至不满意。而且在调查与访谈中，员工也表示公司在绩效考核指标内容的设置上相对比较简单，绩效考核的指标大体都是相同的，比较单一，导致考核结果不够全面。考核过程中过于关注员工的销售业绩，忽视了员工维护客户的能力、房源开发的能力、工作努力程度等方面，从而会影响一些工作努力上进但业绩平平的员工，挫伤这些员工工作的积极性，不利于长远的发展。绩效考核主要针对个人，能够比较清晰的反映个人的实际工作水平，但也容易出现员工团队意识差、不参与团队合作的现象。

另外，管理者与员工之间缺乏有效的沟通，员工在整个考核的过程中没有清晰的认知，对于考核的要求也不是很明确。并且管理者也没有根据员工的实际情况及时的调整考核的内容，降低了员工的参与度，降低了员工的工作积极性，出现员工不能有效执行考核制度的现象。考核结果反馈不及时，考核结果一部分是数据，另一部分就是领导的评价，忽视了员工内部之间以及客户对个人的评价，导致考核结果没有很好的群众基础，从而影响了考核的公正透明度，以及说服力，进一步影响绩效考核带来的激励效果。

1.3 员工职位发展激励未规划

就问卷调查来看，在问道员工对于公司“是否重视员工职业发展生涯规划”的反馈中，只有 36%的员工表示满意或者比较满意，但是有 38%的员工表示不满意甚至非常不满意。现阶段麦田房产有限公司在员工职位发展激励与职业发展生涯规划方面仍然存在较大的不足，未能发挥出有效的员工激励作用。因此，麦田房产有限公司还是要完善科学合理的晋升制度，以此保证每位员工都有上升的空间，感受到公司为员工的规划。从初级经纪人的实际情况来看，他们对未来的发展规划还不是很了解，希望较多的尝试一些岗位，找到真正适合自己的岗位，找到工作的乐趣。公司虽然有经纪人工作满一年可以去总部工作的制度，但相对应的调岗条件并没有明确的章程，导致很少经纪人能转岗到总部工作。这种制度导致经纪人的职位发展空间较小，对未来发展方向不是很明确，影响自己的规划，迷失发展方向。

工作年限长的经纪人，或者是已达到最高提点的经纪人，发展空间就变得更为狭窄，薪酬方面也没有很大的变化，导致职位不符合付出，这些经纪人除非向更高处晋升，否则就没有什么发展机会。另外，公司还需确保晋升过程公平公正，全程透明化。这样会形成员工晋升不是通过个人能力和工作业绩而是通过跟领导搞好关系的现象，从而给公司带来不好的晋升氛围。

从数据调查分析上来看,麦田房产有限公司现有的培训体系不完善,员工培训的效果不是特别明显,在后期培训中,不同员工的培训内容也大致相同,无法有针对性的提高不同的员工的职业技能和素质,形成培训不能符合实际需要的现象。培训缺乏激励措施,根据员工需求情况的调查来看,员工对培训的需求较强,更倾向于在业务方面的培训,需要定期开展相关的培训来满足员工工作的需要,以促进员工职位发展的激励。

1.4 企业文化激励还未成熟

现阶段麦田房产有限公司虽然在采取一定的措施进行企业文化激励,但是更多的是进行物质激励、员工培训激励以及员工发展规划激励,尚未构建起一个完善的企业文化体系,从而对员工起到精神激励的作用。在上文调查数据分析中也能看出,麦田公司的文化建设还是非常不错的,企业文化在同行中也较为突出,但还是存在着弊端。房产经纪行业由于从业人员较为混乱、人员素质不一,导致很多经纪人并没有认真落地执行公司的文化,公司大多数员工还是很认可公司的文化的,只有少数认为公司的文化并不重要,他们的团队合作意识较差,业绩也并不是很好。作为一名合格的经纪人除了要有过硬的产品力外,还需要同事间的合作。完善的企业文化是有利于培养全部员工团队合作的意识的,充分发挥精神激励的作用,更能够使员工从内心深处得到激发,从而提高工作效率的。

员工的参与度不够,虽然公司的文化已经初具模型,还需要员工积极参与,发挥员工在工作中的经验,积极为公司的文化建设做出贡献,让公司的文化切实可行的作用到每一个人身上,真实的感受企业文化的魅力,理解企业文化的含义和内涵。在这中间就需要管理者耐心听取员工的意见和建议,不能片面的否定员工的想法;其次管理者还要充分调动员工参与文化建设的积极性,让全体人员参与其中,才能促进企业文化更好的建设,文化激励得到更好的实施效果。

2. 麦田公司员工激励的对策

2.1 制定合理的薪酬福利激励对策

(1) 工资制度改善

企业激励的关键就在于薪酬具有竞争性,公司要设立与市场行业水平相一致的薪酬,并基于此对具有竞争性的薪酬制度进行设立,从而对优秀员工形成强劲的吸引力,并将其留住(张凡, 2020)。在以上分析中可得知,麦田公司的薪酬满意度不高,需要尽快制定符合员工需求的激励方案。一方面,工资可以包括基本工资、工龄工资、职位及岗位津贴、加班工资等,加大工资的范围,依照不同的工作年限、职位级别、岗位的重要程度对员工发放不同的工资。另一方面,增加薪酬对员工的激励作用,根据公司的实际情况,对经纪人划分不同的等级,并不单单是按照经纪人的提成获取工资,而是根据经纪人的能力,将其分为不同的级别,级别高的获得的收佣点数就高,相应的级别低的点数自然也低,而客户也可以根据自己的实际情况选择经纪人,这样来说经纪人就可以通过不断提升自己的能力,来使自己获得更高的工资。

