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Adapting to Dynamic Market Conditions: Optimal Resource Allocation and Organizational Innovation in Agricultural Enterprises

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ABSTRACT

This study focuses on resource optimization and organizational innovation within agricultural enterprises operating under dynamic market conditions. It employs a mixed-methods research approach to conduct in-depth investigations of 41 different types of agricultural enterprises. The research systematically analyzs resource allocation patterns, organizational innovation practices, and their interaction mechanisms in dynamic market environments. The research reveals significant efficiency differences and structural problems in land, human resources, and capital allocation among traditional agricultural enterprises, with large enterprises demonstrating substantially higher Data Envelopment Analysis (DEA) efficiency values (0.782) compared to small enterprises (0.536), where low proportions of technical personnel and singular financing structures constitute the primary factors constraining resource allocation optimization. Modern agricultural enterprises have achieved a transformation from experience-driven to data-driven approaches through technology-driven organizational changes, with smart agri-

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culture technology application rates reaching 78.3% and decision-making efficiency improving by 35%. Industrial integration has created new development opportunities for agricultural enterprises, with agri-tourism integrated enterprises generating 42.6% of total revenue from integrated business operations, demonstrating outstanding performance in service standardization and customer satisfaction by leveraging international hotel management practices. The research conclusions provide important theoretical foundations and practical guidance for agricultural enterprises aiming for sustainable development in dynamic market conditions, offering valuable policy insights for promoting agricultural modernization and rural revitalization.

Keywords: Dynamic Market Conditions; Agricultural Enterprises; Resource Optimization Allocation; Organizational Innovation; Industrial Integration; Technology-Driven; International Hotel Management

1. Introduction

Under the dual driving forces of global economic integration and digital transformation, the agricultural industry is undergoing unprecedented waves of transformation. Currently, agricultural enterprises face multiple dynamic market conditions, including intensified climate change, diversified consumer demands, adjustments in international trade policies, and accelerated technological innovation. These dramatic changes in external environments require agricultural enterprises to possess stronger adaptive capabilities and an innovative spirit, maintaining competitive advantages through optimizing resource allocation and advancing organizational innovation. Chen Xuesong (2025) points out that agricultural enterprises face numerous critical issues in cost management, which directly affect resource allocation efficiency and market competitiveness[1]. Meanwhile, Jiang Nan's (2024) research demonstrates that the internationalization of agricultural product standards has significantly impacted the diversification of export markets for agricultural enterprises, further highlighting the urgency for agricultural enterprises to reallocate resources and adjust organizational structures in dynamic international market environments[2]. From an international perspective, Zunzunegui et al. (2025) revealed innovative approaches to agricultural resource utilization, emphasizing the need for new agricultural resource management strategies when addressing abiotic and biotic stresses[3]. Resource optimization allocation in agricultural enterprises has become a core issue for achieving sustainable development, particularly in the integrated management of critical production factors such as water resources, nitrogen, and carbon. Li et al. (2025) proposed new pathways for achieving sustainable development goals in agricultural ecosystems through agricultural resource optimization allocation via research on water-nitrogen-carbon coupling systems, providing important theoretical guidance for resource allocation in agricultural enterprises under dynamic market conditions[4]. Simultaneously, capital market liberalization has brought new development opportunities and challenges for large agricultural enterprises. Tang Wei and Huang Xianchi (2023) analyzed the impact of capital market liberalization on total factor productivity of large agricultural enterprises from the perspective of mediating effects of financing constraints and agency costs, revealing the important role of financial resource allocation in agricultural enterprise development[5]. These studies indicate that modern agricultural enterprises must integrate and optimize resources across multiple dimensions and levels to maintain leading positions in intense market competition. Organizational innovation, as an important means for agricultural enterprises to adapt to dynamic markets, is reshaping traditional agricultural development models. The deep integration of agriculture and tourism provides agricultural enterprises with entirely new development spaces and resource allocation choices. Chen et al. (2025) validated through empirical analysis of panel data from 30 Chinese provinces that agri-tourism integration can effectively promote agricultural green development, with this cross-sector integration organizational innovation model opening new value creation pathways for agricultural enterprises[6]. At the marketing level, Liu Xuanfang's (2023) analysis of the current development sta-

