

Development Experience and Future Prospects of the Integration of Three Rural Industries in China

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Abstract

The development of rural areas cannot be separated from the support of industries, while the integration of three rural industries is the direction of rural industrial development. Developed countries have achieved new rural development through the integration of three rural industries. China has achieved a comprehensive victory in poverty eradication, and the integration of rural three industries has played an important role in promoting it. Further promoting the integration of the three rural industries is an important grasp of bridging poverty eradication and rural revitalization. Therefore, sorting out the theories and practices of industrial integration at home and abroad and summarizing their experiences can, on the one hand, provide support for improving the evaluation dimension of rural industrial integration, deepening the research on the mechanism of the Integration of Three Rural Industries, and strengthening the research on the driving mechanism and influencing factors, and on the other hand, provide a theoretical basis and a practical basis for the implementation of rural revitalization.

Keywords: industrial integration, integration of three industries, entrepreneurship, poverty reduction, rural revitalization

1. Introduction

The entry into the digital information age has accelerated the process of modernization on a global scale. Population mobility has intensified, a large number of labourers have moved to cities, rural population and land resources have been eroded by urban development, and agricultural and rural problems have become increasingly prominent. How to promote the development of rural secondary and tertiary industries on the basis of ensuring the stability of the primary industry has become an urgent problem for countries to solve. Research on the integration of rural industries has become a hot topic of concern for scholars in various countries. Along with the development of economy and technology, developed countries have transformed the traditional development model of rural areas by implementing the integration between rural primary, secondary and tertiary industries (hereinafter referred to as the integration of the three industries), thus realizing the new development of rural areas, which provides valuable experience for the integrated development of rural industries in China.

As a large agricultural country, the issue of rural development has always been a major issue in development decisions. Since the reform and opening up of China, the level of urbanization has gradually increased with the rapid development of the economy, and while people are enjoying the dividends of urbanization, they are also facing a series of problems such as the loss of a large amount of rural land resources and labour resources, the low utilization rate of rural land and the backwardness of rural construction, which, together with the problem of poverty, have become obstacles to rural development. The Chinese government has always made the "Three Rural Issues", which are related to the people's livelihood of the country, the focus of its work, and issued the "No. 1 Document" with the theme of "Three Rural Issues" for eighteen consecutive years from 2004 to 2021. From 2004 to 2021, the government has issued the "No. 1 Document" on the theme of "three rural areas" for 18 consecutive years. In particular, the 2018 No. 1 document proposes to implement the strategy of rural revitalization, with industrial prosperity as the focus. And the integration of the three rural industries is an

effective way to achieve industrial prosperity.

At present, the integration of the three rural industries in China is on the rise, but there are still problems such as low level of integration, insufficient diversification of integration models, irregular evaluation standards for integration and restrictions on farmers' income increase. Therefore, it is of great significance for China to sort out the theories and practices of industrial integration at home and abroad and summarize their experiences in order to solve the problems of "three rural areas" and realize rural revitalization.

2. Theories of Industrial Integration and Foreign Experience in the Integration of Three Industries

2.1 Development of the Theory of Industrial Integration

With the continuous innovation of industrial technology, industrial convergence began to emerge as a new economic phenomenon. The study of technological convergence was the direction of early research on the phenomenon of industrial convergence. Technological convergence refers to the phenomenon of diffusion of the same technology into different industries (Rosenberg, 1963). Negro Ponte was the first to articulate a normative theory of technological convergence, arguing that the new fields arising from the crossover of industrial convergence are both innovative and fast-growing fields. Although this theory provided a theoretical basis for the study of industrial convergence, there was no subsequent spurt of research on industrial convergence. It was not until 1997 that the European Commission pointed out in its "Green Paper" that industrial convergence is the integration of technologies, industries, services and markets, and that the technology is to build a common platform through which different enterprises can share technologies (European Commission, 1997). In the same period, American scholars also proposed that industrial convergence is the integration between independent products after the adoption of digital technology, and it is the gradual blurring of industrial boundaries to accommodate the continuous development of the industry (Yoffie, 1997; Greenstein & Khanna, 1997). Subsequently, the Japanese scholar Uekusa Yoshi (2001) suggested that industrial integration facilitates healthy competition and cooperation among firms, which is premised on the elimination or reduction of inter-industry barriers through relaxation of restrictions and continuous technological innovation (Phyllis, 2001). Japan is also an early adopter of industrial integration theory in the development of rural industrialization. In general, industrial integration is an economic phenomenon in which different firms provide similar products or services along the same or related value chains and aggregate these products or services together. Industrial integration is actually a complex and variable long-term development process that does not depend on human consciousness (Xue, Jinxia *et al.*, 2019).