(2) 制定合理的奖金发放制度

为提高麦田公司的市场竞争力,除了加强薪酬方面的激励,还可以制定合理的奖金发放制度,奖金可以包含绩效奖金、团队贡献奖金、学历奖金、年终奖金等(陈伟, 2020)。可以设立奖金池,即按照公司所获得的总收入的一部分放到奖金池,员工的业绩越高、贡献越大获得的奖金就会越多,反之业绩低、贡献少获得的奖金就越少,甚至没有。采用这种方式既不影响员工的工资,又能够在一定程度上促使员工努力工作,因为贡献的越多得到

的就越多，只与自己本身有关，别人工作与否对自己的影响不大，这样获取奖金的方式也比较公平公正。

（3）优化福利待遇

根据调查结果可知，麦田公司在福利待遇方面的激励较差，所以除了工资、奖金等必要的“硬件”之外，公司还应具备不可或缺的“软件”，针对不同的岗位、不同工作特点的员工，应制定不同的福利体系，来满足员工的实际需求。良好的福利体系可以有效地减少人员流失，培养员工忠诚度。可以通过员工完成业绩的不同情况提供不同的休息时间，业绩完成度高的员工可以多休息一段时间，甚至可以凭借业绩完成情况申请不同的假期，或者是报销外出游玩的费用。还可以为贡献程度高的员工提供餐补、住房补助、交通补助等，以回馈员工为公司的付出。又或者为优秀员工设立奖项，并明确奖励的内容，员工可以按照自己业绩的完成程度领取不同的奖品，或者是按照员工的实际需求给予他真正需要的东西。

2.2 完善绩效考核激励制度

（1）丰富绩效考核指标

根据员工的实际情况分析设计，增加过程性的绩效考核指标，拓宽绩效考核的范围 (廖远玉, 2020)。可以从员工的工作态度、工作能力、工作过程、工作结果、他人评价等方面分析设计，而不是仅依靠员工的业绩进行考核。在分析销售业绩时，可以参考房屋美化情况、电话邀请量、微信新增量、带看客户量、社区驻守情况等指标量化。在分析员工工作态度时，可以参考客户满意度、客户评价等指标。还可以新增销售技巧、销售方式的考核。适当的增加这些量化的过程性的考核指标，对于员工考核也会更加科学合理。

在考核的过程中应根据员工的反馈情况，及时对一些不太合理或者是涉及不到的指标进行调整，根据市场以及员工情况，适当增加新的考核指标，完善绩效考核制度，促使员工有效执行，发挥绩效考核的激励作用。

（2）制定绩效反馈方案

制定绩效反馈方案这一过程中，需要绩效考核部门及时准确地将考核的结果反馈给员工，让他们尽快的认识到自己实际的工作水平，发现个人存在的不足之处，及时改正弥补，对于表现好的地方，继续保持并争取得到突破 (孟韵竹, 2020)。公司还应设立专门的人员，对这些考核资料进行归纳整理，长期关注员工的绩效表现。针对一些表现好的员工提供薪酬、奖金等的奖励；对于绩效表现差的员工予以相应的惩罚。通过综合绩效考核的结果，让北京麦田公司的绩效考核激励方案得到有效实施，正、负激励相结合，保证整个绩效考核的过程公正透明，使绩效考核的结果更具说服力。

2.3 完善职位发展激励制度

（1）制定合理的晋升制度

公司的每位员工都对自己的职业规划十分重视，公司应强调每位员工的职业发展前景，规划员工的职业未来发展，促进员工在企业的长远发展，以满足员工晋升的需求。在一定层面上看，岗位晋升与绩效考核是紧密联系的，必须充分考虑到员工的业绩、工作能力、工作态度、为公司的贡献程度等多方面的因素，明确空缺岗位对人员的要求，可以从公司内部找到合适的人员。尤其对于刚步入社会的大学生，可以在公司内部找到适合自己的岗位，并不断明确自己未来的职业发展规划，确保每位员工都能找到符合自身发展特点的途径。

（2）保证晋升过程公开公正

制定并完善晋升机制后，一定要将完整的晋升体系明确通知到每一位员工，全公司人员共同监督，保证晋升过程公开透明，杜绝空降兵 (刘洁, 2020)。新入职员工通

过试用期转正后，可以申请调到公司其他工作岗位，但必须经过上级领导的批准，并参考同部门人员的意见。此外要制定严格的晋升考核机制，让每一位有能力有抱负的员工都有发展的空间，登上属于自己的舞台。

（3）加强培训建设

虽然麦田公司培训的效果比较不错，但还应加大培训的力度，提升培训内容的质量，满足员工的实际需要，以此促进公司员工能力的提升。首先，只有管理者积极投入到培训的建设上来，并积极参与到日常的培训当中，和员工一起学习，才能起到激励和促进作用。其次，制定有针对性的培训方案，需要丰富培训的内容，并定期开展有效、有针对性的培训，内容只有设计一套符合自身需求的培训体系，才能真正发挥到员工培训的意义和价值。可以通过组建专业的员工培训部门，聘请专业的培训团队，健全员工培训的质量。培训还应该按照不同的部门、不同的工作岗位制定不同的培训方案，这样的培训才能达到最好的效果。另外还应丰富培训的内容，拓展培训的范围，根据员工在各个阶段所面临的各种问题，有针对性的制定计划，做到对症下药。

