

Six-Factor Model Influencing the New Professional Farmers' Willingness to Sustainable Production

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Abstract: In order to break through the bottleneck of agricultural talents and effectively promote the implementation of rural revitalization strategy, this paper constructs a six-factors model that influences the new professional farmers' willingness to sustainable production: Individual Factor, Production and Management Factor, Education and Cultivation Factor, Social Capital Factor, Policy Sensitivity Factor and Development Factor. This paper provides a method for measuring the influence direction and extent of each factor, which is conducive for policymakers to design targeted policies for new professional farmers.

1. Introduction

In 2019, the No. 1 Document of the Central Committee repeatedly emphasized the need to break through the bottleneck of talents, put human capital development at the first place, and vigorously cultivate new professional farmers. The quality of the farmers determines the quality of rural revitalization. The new professional farmers are the backbone of building a new countryside and can effectively promote the implementation of the rural revitalization strategy.

At present, domestic and foreign scholars have carried out research on farmers' professionalization theory and professional farmers' cultivation mode:

Farmers' Professionalization Theory: Foreign scholars have taken the lead in perceiving the difference between traditional farmers and professional farmers (Eric Wolf, 1966)^[1]. They believe that "traditional farmers" are a group opposite to "citizens" whose main pursuit is to maintain their own livelihood, while the "professional farmer" is someone who views agriculture as an industry, fully freely enters the market, and uses all possible conditions to maximize economic returns. Then Chinese scholars carried out a series of explorations on constructing the theoretical system of farmers' professionalization. The explanations for "new professional farmers" mainly include four theoretical viewpoints: "Division of Labor Theory", "Identity Differentiation Theory", "Human Resources Characteristics Theory" and "Labor Value Theory".

Professional farmers' Cultivation Mode: In terms of management problem, land system, agricultural organization system, government support and service, and farmer education system are all important factors for nurturing new professional farmers (Qizhen Zhu, 2016)^[2]. Based on the characteristics of new professional farmers, Jie Tong (2015) believed that its cultivation should be carried out in three directions: specialization, industrialization and organization^[3]. Hui Xu (2016) explained the formation reasons of the new professional farmers from the perspective of individual and group, and then analyzed the logical path of the new professional farmers' cultivation under the new normal^[4]. Jiayuan Li (2015) took Sichuan Province as an example to explore the construction of a financial support mechanism for the new professional farmers' cultivation including financial investment mechanism, training object targeting and incentive mechanism, and training object selection mechanism^[5]. Tingwu Yan (2017) found clearing goals and tasks, strengthening organization and management, accurately selecting targets, and implementing follow-up support policies are essential to improve the new professional farmers' cultivation^[6]. Lulu Yang (2018) used the theory of human capital investment to construct a theoretical model that emphasizes the importance to focus on the farmers' needs and the accuracy of farmers' vocational education^[7].

Xuesong Wang (2018) and Limin Lyu (2018) seized the opportunity of the Internet and tried to explore a new model of "Internet + new professional farmers' cultivation" [8,9].

In summary, research on Farmers' Professionalization Theory has become more mature in terms of the connotation, characteristics and rationality of the professional farmers. In the exploration of professional farmers' cultivation mode, the existing researches show that the overall optimality of the cultivation mechanism is highly valued. Expanding the cultivation chain backwards, studying the influence mechanism of the new professional farmers' willingness to sustainable production, and promoting the optimization of agricultural production methods and labor structure will be a new hot spot in the research on new professional farmers.

2. Research design

2.1 Multi-perspective analysis of the value and role of new professional farmers

Agriculture is the basic industry that supports the construction and development of the national economy. However, in recent years, the loss of high-quality talents in rural areas has made the rural hollowing crisis increasingly serious. This study analyzes three values of new professional farmers: the economic value based on contradiction between supply and demand of rural talents in quantity and structure, the sociological value based on the flow of social structure and the cognition of the masses, the policy realization value based on government documents.

2.2 Six-factors theoretical model

In order to transform the high-level rural human capital represented by the new professional farmers into the driving force for promoting modern agriculture, we need to study the influencing factors of the new professional farmers' willingness to sustainable production. Therefore, this paper constructed a six-factors model (shown in Table 1) including Individual Factor, Production and Management Factor, Education and Cultivation Factor, Social Capital Factor, Policy Sensitivity Factor and Development Factor.