2.2 Development Practice of Integration of Three Rural Industries Abroad

The application of industrial integration theory in the process of rural development is conducive to promoting the benign development of rural primary, secondary and tertiary industries and has a positive impact on the balanced development of the entire social economy. Due to the differences between the specific conditions of different countries, the focus of scholars in studying the integration of the three rural industries is also different: European and American scholars focus on the primary industry assisted by science and technology, and the agricultural industrialization research of the integration of secondary and tertiary industries. In Asian scholars' studies, under the premise of fully emphasizing the multifunctionality of agriculture, they focus on the role of endogenous forces in rural areas, i.e. to guarantee the development of the original primary industry in rural areas and gradually expand and extend to the secondary and tertiary industries.

In terms of the specific practice of integrating the three rural industries, foreign research on the integration of the three rural industries is concentrated in developed countries, while other countries do not explicitly propose the integration of the three industries, but in practice, they also follow the path of integration of the three rural industries. Some countries with more developed industries mainly promote the development of the integration of rural three industries by formulating industrial integration development policies, improving infrastructure construction, establishing specialized management institutions and providing capital and human resources support. Some developed agricultural countries have formed some more mature models and experiences in the long-term practice of rural industrial integration development, such as Japan's "six industrialization", South Korea's "sixth industrialization of agriculture", the Netherlands' "agricultural whole industry chain", France's "rural tourism", etc. (Li Qian, 2017). For regions with high urbanization level and rapid economic development to develop tourism agriculture, ecological agriculture, leisure agriculture, experience agriculture, etc., making a high degree of integration between the three rural industries (Wang Changxiong, 2016), Singapore has formed a characteristic urban modern agriculture development model by exploring a differentiated urban agriculture development model according to local conditions. In addition, countries in developing countries are also exploring the model of integration of the three industries that is suitable for their own development. For example,

Brazil has promoted the effective integration among the three rural industries through the service system of agricultural industrialization and the implementation of cooperative-based agricultural industrialization operation, which has driven the development of Brazil's characteristic economy (Li Hongtao, 2009). The Malaysian government has been actively promoting the integration of rural industries since the 1970s, mainly including the processing and export of agricultural raw materials mainly in rubber, cottage industries mainly in the form of preparation and carving, self-production and self-sale, and repair of motor vehicles and electrical appliances (Liu Ying, 2014), while promoting the integrated development of agriculture, forestry and animal husbandry as well as rural tourism.

3. The Practice and Development of the Integration of Three Rural Industries in China

The issue of the "three rural areas" has always been a key concern of the Party and the Government of China. At present, promoting and facilitating the integrated development of the three rural industries has become an important means of promoting the sustainable development of agriculture and rural areas, as well as a key link in further consolidating the achievements of poverty eradication and rural revitalization. Although Chinese scholars' research on the integration of rural industries is later than that of European and American countries, the long tradition of Chinese agricultural development, coupled with the implementation of various rural development policies in recent years, has led domestic scholars to conduct more comprehensive and systematic research on the integration of the three rural industries, with in-depth studies on the development of the integration of the three industries, models, evaluation systems and policy support.

3.1 Development and Connotation of the Integration of the Three Rural Industries in China

The integration of the three rural industries in the practical sense in China dates back to 1981. At that time, the Government proposed to carry out pilot work on agro-industrial joint ventures, and after summing up its experience, the whole country promoted it, which was the budding period of industrial integration. In the concrete practice, the lack of organic links between agriculture and industry led to the shrinkage of agriculture, so scholars proposed that rural primary, secondary and tertiary industries should form an organic whole in the development process to achieve a higher level of deep integration (Gu Yikang, 1985). With the further development of township enterprises, agricultural-industrial integration has become the focus of academic research, and balancing the interests among industries in the process of agricultural-industrial integration is a guarantee to promote the healthy development of a unified entity economy (Yang Yulong, 1990). With the further development of agricultural industrialization, the integration between agriculture and other industries has been accelerated, and scholars have proposed a diversified economic integration model based on and relying on each other, so that the three industries can achieve deep integration through factor penetration (Jiang Dengbin, 1994).