2.4 建立持续激励的企业文化

（1）营造良好的工作氛围

企业的发展离不开友好和谐的工作氛围，企业文化的构建需要依靠员工之间的协作。上文分析得知，虽然麦田员工从业人员参差不齐，团队氛围差，员工之间存在着竞争关系，但对于房产经纪行业来说，想要获得更高的业绩需要团队之间更多的合作。管理者更要勇于承担责任，及时解决员工之间存在的分歧和矛盾，将矛盾化解到最小，确保团队内部的和谐，促进员工之间的交流与沟通，实现共同进步。同时还需要为员工提供工作所需要的各种条件，比如资金、办公设备、业务工具、业务指导等软硬件资源，从而发挥文化激励的导向作用。

（2）培养员工归属感

企业文化的优劣在很大程度上影响着企业文化的建设，积极在全公司开展文化宣传活动，在公司内部创造良好的文化氛围和环境，在一定程度上有利于员工的成长，调动工作积极性。面对公司员工不听从领导者的安排，始终按照自己的想法工作这种现象，就需要培养员工的归属感，让每一位员工都能从根本上认识到公司的文化，意识到公司文化的重要性，由此提高文化激励。尽可能的将企业文化与公司的组织结构和管理制度结合，让全体员工更加认同公司的企业文化，增强自信心，为企业发展贡献力量。同时可以借助微信的优势，利用朋友圈和公众号充分宣扬企业的文化，以网络的形式引导员工参与到企业文化的建设上来，让员工以积极的心态学习企业文化(尹晓星, 2019)。

讨论

本文结合北京麦田房产公司的实际情况，以及麦田公司激励的现状，根据调查结果的分析，设计出一套具有针对麦田公司的有效激励方案，从而在一定程度上激发员工工作的潜力，使公司在市场中占据更多的份额，尽早将企业的战略目标顺利达成。市场环境以及行业的发展状况都是持续多变的，企业应根据实际情况及时适当的进行调整，并不断加以完善。



参考文献

- 王晓宁. (2020). 房地产企业人才规划在人力资源管理中的作用. *人才资源开发*, (4), 68-69.
- 尹晓星. (2019). M 房地产公司财务战略管理问题与对策研究. *中国管理信息化*, (5), 30-31.
- 任真礼. (2018). 中小型企业员工激励存在的问题与对策. *全国流通经济*, (27), 58-59.
- 刘洁. (2020). L 科创公司员工激励机制研究. 硕士学位论文. 西北农林科技大学.
- 李荣华. (2019). 员工激励机制建立与创新探讨. *现代商贸工业*, (29), 71-72.
- 吴阳阳. (2020). 双因素理论视角下房产中介企业员工激励研究. *科技创新与生产力*, (3), 7-10.
- 张凡. (2020). 房地产企业人力资源管理机制创新研究. *企业改革与管理*, (14), 101-102.
- 陈伟. (2020). J 公司 H 项目人力资源管理研究. *中国产经*, (11), 123-124.
- 孟韵竹. (2020). YZ 国有企业员工激励问题研究. 硕士学位论文. 东北石油大学.
- 胡月明. (2020). 制造业企业员工激励问题研究. *企业改革与管理*, (21), 107-108.
- 郭静宜. (2013). 企业人力资源管理中激励机制的探索. *决策与信息*, (10), 120-121.
- 廖远玉. (2020). A 国有企业员工激励机制研究. 硕士学位论文. 云南师范大学.

中国政府扶持在农业产业链优化与区域特色农产品竞争力关系中的调节作用研究
**THE MODERATION EFFECT OF THE CHINESE GOVERNMENT
SUPPORTS IN THE RELATIONSHIP BETWEEN THE OPTIMIZATION OF
THE AGRICULTURAL INDUSTRY CHAIN AND THE COMPETITIVENESS
OF REGIONAL CHARACTERISTIC AGRICULTURAL PRODUCTS**

巩发永
Fayong Gong

泰国正大管理学院中国研究生院
Chinese Graduate School, Panyapiwat Institute of Management, Thailand
*Corresponding author, E-mail: gongfayong@126.com

摘要

采用自编问卷对中国四川省和山东省从事农业种植、农产品加工或者农学和食品加工专业的人士进行随机抽样，随机抽取 116 人探讨政府扶持在农业产业优化与区域特色农产品竞争力关系中的调节作用。采用 SPSS 21 对 116 份有效数据进行信度分析，探索性因子分析，回归分析与调节效应分析。结果发现：政府扶持在生长区域条件、农业产业现状与区域特色农产品竞争力关系中发挥着显著调节作用；政府扶持在加工产业现状、基础设施条件、营销管理水平与区域特色农产品竞争力关系中不存在显著调节作用。本文研究结论将对农业产业链优化、政府制定农业扶持政策及企业提升特色农产品竞争力都有着十分重要的作用。

关键词：农业产业链优化 政府扶持 区域特色农产品竞争力

Abstract

A self-made questionnaire was used to randomly sample people engaged in agricultural planting, agricultural product processing, or agronomy and food processing in Sichuan and Shandong provinces, and 116 people were randomly selected to discuss the adjustment of government support in the relationship between agricultural industry optimization and regional agricultural product competitiveness effect. SPSS21 was used to conduct reliability analysis, exploratory factor analysis, regression analysis and moderation effect analysis on 116 valid data. The results show that government support plays a significant role in regulating the relationship between the growth area conditions, the current situation of agricultural industry and the competitiveness of regional agricultural products; There is a significant regulatory effect. The research conclusions of this paper will play a very important role in the optimization of the agricultural industry chain, the formulation of agricultural support policies by the government, and the enhancement of the competitiveness of characteristic agricultural products by enterprises.