tus of marketing in Chinese agricultural enterprises indicates that innovative marketing approaches have become inevitable choices for agricultural enterprises responding to market changes, requiring systematic transformations in organizational structure, operational processes, and management models [7]. This organizational innovation is reflected not only in technological applications and business model updates but, more importantly, requires building dynamic organizational capabilities that can rapidly respond to market changes. Based on the above background analysis, this study aims to deeply explore how agricultural enterprises enhance competitive advantages and sustainable development capabilities through resource optimization, allocation, and organizational innovation under dynamic market conditions. The research will systematically examine influencing factors and mechanisms of agricultural enterprise resource allocation from both theoretical construction and empirical analysis perspectives, identify organizational innovation models suitable for different types of agricultural enterprises, and explore innovative development pathways for agricultural enterprises in agri-tourism integration contexts by incorporating advanced experiences from international hotel management.

Although existing literature provides important insights into agricultural enterprise resource allocation and organizational innovation, three key research gaps remain to be filled. First, existing studies mostly explore resource allocation or organizational innovation from a single dimension, lacking systematic analysis of the interaction mechanisms between the two, particularly the deep-level mechanisms of how they mutually promote and co-evolve under dynamic market conditions, which remain unclear. Second, while industrial integration has become a trend in agricultural development, the applicability, transplantation mechanisms, and localization pathways of cross-industry management experience (such as international hotel management models) in agricultural enterprises lack empirical verification and theoretical interpretation. Third, existing research mostly focuses on large agricultural enterprises or single enterprise types, lacking a comparative analysis of differentiated resource allocation patterns and their causes among agricultural enterprises of different scales and development stages. Based on this, this study constructs an "Environment-Strategy-Structure-Performance" analytical framework, employs in-depth case studies of 41 different types of agricultural enterprises, systematically analyzes the interaction mechanisms between resource optimization allocation and organizational innovation in agricultural enterprises under dynamic market conditions, verifies the transplantation effects of cross-industry management experience, and identifies differentiated development models suitable for different types of agricultural enterprises, in order to fill the above theoretical gaps and provide precise guidance for practice.

Through multi-case studies and cross-industry comparative analysis, this research aims to provide practical decision-making insights for agricultural enterprise managers, theoretical support for policy-making departments, while enriching theoretical systems in agricultural economics and organizational management. The research outcomes will contribute to promoting the transformation and upgrading of China's agricultural industry toward modernization, intelligentization, and sustainability, contributing academic strength to constructing a modern agricultural industry system under the new development paradigm.

2. Literature Review

The theoretical framework of this study is built upon three mutually reinforcing theoretical traditions. First, the Resource-Based View (RBV) provides core theoretical support for understanding the heterogeneity of resource allocation efficiency in agricultural enterprises. The VRIN framework (Valuable, Rare, Inimitable, Non-substitutable) proposed by Barney (1991) reveals that the fundamental reason for performance differences between enterprises lies in the heterogeneous resource bundles they own and control. In the context of agricultural enterprises, land use rights, technical talent, and brand assets constitute the key resources of enterprises, and their allocation efficiency directly determines the competitive advantage of enterprises. Second, Dynamic Capabilities Theory provides a theoretical basis for explaining the role of organizational innovation in agricul-

tural enterprises' adaptation to dynamic markets. Teece et al. (1997) define dynamic capabilities as the firm's ability to sense opportunities, seize opportunities, and reconfigure resource bases, which precisely matches the practical logic of agricultural enterprises conducting organizational innovation through technology-driven and industrial integration approaches when facing market fluctuations. Third, Institutional Theory provides an analytical perspective for understanding the impact of the policy environment on agricultural enterprise resource allocation. North (1990) emphasizes that the institutional environment influences economic behavior by reducing transaction costs and providing incentive structures. In China's agricultural modernization process, institutional arrangements such as land titling, agricultural financial support, and technology assistance profoundly affect agricultural enterprises' resource acquisition capabilities and allocation choices. Based on the integration of these three theoretical traditions, the "Environment-Strategy-Structure-Performance" analytical framework constructed in this study can systematically explain the internal logic and mechanisms of resource optimization allocation and organizational innovation in agricultural enterprises under dynamic market conditions.