The systematic research on the integration of rural three industries appeared in 1997 (Yu Lingang, 1997). With the enrichment of the practice of integration of three rural industries in China, scholars began to try to define the integration of rural industries and three industries (see Table 1 for the main definitions) (Ma, X.-H., 2015; Su, Y.-Q., You, Y.-T., & Wang, Z.-G., 2016; Hu, W. B., & Huang, Z. F., 2018; Xiao, W.-D., & Du, Z.-X., 2019). By comparing the definitions of different scholars, this paper argues that the integration of agricultural industries refers to the integration of agricultural products and services and markets through integration with products and services and markets of other industries, which in turn liberates agricultural production factors and creates new values. On the basis of this connotation, the integration of three rural industries can be defined as the integration of the cross-penetration between rural industries as the path, the transformation of industrial functions, the expansion of industrial scope and the extension of industrial chain as the main expression, the transformation of development mode and industrial development as the result, and the integration and optimal reorganization of resources, factors, technology and market demand in rural areas through the formation of new technologies, new business modes and new business models (He Lisheng and Li Shixin, 2005; Jiang Changyun, 2015). Through the study and definition of the connotation of the integration of the three rural industries, the academic community generally believes that the organic penetration and integration and synergistic development between the rural one, two and three industries is an important way to achieve new rural development.

Table 1. Main definitions of rural industrial integration and integration of three industries in academia

proposing a scholar	Presentation time	Specific connotations
Ma Xiaohu	2015	The integrated development of one, two, three industries in rural areas means that agriculture is used as the basic support, and through industrial linkage, industrial agglomeration, technological penetration and institutional innovation, capital, technology and resource elements are allocated in cross-border intensification, so that agricultural production, processing and marketing of agricultural products, catering, leisure and other service industries are organically integrated together, making the one, two and three industries in rural areas closely connected and synergistically developed, and ultimately The extension of the agricultural industry chain, the expansion of the scope of the industry and the increase of farmers' income have been realized.
Su Yi Cheng et al.	2016	The inter-industrial division of social production formed by the subdivisions of the primary sector, such as agriculture, forestry, livestock and fisheries, and the subdivisions of the secondary and tertiary sectors, is internalized in the countryside.
Subject Group of Macro Institute and Department of Agricultural Economics, National Development and Reform Commission, China	2016	The integration of rural industries is a process in which agriculture is the basic support, new business entities are the leaders, and the linkage of interests is the linkage; through the extension of industrial chains, the expansion of industrial functions and the agglomeration of elements, technological penetration and organizational system innovation, capital, technology and resource elements are allocated intensively across borders, and agricultural production, agricultural products processing and circulation, agricultural production and marketing, and leisure tourism and other service industries are promoted to be organically integrated and closely linked.
Hu Weibin et al.	2018	The integration of rural industries extends from traditional agricultural production and operation to modern modes of primary processing of agricultural products, socialized services for agricultural production, e-commerce sales, leisure and tourism agriculture, and rural tourism and B&B, so that agriculture is organically integrated with secondary and tertiary industries and the integrated development of three industries is realized.
Xiao Weidong et al.	2019	The new agricultural organization methods and processes of various sectors within agriculture, agriculture and rural secondary and tertiary industries through mutual integration and penetration, cross-reorganization and other ways to form new industries and new modes of agricultural business.

3.2 Model of Integration of Three Rural Industries in China

As a large country, China's rural areas account for a large proportion of the population, and the objective conditions vary greatly, so the choice of specific three-industry integration models also varies. The integration of the three industries in rural areas cannot be a simple superposition of the three industries, and a deep and high-quality integration should avoid "one side of a thousand villages" (Chen Xueyun et al., 2018). In the new development period, an ecological orientation should be established, based on the specific objective reality of rural areas, to choose the three-industry integration model suitable for each region's own development.