Keyword: Optimization of Agricultural Industry Chain, Government Support, Regional Characteristic Agricultural Products Competitiveness

引言

中国农产品销售难的现象在近年来频繁发生。导致中国农产品供大于求的主要原因除了市场信息不对称外,还有生产规模盲目扩大、区域产业同质化等。发展具有区域特色的农产品产业对于推动农产品产业高质量发展是十分重要的。对于区域特色农产品的研究,目前中国学术界大都是探讨如何发展区域特色农产品及提升其竞争力,而在农业产业链优化与区域特色农产品竞争力关系的实证研究尚存在不足。

研究目的

本研究的研究目的为:通过实证研究探寻农业产业链优化对特色农产品竞争力的影响及政府扶持在此关系中是否存在调节作用。

文献综述

1. 特色农产品

特色农产品是区域内独特的农产品,开发区域内特有的名优农产品转化为特色商品是特色农产品加工的主要目的。在日益激烈的市场竞争环境中,不断保持差异性建立持久竞争优势的关键(熊焱,2011)。特色农产品是指在特定的自然地理环境条件下,依据独特的农产品加工技术手段,将特定区域内独特的农业资源开发出的特有的农业产出品。特色农产品不仅包括在区域分布上的品种特色,而且还包括特色品种精深加工的农产品(钟敏,2012)。这主要表现在:一方面,对于某些具有特定风味、功能或只能在特定生态环境和特定季节生产的特色产品,因其特别而优秀;另一方面,某些农产品就其本身而言不具任何特色,但经过精深加工会大大增加其价值,并在市场上表现出明显的特色和优势。

2. 农产品竞争力

在中国,直到世纪之交,面对国际市场带来的巨大冲击和挑战,理论界、农业界才开始关注农业、农产品的竞争力问题。近年来,专家学者从基础理论研究和实证研究两个维度对农产品竞争力进行了较为深入全面的研究,推出了富有创建的研究成果。

在基础理论研究中农产品竞争力科学内涵的界定方面具有代表性的成果有:农产品竞争力是一个国家的农产品参与国际市场竞争并能够持续获取利润的能力,可以从农业生产效率、农产品质量、农产品价格、市场营销和满足消费者需求程度等多方面表现出来,并贯穿于农产品生产、加工、销售和各个环节(万俊敏,2008)。农业部农村经济研究中心杨丽(2011)把国内学者近年来对农产品竞争力的界定归纳为四个方面:国际市场角度、国内市场角度、竞争潜力角度、竞争力的关键构成要素角度。

在对农产品竞争力的实证研究方面,成果丰硕。王永德(2009)构建了农产品国际竞争力绩效、潜力、实现三层次概念框架,提出了相应的评估指标,认为反映农产品国际竞争力绩效的主导指标是市场份额和盈利性,盈利性的参考指标是效率,反映农产品国际竞争力潜力的主导指标是成本和质量,采用恒定市场份额模型(CMS)对中美农产品国际竞争力进行了实证研究;李真(2010)基于成本优势理论、资源配置理论和竞争优势理论确立分析框架,对四川省主要优势农产品的国际竞争力进行了实证研究。

3. 农业产业链

农业产业链于 20 世纪 50 年代在美国产生，随后在世界范围内得到了充分的发展和完善。在世界农产品产业化和市场化过程中发挥了重要的作用。中国随着市场经济的逐步建立和农业现代化建设步伐的加快，农业产业链问题也越来越受到广泛的重视。

农业产业链是在产业链概念的基础上提出的。国外学者对农业产业链领域的研究起步较早，对农业产业链的内涵也给出了较为清晰的论述（余文权 et al., 2011；崔春晓 et al., 2013）。如 Bhagat 和 Dhar (2011) 以及 Gómez et al. (2018) 在产业链的基础上，提出了农业“纵向协调”的产业发展路径，认为农业产业链是指包括原材料生产、加工、储存运输、销售等活动在内的一系列活动过程（李贞，2015）。在国内，农业产业链的概念最早由傅国华 (1996) 提出，认为农业产业链是依托市场，集中资金、土地、劳动力等生产要素对资源和农产品的合理配置。总的来说，农业产业链是产业链在农业领域的具体应用，它涉及农产品生产、加工、运输、销售等诸多环节，包括农业产前、产中、产后的各部门、组织机构及关联公司以价值链、信息链、物流链、组织网络等形成的有机整体（雷莹，2014）。

4. 政府扶持

本文研究的政府扶持主要是指地方政府通过营造良好区域环境、制定区域规划、完善法律法规、提供财政资金支持、宣传区域优势、搭建公共营销平台，制定发展顶层设计，组织和承办大规模的商展节庆活动等形式，对区域特色农产品的发展起着重要的领导和扶持作用。

5. 农业产业链优化对区域特色农产品产业竞争力的影响

本文在前期论述的基础上以区域特色农产品农业产业链所包含的生长区域条件、农业产业现状、加工产业现状、基础设施条件、营销管理水平五个阶段为自变量，以区域特色农产品产业竞争力作为因变量，政府扶持作为调节变量构建农业产业链优化对区域特色农产品产业竞争力提升的模型。