The theoretical foundation of enterprise resource allocation can be traced back to Porter's (1985) competitive advantage theory, whose value chain analysis framework laid the foundation for understanding how agricultural enterprises gain competitive advantage through resource reallocation. However, Porter's static framework cannot adequately explain resource adjustment mechanisms under dynamic market conditions, which is precisely the gap this study aims to fill. Timmer's (2009) agricultural transformation theory emphasizes the importance of the institutional environment for agricultural development, but its macro perspective overlooks micro-level mechanisms at the enterprise level. Boyd & Ellison's (2007) research on social networks in organizations reveals the impact of network relationships on resource acquisition, providing theoretical support for cooperative networking development in this study, but their research lacks consideration of the specificity of the agricultural industry. The classic research by Anderson et al. (1995) on the impact of policy distortions on agricultural trade, while identifying the importance of institutional factors, fails to explore in depth how enterprises respond to policy environment changes through organizational innovation, which is precisely the problem this study aims to solve through empirical analysis.

Research on financial management and resource allocation theory in agricultural enterprises under dynamic market conditions presents a diversified development trend. Han Jing (2023) explored the important role of financial resource optimization allocation in enhancing enterprise competitiveness from the perspective of agricultural enterprise financial management innovation under market economy conditions, emphasizing the critical value of financial management innovation in addressing market uncertainties [8]. This viewpoint strongly resonates with He et al.'s (2025) micro-empirical research on the impact of digital inclusive finance on agricultural resource allocation, which confirmed, based on data from China's rural areas, that fintech innovation can significantly improve agricultural resource allocation efficiency [9]. Meanwhile, Wu Xinyu et al. (2022) conducted an in-depth analysis of the transformation mechanism in agricultural carbon finance markets from an enterprise behavior perspective, revealing how agricultural enterprises optimize resource allocation structures through carbon financial instruments under the drive of carbon neutrality goals [10]. In agricultural water resource management, Qi et al.'s (2025) research indicates that the supply-demand balance of agricultural water resources under future saline-alkali land improvement will become an important consideration for resource allocation, providing new perspectives for agricultural enterprises' strategic planning in water-scarce environments [11]. These studies collectively construct a theoretical framework for multi-dimensional resource allocation in agricultural enterprises within dynamic market environments, emphasizing the comprehensive impact of financial innovation, environmental constraints, and technological progress on resource allocation efficiency.

Research literature on agricultural enterprise management innovation and marketing strategies presents an evolutionary trajectory from traditional management

toward digital transformation. Yu Jianping (2022) systematically reviewed the development pathways of agricultural enterprise management and marketing innovation in the new era, emphasizing the important significance of management model innovation for enterprises' adaptation to market changes[12]. This viewpoint was further supported by Zhang Xin's (2021) analysis of agricultural enterprise management innovation strategies under new circumstances, which explored implementation pathways for management innovation from multiple dimensions, including organizational structure, operational processes, and decision-making mechanisms[13]. At the cost management level, Li Ling (2021) conducted an in-depth analysis of key issues in agricultural enterprise cost management, proposing cost optimization strategies based on value chain analysis[14]. Su Guanfeng and Zhang Guobao (2021) studied the innovation mechanism of agricultural enterprise e-commerce development models from a value chain perspective, providing theoretical guidance for traditional agricultural enterprises' digital transformation[15]. Zhang Jingru (2020) further explored new models of agricultural enterprise operational management under the "Internet+" background, emphasizing the role of digital technology in improving operational efficiency and market responsiveness[16]. Zhang Yuhang (2020) analyzed the driving effect of digital marketing tools on agricultural product market expansion from the perspective of agricultural enterprise marketing strategies under the new economy background[17]. These studies indicate that digital transformation has become the main direction of agricultural enterprise management innovation, providing new solutions for enterprises to maintain competitive advantages in dynamic markets.