Due to the different angles of research division, different scholars have differences in the division of China's rural three-industry integration model. From the span, direction and mode of industrial integration: the rural three industries integration mode in China can be summarized as internal industry integration mode, industrial chain extension mode, cross-integration mode of one, two and three industries, and high-tech penetration mode (Ma

Xiaohe, 2015); from the diversity of integration: the rural three industries integration mode can be subdivided into two modes: binary integration and ternary integration (Wan Baorui, 2019); from the specific practical analysis: the rural three-products integration model is subdivided into regional synergistic integration model, brand core integration model, technology penetration model, three capital activation integration model, and subject collaboration integration model (Wen Shuping et al., 2017).

In addition, there are also scholars who classify according to other criteria. Jiang Tianlong et al. (2020) According to the type of industries included in the industrial integration, it can be divided into "1 + 2" mode, "1 + 3" mode and "1 + 2 + 3" mode. "mode; according to the main body of industrial integration, it can be divided into "expansion and development" mode and "cooperation and integration" mode; according to the benefit linkage mechanism, it can be divided into "primary integration" mode and "advanced integration" mode; according to the motive of initial industrial integration, it can be divided into "spontaneous integration" mode and "support integration" mode. According to the motivation of the initial industrial integration, it can be divided into "spontaneous integration" mode and "supporting integration" mode.

Current classifications of rural triple-integration models are complicated and diverse, but they are all based on specific rural triple-integration practices. In the next section of this paper, we will analyze rural three-products integration models in China based on an analytical framework constructed from an entrepreneurial poverty reduction perspective.

3.3 Evaluation and Measurement of the Level of Development of the Integration of the Three Rural Industries in China

Chinese scholars have made extensive attempts to measure and evaluate the level of development of the integration of the three rural industries in China, but due to the availability of data and numerous relevant variables, different scholars differ in their specific measurements, and it is difficult to form a unified standard.

Su Yiqing et al. (2016) established an evaluation system for the integration of the three rural industries from the theoretical level. Feng Wei et al. (2016) subdivided the level of integration of rural three industries into farmers' income increase, farmers' employment, agricultural multifunctionality play, agricultural service industry integration development situation, industrial chain extension and urban-rural integration development, and further summarized into two aspects of inter-industry association interaction and social effect of three industries integration to build the evaluation index system of rural three industries integration development (Feng, W., Shi, R.-J., Xia, H., & Geng, Q.-Q., 2016). Wang Ling (2017) used entropy value method to measure the level of integration of rural three industries based on the actual development of rural three industries in Jiangsu Province in five dimensions: farmers' income increase, agricultural multifunctionality, agricultural service industry integration, industrial chain extension and urban-rural integration level, and analyzed the inter-regional differences (Wang, L., 2017). Li Yun et al. (2017) used hierarchical analysis to construct an evaluation system for the integration of three industries from the elements of farmers' income increase, agricultural multifunctional expansion and industrial chain extension (Li, Y., Chen, J.-H., & Chen, C., 2017). Tang Fujun (2018), on the other hand, selected 10 specific indicators from three dimensions of agricultural multifunctionality, agricultural-services integration and industrial chain extension combined with the data of rural three-product integration in Beijing from 2007-2016 to construct the rural three-product integration development index and conducted quantitative analysis, and the results showed that the level of rural three-product integration was positively correlated with the level of per capita income of farmers (Tang, F.-J., 2018). Chen Xueyun et al. (2018) used regional three-product development data to measure the degree of rural three-product integration based on data from 31 provinces and used the coupling degree model to develop a quantitative measurement (Chen, X.-Y., & Cheng, C.-M., 2018). Huang Qinghua et al. (2020) adopted the equal weight assignment method to measure the degree of integration of rural three industries from within industrial integration (Huang, Q. H., Li, Y. M., & Pan, X. X., 2020).

As can be seen, although scholars have different measurement perspectives, they all basically cover the main indicators reflecting the level of integration of the three rural industries in combination with relevant data. The evaluation and measurement of the level of development of the integration of the three rural industries in China is conducive to a systematic assessment of the historical evolution, regional differences, policy implementation and level of integration of the three rural industries in China, and is of great significance in better promoting the integration of the three rural industries.

4. Entrepreneurship for Poverty Reduction Perspective on the Integration of Three Rural Industries in China

As mentioned earlier, after 40 years of development since 1981, the integration of the three rural industries in

China has developed a unique "Chinese experience". In particular, with the overall success of poverty eradication and the disappearance of absolute poverty in China, the integration of the three rural industries in China has made a qualitative leap, both in terms of model innovation and quality of integration. How to summarize the existing practice of rural three-product integration is also crucial to the orderly and high-quality promotion of China's rural revitalization strategy. Therefore, this paper constructs an analytical framework from the perspective of entrepreneurship poverty reduction theory based on China's rural integration of three industries practice, so as to summarize China's three-product integration experience more intuitively and clearly, provide a theoretical basis for sustainable rural development, and provide a reference experience for the comprehensive implementation of rural revitalization.