结合以往学者的相关研究结果，本文把农业产业链优化划分为 5 个维度，分别是生长区域条件、农业产业现状、加工产业现状、基础设施条件、营销管理水平，是影响区域特色农产品竞争力的重要影响因素。

(1) 生长区域条件：农产品特色和社会的认知度形成主要依赖于农产品生长区域的条件。获得地理标志的农产品是典型的特色农产品，农产品地理标志标示农产品来源于特定地域，产品品质和相关特征主要取决于自然生态环境、历史人文因素和历史工艺传承等条件，并以地域名称冠名的特有农产品标志。

(2) 农业产业现状：特色农业的发展关键在于特色农产品品种选育、生产过程的控制以及产品的标准化。

(3) 加工产业现状：农产品加工业是现代农业的重要标志，是建设现代农业的关键环节，是促进农民就业增收、农业增值增效、农村繁荣发展的有效途径。当前特色农产品加工面临加工专用品种选育和原料基地建设滞后、无法满足加工企业全年原料供应、加工水平低、技术装备落后、公共服务不足等突出问题。

(4) 基础设施条件：交通、物流、电信等基础设施建设是农产品加工产业集群对外进行物流、人流、信息流交换的桥梁。

(5) 营销管理水平：特色农产品营销是沟通生产和消费的桥梁和纽带，是农业产业化进程中极为关键的环节，对于开发和挖掘特色农产品市场需求、增强特色农产品市场竞争力、缩短特色农产品流通时间和减少产后损失、推动特色农产品可持续发展具有重要意义。

6. 政府扶持的调节作用

由于政府不是特色农产品加工产业主体，政府尊重市场经济规律，通过对生长区域条件、农业产业现状、加工产业现状、基础设施条件、营销管理水平的整合调节与扶持，影响特色农产品产业竞争力提升。基于此，本文提出如下研究假设：

H：政府扶持力度越大，农业产业链对特色农产品产业竞争力促进作用越明显。

Ha：政府扶持在生长区域条件与特色农产品产业竞争力关系中有正向调节作用。

Hb：政府扶持对农业产业现状与特色农产品产业竞争力关系中有正向调节作用。

Hc：政府扶持对加工产业现状与特色农产品产业竞争力关系中有正向调节作用。

Hd：政府扶持对基础设施条件与特色农产品产业竞争力关系中有正向调节作用。

He：政府扶持对营销管理水平与特色农产品产业竞争力关系中有正向调节作用。

本文理论模型如图 1 所示：

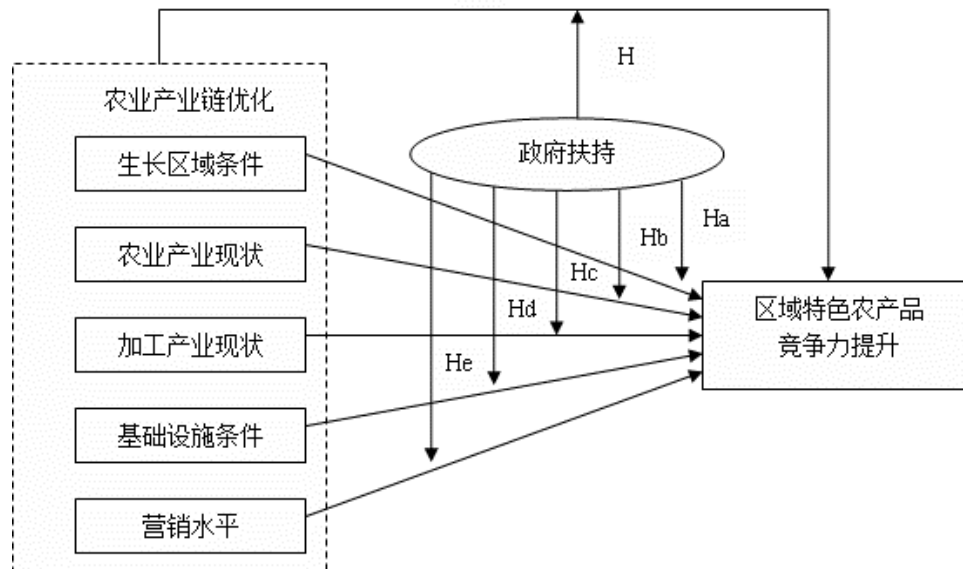


图1：农业产业链优化对区域特色农产品产业竞争力提升假设关系图

研究方法

1. 研究对象

研究以四川省和山东省从事农业种植、农产品加工或者农学和食品加工专业的人士为样本采用随机取样的方式发放 120 份问卷，回收有效问卷 116 份。具体如下表所示：

表 2：样本特征

项目	分类	人数	百分比
性别	男	80	69%
	女	36	31%
教育程度	大专及以下	36	31%
	本科	55	47.4%

表 2: 样本特征 (续。)

项目	分类	人数	百分比
	硕士	21	18.1%
	博士	4	3.5%
工作时间	1 年及以下	15	13%
	1 – 2 年 (含)	25	21.6%
	2 – 3 年 (含)	56	48.3%
	3 年以上	20	17.1%

2. 研究工具

本研究采用自编问卷进行分析，问卷信效度见结果部分。

3. 研究方法

使用 SPSS21.0 及 AMOS24 对回收的 116 份数据进行信度分析，验证性因子分析，回归分析和调节效应分析。

研究结果

1. 信度分析

本文量表的分析主要采用 Cronbach's α 系数判断量表整体可靠性，软件采用 SPSS 21。

表 3: 总体可靠性统计)n = 116(

克隆巴赫系数	项数
0.978	39

从表 3 可知：信度系数值为 0.978，大于 0.7，因而说明研究 39 个指标数据信度质量很高。

2. 验证性因子分析

采用 SPSS21 对样本进行验证性因子分析，结果表明，各测量关系时，标准化载荷系数绝对值均大于 0.6 且呈现出显著性，意味着有着较好的测量关系。分析结果见表 4。