Table 1. Six primary factors and their Secondary index

Primary factor	Secondary index
Individual Factor	gender, age, education level, political status, etc.
Production and Management Factor	planting scale, unit output, career background, business mode, etc.
Education and Cultivation Factor	training experience, training content ,training form, training results
Social Capital Factor	family, employment, professional, career recognition and satisfaction, etc.
Policy Sensitivity Factor	ways to know the policy, time interval for issuing policies and awareness policies, policy satisfaction, etc.
Development Factor	career planning, career prospects

Individual Factor: According to human capital theory and demographic knowledge, individual factor such as gender, age, education level, political status, etc. need to be included in the model.

Production and Management Factor: According to the "economic man hypothesis" in economics, only when new professional farmers obtain considerable benefits by adopting a certain production operation and management mode, will they generate willingness to sustainable production. Therefore, the production and management factor such as planting scale are included in the model.

Education and Cultivation Factor: The training experience, training content and training form of the new professional farmers will affect their participation in the training, which finally affect the willingness to sustainable production. Therefore, the education and cultivation factor should be included in the model.

Social Capital Factor: Considering the increasing relationship between individuals and groups, people pay more attention to the resources brought about by social status. The intimacy and

coordination in social relations will exert different degrees of influence on the new professional farmers' willingness to sustainable production. Therefore, it is necessary to incorporate social capital factor such as family, employment, professional recognition and satisfaction, etc. into the model.

Policy Sensitivity Factor: In the face of the reality of urban-rural differences, the No. 1 Document of the Central Committee in 2004-2018 continued to pay attention to the development of new professional farmers, and the preferential policies have been continuously optimized and updated. The understanding and response to changes in preferential policies affects the income level of new professional farmers, which in turn influences the willingness to sustainable production. Therefore, it is necessary to incorporate policy sensitivity factor into the model.

Development Factor: As today's social development and economic development together promote the development of other fields, the government and research scholars focus on the sustainable development of agriculture industry. Therefore, we incorporate the development factor such as career planning and career prospects into the model.

2.3 Identify core factors and their impact

Though the new professional farmers' willingness to sustainable production is affected by many factors, the result is only two: "willing" and "unwilling", which is a "0-1" two-category variable, so we can consider applying Logistic regression model to quantify the influencing factors of the new professional farmers' willingness to sustainable production. The dependent variable is the willingness of the new professional farmers to sustainable production while the independent variables are six factors and their secondary indexes.

The regression result quantifies the direction and extent of each factor's contribution to sustainable production willingness. It is intuitively reflected by numerical values whether the new professional farmers are willing to sustainable production and what the degree of willingness is.

According to the results of the six-factors model regression, various influencing factors affecting high-efficient and sustainable agricultural production activities of new professional farmers can be classified in a hierarchical manner. Policymakers can propose regional and demand-oriented improvement measures for the missing parts of the core factors, and construct a path to improve the new professional farmers' willingness to sustainable production.

3. Conclusion

(1) Considering that new professional farmers are brand-new social groups emerging in the process of socialist modernization, the cultivation of new professional farmers is a complex systematic project. Under the guidance of systematic thinking, in addition to focusing on training, the development of new professional farmers must also have a good mechanism guarantee. It is necessary to take the farmers as the center, the government as the leading factor, the development and construction of the new countryside as the core goal, gather the wisdom and forces of many parties, and build a long-lasting guarantee mechanism. In this way, we can fully mobilize the enthusiasm and creativity of the new professional farmers to take root in the countryside and devote themselves to agriculture.

(2) At present, with a large amount of human resources draining from rural to urban areas, consequently rural land is abandoned, which is not in line with the new requirements for upgrading and transforming agriculture structure. However, the obvious differences in resource endowments in various regions of China result in unbalanced economic development in rural areas and the distinct basic conditions for professional farmers training. These characteristics are of great significance for the study and analysis of new professional farmers' cultivation work.

(3) From the perspective of farmers' development, the new professional farmers' cultivation system has improved the resource utilization rate and training quality, increased investment in scientific and technological innovation, improved rural infrastructure, and optimized the operation mechanism of the rural information market. It is conducive for farmers to play the pioneering spirit and realize the shift from poverty to wealth.

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