With the enrichment of poverty reduction practices, there is an accumulation of literature on entrepreneurship for poverty reduction. Through a review of high-level literature on entrepreneurship poverty reduction at home and abroad, Siaooff et al. (2020) explored in depth the frontier theoretical research and future directions on entrepreneurship poverty reduction from six aspects, including resource replenishment theory, new BOP model, local entrepreneurship and poverty reduction, platform empowerment theory, institutional change theory, and learning change theory (Si, X.-F., Yan, Y.-S., & Fu, Y., 2020). Resource replenishment theory emphasizes that when resources are scarce as well as undersupplied, the pooling and direct supply of various types of resources can promote entrepreneurial demand and reduce poverty (Sutter et al., 2019), and resources such as knowledge, material, political stability, and entrepreneurial orientation are the main factors for entrepreneurship among the poor (Ahlin and Jiang, 2008). One of the main constraints to industrial development in rural areas compared to urban areas is the poor industrial base, thus requiring a large injection of resources in the early stages of industrial development. China provides substantial resource support to rural areas at the early stage of poverty alleviation, which also lays a solid material foundation for the development of entrepreneurial poverty reduction practices and industries. From the perspective of multidimensional poverty, simple resource replenishment cannot fundamentally change the backwardness of rural areas, so a new theory of entrepreneurial poverty reduction has begun to emerge. The so-called new BOP model is a BOP model that positions poor groups as business partners or even self-managed independent producers, in addition to the previous BOP model that treats poor groups as consumers and increases savings by reducing their expenses and thus escaping poverty. With the new positioning, promoting the formation of extensive partnerships between governments, businesses, entrepreneurs and poor groups and creating a market for consumers at the bottom (Calton et al., 2013) becomes the current focus direction of the new BOP model. In concrete practice, this is one of the main forms of poverty alleviation through industry and thus the integration of the three rural industries in China's rural areas. After investing resources to improve the basic environment for rural industrial development, the government introduces enterprises into rural areas to carry out entrepreneurial poverty reduction practices, and in the process the industrial projects themselves provide a large number of jobs for local farmers. At the same time, the upstream and downstream industries required by the poverty alleviation industry itself have become key areas for local farmers to engage in self-employment. Take Unity Village in Guizhou Province as an example, Zhongtian Finance developed ecological agriculture and tourism in Unity Village, which led to the development of the upstream farming and planting industries and the downstream service industry, thus forming a more complete industrial chain and promoting the organic integration of the village's primary, secondary and tertiary industries. Unlike the BOP model, in which external entrepreneurs drive poverty reduction among the poor, the theory of local entrepreneurship emphasizes self-employment by local poor groups based on their own regional culture (Dana, 2007). In fact, local entrepreneurship for poverty reduction faces a series of problems: first, not all local residents are willing to start their own business collectively due to identity as well as local culture issues (Zhang et al., 2019). Secondly, in order to engage the majority of local residents in pro-poor enterprises, leaders such as "know-it-alls" and "new villagers" are needed (Lazear, 2004). Third, local entrepreneurship for poverty reduction that relies solely on its own strength and ignores external factors does not work, and government and non-profit social organizations need to play a role in guiding and creating entrepreneurial opportunities (Haveman, 1993; Castellanza, 2020). The industrial integration process of Huangxi village in Jiangxi province is a good example of local entrepreneurship, where local entrepreneurship was carried out under the leadership of Huang, a new village clerk, who vigorously developed mulberry sericulture, and later extended the industrial chain upwards and downwards to meet the development needs of local entrepreneurial enterprises, developing mulberry leaf farming and silk product processing enterprises, finally forming a complete chain of industrial integration. The integration of rural industries in the process of development is actually accomplished with the government taking the lead and each participating subject playing an important role. He (2019) analyzes the relationship between digital technology and entrepreneurial poverty reduction based on platform empowerment theory sell their products to improve their income while providing farmers with inexpensive products (He, X.,