表 4: 因子载荷系数表格

Factor (潜变量)	测量项(显变量)	非标准载 荷系数 (Coef.)	标准误 (Std. Error)	z (CR 值)	p	标准载荷系数 (Std. Estimate)
Factor1	5.主营农产品所在地区农业自然资源富饶，品质优良且声誉口碑好。	1	-	-	-	0.664
Factor1	6.当地气候、土壤、日照和地理等条件适宜某农产品的生长。	1.241	0.187	6.644	0	0.733
Factor1	7.当地水资源丰富，水土环境良好，生产所需生产资料丰富易得。	1	0.165	6.041	0	0.653
Factor1	8.当地的农业资源富有特色，具有竞争力，面向的客户群体广阔。	1.348	0.195	6.909	0	0.772

表 4: 因子载荷系数表格 (续。)

Factor (潜变量)	测量项(显变量)	非标准载 荷系数 (Coef.)	标准误 (Std. Error)	z (CR 值)	p	标准载荷系数 (Std. Estimate)
Factor1	9.当地农产品加工企业人才梯队建设成果显著, 各司其职, 具有人才汇聚的前景。	1.321	0.207	6.369	0	0.695
Factor2	10.非常重视农业标准的普及, 推广行业技术经验并提供专业技术指导。	1	-	-	-	0.747
Factor2	11.农业设施工业化水平较高, 繁琐的人工劳动较少。	1.35	0.149	9.068	0	0.8
Factor2	12.产品合格率和“三品一标”增长率较高。	0.913	0.112	8.169	0	0.73
Factor2	13.运用新型农业科技运作, 产值增长, 效益显著。	1.109	0.115	9.688	0	0.847
Factor2	14.农产品良种使用率持续保持较合理水平。	1.09	0.109	10	0	0.87
Factor2	15.农业机械化高科技化运作, 技术含量高。	1.29	0.137	9.4	0	0.825
Factor2	16.农业合作衔接信息化共享程度较高, 形成良好产业链生态圈。	1.295	0.131	9.899	0	0.863
Factor2	17.经营的农产品质量追溯全部覆盖, 保证产物质量有据可循。	1.316	0.128	10.244	0	0.888
Factor3	18.农产品加工产值效益增长显著, 提升附加值。	1	-	-	-	0.81
Factor3	19.农产品加工转化程度高, 合格率保持较高水平。	1.004	0.099	10.187	0	0.806

本次针对共 5 个自变量维度, 以及 28 个分析项进行验证性因子分析 (CFA) 分析, 共 5 个维度对应的 AVE 值全部均大于 0.5, 且 CR 值全部均高于 0.7, 意味着本次分析数据具有良好的聚合 (收敛) 效度。分析结果见表 5。

表 5: 模型 AVE 和 CR 指标结果

Factor	平均方差萃取 AVE 值	组合信度 CR 值
Factor1 (生长区域条件)	0.502	0.832
Factor2 (农业产业现状)	0.681	0.944
Factor3 (加工产业现状)	0.671	0.924
Factor4 (基础设施条件)	0.768	0.908
Factor5 (营销管理水平)	0.674	0.925

3. 调节效应检验

本文以政府支持作为调节变量, 农业产业链优化为自变量, 区域特色农产品竞争力为因变量, 检验政府支持在农业产业链优化与区域特色农产品竞争力之间的关系。

生长区域条件与政府支持的交互项呈现出显著性 ($t = -2.470$, $p = 0.015 < 0.05$)。意味着生长区域条件对于因变量影响时, 调节变量 (政府支持) 在不同水平时, 影响幅度具有显著性差异。具体分析见表 6。

表 6: 政府支持对生长区域条件优化调节效应 (n=116)

参数	模型 1					模型 2					模型 3				
	B	sem	t	p	β	B	sem	t	p	β	B	sem	t	p	β
常数	3.101	0.087	35.795	0.000**	-	3.101	0.059	52.590	0.000**	-	3.174	0.065	48.956	0.000**	-
X1	0.567	0.090	6.304	0.000**	0.508	0.075	0.075	1.009	0.315	0.067	0.064	0.073	0.873	0.384	0.057
Z1						0.749	0.065	11.536	0.000**	0.772	0.732	0.064	11.471	0.000**	0.755
X1*Z1											-0.120	0.049	-2.470	0.015*	-0.135
R^2	0.258					0.659					0.677				
调整 R^2	0.252					0.653					0.668				
F 值	$F(1,114)=39.737, p=0.000$					$F(2,113)=109.427, p=0.000$					$F(3,112)=78.278, p=0.000$				
ΔR^2	0.258					0.401					0.018				
ΔF 值	$F(1,114)=39.737, p=0.000$					$F(1,113)=133.078, p=0.000$					$F(1,112)=6.101, p=0.015$				

农业产业现状与政府支持的交互项呈现出显著性 ($t = -2.182, p = 0.031 < 0.05$)。意味着农业产业现状对于因变量影响时, 调节变量 (政府支持) 在不同水平时, 影响幅度具有显著性差异。具体分析见表 7。