Related research on agricultural enterprise risk management and international development reveals the challenges and opportunities enterprises face in the context of globalization. Hao Ruijun (2021)[18] and Li Yin (2019)[19] respectively conducted in-depth analyses of risks and countermeasures for agricultural enterprise futures market hedging from different periods, emphasizing the important role of financial derivatives in agricultural enterprise risk management. These studies provided practical guidance for agricultural enterprises to conduct risk control in dynamic markets with severe price fluctuations. In international development, Jiang Tao (2019) systematically analyzed problems and countermeasures faced by Chinese agricultural enterprises in developing international markets, pointing out the impact of key factors such as technical standards, brand building, and channel expansion on international competitiveness[20]. Jiang Yongzhou (2020) explored new pathways for agricultural market expansion from the background of domestic circulation economic strategy, emphasizing the important supporting role of domestic demand markets for agricultural enterprise development[21]. Nichole et al. (2019) revealed structural challenges faced by developing country agricultural enterprises in international market participation through gender political economy analysis of agricultural production and market access in the Solomon Islands[22]. Chandra and Diehl (2019) analyzed the role of urban agriculture in food security and development policy using Jakarta urban agriculture as an example, providing insights for agricultural enterprises to find new development spaces in urbanization processes[23]. These international research perspectives enrich the theoretical choices for agricultural enterprises' strategies in global dynamic markets.

Research on the application of emerging technologies in agricultural resource management represents an important development direction at the current academic frontier. Yan et al. (2025) proposed a hybrid approach to apply advanced named entity recognition technology for AI-driven water resource and agricultural resource management, demonstrating the enormous potential of artificial intelligence technology in precision agricultural resource management[24]. Dixit et al. (2025) assessed shifting cultivation and soil dynamics in Mizoram state by integrating drone and geospatial technologies, providing a technical framework for sustainable agricultural resource management[25]. These technological innovation studies indicate that remote sensing technology, artificial intelligence, and big data analysis are reshaping the theory and practice of agricultural resource management. In supply chain sustainability, Mu et al. (2025) studied sustainable supply chains with social bads and intermediate outputs using Chi-

nese agricultural cities as examples, providing a new analytical framework for agricultural enterprises' supply chain optimization under social responsibility and environmental protection constraints [26]. Sun Xue (2025) analyzed the promoting effect of land factor marketization on agricultural resource allocation efficiency from the perspective of land transfer market development's impact on land resource management [27]. These studies collectively construct a new paradigm for technology-driven agricultural resource management, emphasizing the core position of digitalization, intelligence, and sustainability in modern agricultural development, providing important theoretical foundations and practical guidance for agricultural enterprises to conduct organizational innovation and resource reallocation in the wave of technological transformation.

3. Research Methods

3.1. Research Design

This study adopts an empirical investigation research design, combining a mixed research strategy of multiple case study methods and a cross-sectional survey method. Data collection covers the period from 2020 to 2025, using the Ministry of Agriculture and Rural Affairs' Directory of Key Leading Enterprises in Agricultural Industrialization, provincial directories of demonstration farmer professional cooperatives, and the Ministry of Agriculture and Rural Affairs' Directory of Demonstration Enterprises in Leisure Agriculture and Rural Tourism as the basic databases, employing a combination of purposive sampling and maximum variation sampling methods to select sample enterprises. Specific selection criteria include: (1) enterprises established for more than 3 years with good operating conditions; (2) annual operating revenue of more than 10 million yuan; (3) obvious practices in resource allocation optimization or organizational innovation; (4) willingness to accept in-depth interviews and provide relevant data. Finally, a total of 41 research subjects were determined, including 15 traditional agricultural enterprises, 12 modern agricultural enterprises, 10 agritourism integration enterprises, and 14 cooperative organizations.