2019). At the same time, poverty reduction through entrepreneurship has benefited from a comprehensive change in the poverty alleviation system. This is because the inadequate supply of institutions is one of the causes of poverty (Saebi et al., 2019), the government's governance approach (Li Bo, 2016), and the multi-party co-construction of an inclusive and industrialized regional innovation system can effectively promote the entrepreneurial motivation and capacity of farmer residents (Shao Xi et al., 2011; Huang Chengwei and Qin Zhimin, 2013). At the same time, the theory of institutional change particularly emphasizes that entrepreneurship poverty reduction is not simply the pursuit of economic efficiency; its ultimate goal is to promote social equality (Sutter et al., 2019). In fact, it is in the process of entrepreneurial poverty reduction that farmers participate in the process of integrating the three rural industries and enjoy the dividends of industrial integration. In addition to the increase in income, their status is also changed to "industrial workers" or "entrepreneurs", and with the premise that the status of the subject is further guaranteed, the identity of urban and rural residents is eventually equalized. Although the above theories and studies can improve the effectiveness of entrepreneurship in poverty reduction and integration of the three rural industries, in fact, it is crucial to improve farmers' motivation to reduce poverty and participate in industrial integration, and to change their way of thinking and behavior, which is also the problem studied by learning change theory (Sichow et al., 2020).

By combing through the frontier theory of entrepreneurship poverty reduction and analyzing it in the context of the actual integration of the three rural industries. This paper finds that although the specific approaches of entrepreneurship poverty reduction and rural triple product integration vary in focus, in general they all involve the active participation of multiple capitals under the leadership of the government, improving rural public infrastructure, ensuring the subjective status of farmers' groups, providing them with an empowering platform, and stimulating their subjective initiative, so that farmers can actively participate in the industry. Farmer-centered multi-subject participation is actually the key to the integration of three rural industries, and previous studies on the integration of three rural industries have focused too much on the choice of specific models, while ignoring the participants in industrial integration. Therefore, based on the frontier theory of entrepreneurship poverty reduction and the actual three-products integration in China, this paper analyzes the development of China's rural three-products integration under the participation of multiple subjects, which is helpful for studying the current situation and planning the future development path of China's three rural industries integration.

5. Implications of the Study on the Integration of Three Industries in the Context of Rural Revitalization

In this paper, through the combing of domestic and foreign literature, it is concluded that industrial integration is the trend of collaborative industrial development, and the integration of three rural industries is the application of industrial integration theory in the process of rural development. The United States, France, the Netherlands and other developed countries have all embodied the integration of rural industries in the process of agricultural development. The concept of rural industrial integration was first embodied in Japan's "sixth industry", where the integration of agriculture and industry, agriculture and commerce, and agriculture and tourism brought new development to traditional agriculture. China's concept of the integration of the three rural industries has been influenced by the experience of developed countries, and while learning from their experience, they have also made innovations in line with China's national conditions. Although the research on the integration of three rural industries in China started late, there is now a certain theoretical foundation and practical experience on the research on the connotation and mode of integration of three rural industries. Especially since the implementation of the strategy of precise poverty alleviation, rural industries have developed rapidly, and the practice of integration of the three industries has increased and accelerated.

Based on the existing studies, this paper focuses on the analysis from the perspective of entrepreneurship poverty reduction combined with the practice of rural industrial integration since China's precise poverty alleviation, and constructs a framework for the development of the integration of three rural industries in China from the perspective of entrepreneurship poverty reduction. From the practice of entrepreneurship poverty reduction, the analytical framework emphasizes the important role of multi-subject participation in the process of three industries integration development, which provides new ideas for analyzing the process of rural three industries integration from the micro level and further improving the quality of three industries integration.

Based on the summary of the existing studies, future research should deepen the research on the development of the integration of the three rural industries from the following aspects.

First, the evaluation criteria for the level of integration of the three rural industries are standardized. There have been many studies on measuring the level of integration development of rural industries, but the evaluation index system varies greatly, especially for the quantitative research on the level of integration. The direction of future

research should start from the construction of a reasonable index system as well as the collection of more representative macro data. At the same time, refine the evaluation indexes and evaluate the integration level from the depth and breadth of the integration of the three rural industries and other multi-dimensional aspects.