表 7: 政府支持对农业产业现状优化调节效应 (n=116)

参数	模型 1					模型 2					模型 3				
	B	sem	t	p	β	B	sem	t	p	β	B	sem	t	p	β
常数	3.101	0.073	42.618	0.000**	-	3.101	0.058	53.171	0.000**	-	3.189	0.070	45.581	0.000**	-
X2	0.642	0.063	10.195	0.000**	0.691	0.150	0.079	1.884	0.062	0.161	0.116	0.080	1.463	0.146	0.125
Z1						0.666	0.083	8.028	0.000**	0.686	0.686	0.082	8.357	0.000**	0.707
X2*Z1											-0.088	0.041	-2.182	0.031*	-0.119
R^2	0.477					0.667					0.680				
调整 R^2	0.472					0.661					0.672				
F 值	$F(1,114)=103.939, p=0.000$					$F(2,113)=113.113, p=0.000$					$F(3,112)=79.506, p=0.000$				
ΔR^2	0.477					0.190					0.014				
ΔF 值	$F(1,114)=103.939, p=0.000$					$F(1,113)=64.443, p=0.000$					$F(1,112)=4.762, p=0.031$				

加工产业现状与政府支持的交互项并不会呈现出显著性 ($t = -1.558, p = 0.122 > 0.05$), 以及从模型 1 可知, X 对于 Y 产生影响关系, 意味着加工产业现状对于因变量影响时, 调节变量 (政府支持) 在不同水平时, 影响幅度保持一致。具体分析结果见表 8。

表 8: 政府支持对加工产业现状优化调节效应 (n=116)

参数	模型 1					模型 2					模型 3				
	B	sem	t	p	β	B	sem	t	p	β	B	sem	t	p	β
常数	3.101	0.071	43.548	0.000**	-	3.101	0.058	53.423	0.000**	-	3.166	0.071	44.588	0.000**	-
X3	0.653	0.061	10.656	0.000**	0.706	0.173	0.080	2.159	0.033*	0.187	0.152	0.081	1.876	0.063	0.164
Z1						0.644	0.084	7.653	0.000**	0.664	0.655	0.084	7.808	0.000**	0.675
X2*Z1											-0.064	0.041	-1.558	0.122	-0.085
R^2	0.499					0.670					0.677				
调整 R^2	0.495					0.664					0.668				
F 值	$F(1,114)=113.550, p=0.000$					$F(2,113)=114.729, p=0.000$					$F(3,112)=78.261, p=0.000$				
ΔR^2	0.499					0.171					0.007				
ΔF 值	$F(1,114)=113.550, p=0.000$					$F(1,113)=58.568, p=0.000$					$F(1,112)=2.427, p=0.122$				

基础设施条件与政府支持的交互项并不会呈现出显著性 ($t = -1.089, p = 0.278 > 0.05$), 以及从模型 1 可知, X 对于 Y 产生影响关系, 意味着基础设施条件对于因变量影响时, 调节变量 (政府支持) 在不同水平时, 影响幅度保持一致。具体分析结果见表 9。

表 9: 政府支持对基础设施条件优化调节效应 ($n = 116$)

参数	模型 1					模型 2					模型 3				
	B	sem	t	p	β	B	sem	t	p	β	B	sem	t	p	β
常数	3.101	0.087	35.446	0.000**	-	3.101	0.059	52.451	0.000**	-	3.136	0.067	46.761	0.000**	-
X4	0.472	0.078	6.063	0.000**	0.494	0.041	0.064	0.646	0.520	0.043	0.047	0.064	0.726	0.470	0.049
Z1						0.762	0.065	11.688	0.000**	0.785	0.756	0.065	11.573	0.000**	0.779
X4*Z1											-0.048	0.044	-1.089	0.278	-0.060
R^2	0.244					0.658					0.661				
调整 R^2	0.237					0.652					0.652				
F 值	$F(1,114) = 36.760, p = 0.000$					$F(2,113) = 108.553, p = 0.000$					$F(3,112) = 72.884, p = 0.000$				
ΔR^2	0.244					0.414					0.004				
ΔF 值	$F(1,114) = 36.760, p = 0.000$					$F(1,113) = 136.617, p = 0.000$					$F(1,112) = 1.186, p = 0.278$				

营销管理水平与政府支持的交互项并不会呈现出显著性 ($t = -0.974, p = 0.332 > 0.05$), 以及从模型 1 可知, X 对于 Y 产生影响关系, 意味着营销管理水平对于因变量影响时, 调节变量 (政府支持) 在不同水平时, 影响幅度保持一致。具体分析结果见表 10。

表 10: 政府支持对营销管理水平优化调节效应 ($n = 116$)

参数	模型 1					模型 2					模型 3				
	B	sem	t	p	β	B	sem	t	p	β	B	sem	t	p	β
常数	3.101	0.065	47.815	0.000**	-	3.101	0.056	55.071	0.000**	-	3.140	0.069	45.537	0.000**	-
X5	0.753	0.059	12.662	0.000**	0.764	0.307	0.089	3.469	0.001**	0.312	0.298	0.089	3.340	0.001**	0.303
Z1						0.540	0.087	6.182	0.000**	0.556	0.544	0.087	6.219	0.000**	0.560
X5*Z1											-0.039	0.041	-0.974	0.332	-0.052
R^2	0.584					0.689					0.692				
调整 R^2	0.581					0.684					0.684				
F 值	$F(1,114) = 160.336, p = 0.000$					$F(2,113) = 125.454, p = 0.000$					$F(3,112) = 83.914, p = 0.000$				
ΔR^2	0.584					0.105					0.003				
ΔF 值	$F(1,114) = 160.336, p = 0.000$					$F(1,113) = 38.222, p = 0.000$					$F(1,112) = 0.948, p = 0.332$				