Second, research on the dynamics and influencing factors should be strengthened. Achieving high-quality integration of the three rural industries and achieving the effect of increasing farmers' income requires the concerted efforts of endogenous forces, external forces and various influencing factors. The direction of future research should start from continuing to play the role of entrepreneurship in poverty reduction, further enriching the subjects of rural industrial development, and establishing a participatory mechanism for the integration of rural three industries under the guidance of the Government, with farmers as the main players, embedded participation of enterprises and synergistic development of the rest of the participating subjects.

Third, deepen the research on the mechanism of integration of the three rural industries. The slow communication of news from various rural areas requires the replication of representative rural industrial integration experiences. Later research can go deeper into typical areas to obtain a large amount of first-hand data, and after analysis, come up with replicable experiences. At the same time, the descriptive research on the integration of the three rural industries should be shifted to deepening the research on the integration mechanism, clarifying the mechanism for increasing the income of farmers' business income, wage income and property income under the promotion of the integration of the three industries, as well as deepening the research on the integration mode and the choice of the interest linkage in the process of the integration of the three rural industries.

References

- Ahlin, C., & Jiang, N. (2008). Can Micro-credit Bring Development?. *Journal of Development Economics*, 86(1), 1-21.
- Calton, J. M., Werhane, P. H., Hartman, L. P., & Bevan, D. (2013). Building Partnerships to Create Social and Economic Value at the Base of the Global Development Pyramid. *Journal of Business Ethics*, 117(4), 721-733.
- Castellanza, L. (2020). Discipline, Abjection, and Poverty Alleviation through Entrepreneurship: a Constitutive Perspective. *Journal of Business Venturing*, 35(3).
- Chen, X.-Y., & Cheng, C.-M. (2018). The path of integration of three industries in rural revitalization strategy: logical necessity and empirical determination. *Issues in Agricultural Economics*, (11), 91-100.
- Dana, L. B. (2007). *International Handbook of Research on Indigenous Entrepreneurship*. Edward Elgar Publishing.
- European Commission. (1997). Green Paper on the Convergence of the Telecommunications, Media and Information Technology Sectors, and the Implications for Green Paper on the Convergence of the Telecommunications, Media and Information Technology Sectors, and the Implications for Regulation. *Information Society Project Office Eu*.
- Feng, W., Shi, R.-J., Xia, H., & Geng, Q.-Q. (2016). Research on the evaluation index system of integrated development of rural one, two, three industries. *Hubei Agricultural Science*, 55(21), 5697-5701.
- Greenstein, S., & Khanna, T. (1997). What Does Industry Mean?. In Yofee (Ed.), *Competing in the Age of Digital Convergence* (pp. 201-226). President and Fellows of Harvard Press.
- Haveman, H. A. (1993). Following the Leader: Mimetic Isomorphism and Entry into New Markets. *Administrative Science Quarterly*, 38(4), 593-627.
- He, L. S., & Li, S. S. (2005). Industrial integration and agricultural development. *Journal of Jinyang Studies*, (1), 37-40.
- He, X. (2019). Digital Entrepreneurship Solution to Rural Poverty: theory, practice and policy Implications. *Journal of Developmental Entrepreneurship*, 24(1), 1-32.
- Hu, W. B., & Huang, Z. F. (2018). Integration of three industries in animal husbandry: a study and insights based on a typical case in the United States. *Chinese Journal of Animal Husbandry*, 54(10), 125-129.
- Huang, C.-W., & Qin, Z.-M. (2013). Poverty-stricken areas coordinate urban-rural development and innovation of industrialized poverty alleviation mechanism-an analysis based on the case of industrialized poverty alleviation in Chongqing farmers' entrepreneurship park. *Agricultural Economic Issues*, (5).
- Huang, Q. H., Li, Y. M., & Pan, X. X. (2020). Selection of a model for integrated development of three rural