综上所述, 检验政府支持在农业产业链优化与区域特色农产品竞争力之间关系的影响中, 假设 H2a、H2b 得到检验, 假设 H2c、H2d、H2e 没有通过检验。因此, 政府支持在生长区域条件、农业产业现状对区域特色农产品竞争力关系之间具有调节作用。

总结

本文在前期论述的基础上以农业产业链优化 5 个维度为自变量, 以区域特色农产品产业竞争力作为因变量, 政府扶持作为调节变量构建农业产业链优化对区域特色农产品产业竞争力提升的理论模型。并通过对四川省和山东省从事农业种植、农产品或者农学加工和食品加工专业的人士的问卷调查, 获得本文实证分析所需要的第一手数据资料, 通过 SPSS 21, AMOS 24 软件对数据进行假设检验分析, 本文研究结论如下:

政府支持在生长区域条件、农业产业现状对区域特色农产品竞争力关系之间具有调节作用。假设 H2a、H2b 得到检验，假设 H2c、H2d、H2e 没有通过检验。因此，政府支持在生长区域条件、农业产业现状对区域特色农产品竞争力关系之间具有调节作用，而政府支持在加工产业现状、基础设施条件、营销管理水平与区域特色农产品竞争力关系之间的调节效应没有通过检验。

讨论

促进农业产业链优化，是一个地区特色农产品产业保持可持续性高质量发展的必要条件，只有这样才能提升区域特色农产品竞争力。本文的研究结果表明，要想提升区域农产品竞争力，就必须促进农业产业链优化，并通过政府扶持合理调节优化项目。本文的研究启示具体如下：

政府部门需要从生长区域条件、农业产业现状两个方面对其进行扶持，制定农业产业布局和发展规划，为特色农产品产业发展提供税收、补贴、信贷和用地等优惠政策，发展培育规范特色农产品市场体系建设，并积极引导推进特色农产品的安全管理和优良农产品认证等工作，积极开展农业技术教育培训，建立比较完善的特色农产品市场管理机制。

特色农产品本身的特色和知名度是特色农产品产业竞争力形成的根本原因。特色农产品加工产业发展过程中维持或强化农产品的特色，同时提高特色农产品知名度是提升特色农产品产业竞争力的主要途径，是特色农产品加工业能实现高值化和可持续性发展的保证。当地政府应当利用官媒对所属区域的特色农产品进行大力宣传，通过各种平台及各种途径建立属于本区域特色的农产品品牌。在此过程中不能仅重视短期销量，要树立区域特色农产品品牌以达到提升农产品竞争力的目的。

当前特色农产品加工面临加工专用品种选育和原料基地建设滞后、无法满足加工企业全年原料供应、加工水平低、技术装备落后、公共服务不足等突出问题。大力发展特色农产品加工业的重点：是在全面梳理、准确把控、深刻理解国家有关方面已经出台的促进农产品加工业发展的扶持政策的基础上，积极推动政策落实。地方政府更要出台相应的扶持政策，针对农业产业做到具体问题有具体的解决办法。要从根本出发，并不仅仅是引进多少先进的设备，提高多少公共服务。应当组织农民积极学习最新的科学种植方法，只有本区域的农民走出去学习了先进的科学种植知识，了解了市场需求，以及学会了科学的种植技术才能真正的推进农业产业的进步。农业产业的进步远远不单靠技术装备和公共服务的提升，而更应当依靠农民本身科学种植知识及应对市场灵活的应变能力。

参考文献

- Bhagat, D., & Dhar, U. R. (2011). Agriculture Supply Chain Management: A Review. *IUP Journal of Supply Chain Management*, 8(3), 7-25.
- Gómez, J., Tascón, A., & Ayuga, F. (2018). Systematic layout planning of wineries: the case of Rioja region (Spain). *Journal of Agricultural Engineering*, 1(49), 34-41.
- 万俊敏. (2008). 中国广西—东盟水果竞争力比较研究. 硕士论文, 广西大学.
- 余文权, 孙威江, 吴国章, & 赵丽红. (2011). 农业产业链理论与实践研究进展. *亚热带农业研究*, 7(4), 277-283.
- 傅国华. (1996). 运转农产品产业链提高农业系统效益. *中国农垦经济*, (11), 24-25.
- 崔春晓, 邹松岐, & 张志新. (2013). 农业产业链国内外研究综述. *世界农业*, 1, 105-108.



- 李真.(2010). *四川省农产品国际竞争力研究*. 硕士论文, 西南财经大学.
- 李贞.(2015). *都市型农业园区开发策划研究——以熙可二圣镇生态统筹示范项目为例*. 硕士论文, 浙江工业大学.
- 杨丽.(2011). 我国农产品竞争力问题研究. *中国农垦*, (4),53-57.
- 熊焱.(2011). *提升江西特色农产品贸易竞争力研究*. 硕士论文, 南昌大学.
- 王永德.(2009). *中国农产品国际竞争力研究基于中美比较视角*. 北京:中国农业出版社.
- 钟敏.(2012). 内蒙古特色农产品产业链优化整合研究. *物流科技*, (12), 1-4.
- 雷莹.(2014). *广西罗非鱼产业链研究*. 硕士论文, 南京农业大学.