- industries in Chongqing and evaluation of multidimensional effects. *Agricultural Economics and Management*, (2), 10-19.
- Jiang, C.-Y. (2015). Innovation-driven vision of agricultural development mode transformation. *Reform*, (12), 83-93.
- Jiang, D.-B. (1994). An experimental discussion on the integration of rural diversified economy. *Economic Issues*, (8), 10-12.
- Jiang, T.-L., & Shu, K.-L. (2020). Patterns, dilemmas and countermeasures of the integration of rural "three industries". *Taxation and Economy*, (5), 57-61.
- Lazear, E. P. (2004). Balanced Skills and Entrepreneurship. *American Economic Review*, 94(2), 208-211.
- Li, B. (2016). Rural Governance Transformation and Rural Precision Poverty Alleviation. *Journal of Shanxi Agricultural University (Social Science Edition)*, (8).
- Li, H.-T. (2009). A comparative study of the development history of China and Brazil's villages. *Northwest Agrarian and Forestry University*.
- Li, Q. (2017). Policy Insights on Foreign Support for Integrated Development of Rural Secondary, Secondary and Tertiary Industries. *Contemporary Economic Management*, 39(6), 93-97.
- Li, Y., Chen, J.-H., & Chen, C. (2017). Research on the evaluation index system of agricultural industry integration and its application to Beijing. *Science and Technology Management Research*, 37(4), 55-63.
- Liu, Y. (2014). Exploring Malaysia's agricultural policy and its rural economic development measures. *World Agriculture*, (8), 166-168.
- Ma, X.-H. (2015). Promoting the deep integration development of rural one, two and three industries. *China Cooperative Economy*, (2), 43-44.
- Phyllis, Y. (2001). Industrial convergence in the information and communication industry. *China Industrial Economy*, (2), 24-27.
- Rosenberg, N. (1963). Technological change in the machine tool industry, 1840-1910. *The Journal of Economic History*, 23, 414-416.
- Saebi, T., Foss, N. J., & Linder, S. (2019). Social Entrepreneurship Research: Past Achievements and Future Promises. *Journal of Management*, 45(1), 70-95.
- Shao, X., Xing, S. Q., & Tong, Y. H. (2011). Study on Inclusive Regional Innovation System. *China Population Resources and Environment*, (6).
- Si, X.-F., Yan, Y.-S., & Fu, Y. (2020). Frontier Theory Research and Future Directions on Entrepreneurial Poverty Reduction. *Management World*, (11).
- Su, Y.-Q., You, Y.-T., & Wang, Z.-G. (2016). Integrated development of rural one, two, three industries: theoretical discussion, current situation analysis and countermeasure suggestions. *China Soft Science*, (8), 17-28.
- Sutter, C. J., Bruton, G. D., & Chen, J. (2019). Entrepreneurship as a Solution to Extreme Poverty: a Review and Future Research Directions. *Journal of Business Venturing*, 34(1), 197-214.
- Tang, F.-J. (2018). Research on the level of development of the integration of rural three industries and the trend of its impact on rural economic growth. *Northeast University of Finance and Economics*.
- Wan, B.-R. (2019). The evolution of the integration of three agricultural industries in China and its practical significance. *Agricultural Economic Issues*, (8), 4-8.
- Wang, C.-X. (2016). Insights from the development of urban modern agriculture in Singapore. *Shanghai Rural Economy*, (8), 39-41.
- Wang, L. (2017). Measurement of rural industrial integration level in Jiangsu Province and analysis of regional differences. *Agricultural Economics*, (6), 21-22.
- Wen, S.-M., Guo, S.-M., Wang, X.-Q., & Wang, W. (2017). An analysis of the integration development mode of rural one, two and three industries. *Ningxia Agriculture and Forestry Science and Technology*, 58(12), 2, 83-87, 99.
- Xiao, W.-D., & Du, Z.-X. (2019). Integration of rural one, two, three industries: connotation to be understood, development status and future ideas. *Journal of Northwest Agriculture and Forestry University of Science*

and Technology (Social Science Edition), 19(6), 120-129.

- Xue, J.-X., & Cao, C. (2019). A review of domestic and foreign research on industrial integration theory. *New West*, (30), 73-74, 90.
- Yang, Y.-L. (1990). Development of township enterprises and promotion of moderate scale operation in agriculture. *Journal of Jilin Agricultural University*, (1), 86-88, 107.
- Yoffie, D. B. (1996). Competing in the Age of Digital Convergence. *California Management Review*, 38(4), 31-53.
- Yu, L.-G. (1997). Classification of the three industries and the trend of industrial integration. *Economic Research Reference*, (1), 46-47.
- Zhang, G.-Q., Si, X-F., & Liu, L.-Q. (2019). The driving factors of farmers' entrepreneurship: a study based on rooting theory and coding methods. *Comparative Economic and Social Systems*, (3).

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