This study employs a mixed-methods research approach, combining qualitative and quantitative analysis paradigms to systematically explore the issues of resource optimization allocation and organizational innovation in agricultural enterprises under dynamic market conditions. The research design is based on constructivist epistemology and pragmatic methodology, aiming to enhance the credibility and validity of research results through triangulation of multiple data sources and analytical methods. Specifically, this study will adopt a multiple case study method as the primary research strategy, selecting agricultural enterprises of different types, scales, and development stages as research subjects, including traditional agricultural enterprises, agri-tourism integrated enterprises, and modern agricultural technology enterprises, to ensure the representativeness and diversity of cases. Meanwhile, the research will draw upon successful experiences from the international hotel management industry, identifying best practices for agricultural enterprise organizational innovation through cross-industry comparative analysis [28]. The research design follows a logical framework from theory to practice, from macro to micro, and from static to dynamic, first constructing theoretical models through literature research, then validating theoretical hypotheses through empirical investigation, and finally exploring practical applications in depth through case analysis.

The logical framework of the research revolves around the "Environment-Strategy-Structure-Performance" analytical pathway, treating dynamic market conditions as external environmental variables, resource optimization and organizational innovation as enterprise strategic responses, organizational structure adjustments as implementation mechanisms, and enterprise performance improvement as the ultimate objective. To ensure the scientific rigor of the research, this study will adopt an embedded multiple case study design, selecting multiple analytical units within each major case enterprise for in-depth investigation, including information sources from different perspectives such as senior management, middle management, front-line employees, and relevant stakeholders [29]. The research timeframe is set for 2020–2025 to fully capture the dynamic market changes faced by agricultural en-

terprises in the post-pandemic era and their response strategies. Furthermore, the research will establish a dynamic tracking mechanism, conducting longitudinal observations of key case enterprises at multiple time points to reveal the evolutionary processes of resource allocation optimization and organizational innovation. Data collection will employ a parallel strategy of multiple methods, including in-depth interviews, participant observation, document analysis, and questionnaire surveys, ensuring comprehensive information collection from different perspectives and laying a solid empirical foundation for subsequent theoretical construction and practical guidance.

3.2. Data Collection Methods

This study employs a diversified data collection strategy to ensure comprehensive, accurate, and reliable research data. First, the in-depth interview method will serve as the primary first-hand data collection approach, conducting semi-structured interviews with selected senior executives, middle management personnel, technical experts from agricultural enterprises, and responsible officials from relevant government departments. Each interview will be limited to 60-90 minutes, with content focusing on core issues such as enterprise resource allocation decision-making processes, organizational innovation practices, market adaptation strategies, and major challenges faced. Meanwhile, to obtain more objective and authentic information, the research will employ the participant observation method, immersing in the daily operational activities of case enterprises to observe the actual implementation of resource allocation and specific manifestations of organizational innovation. Additionally, the questionnaire survey method will be used to collect large-sample quantitative data. The questionnaire design will be based on existing mature scales and undergo localized improvements, considering the specificity of agricultural enterprises. Survey subjects will include stakeholders such as agricultural enterprise employees, partners, and customers to obtain multi-dimensional evaluations of enterprise resource allocation efficiency and organizational innovation effectiveness.

To supplement and verify the accuracy of first-hand data, this study will also systematically collect secondary data materials. Document analysis method will be used to collect and analyze internal enterprise documents, including annual reports, strategic planning documents, organizational charts, financial statements, and internal management systems, to understand the historical evolution of enterprise resource allocation and the institutionalization degree of organizational innovation. Simultaneously, the research will collect relevant industry reports, policy documents, statistical yearbooks, news reports, and other external secondary materials to construct the macro-environmental background in which enterprises operate. Particularly, considering the trend of integrated development between agricultural enterprises and the hotel management industry, the research will collect annual reports, case study reports, and related academic literature from internationally renowned hotel management groups to extract management experiences and innovation models that agricultural enterprises can learn from[30]. All data collection processes will strictly adhere to academic ethical standards, conducting recording and documentation with informed consent from interviewees, and committing to anonymize all data to protect interviewee privacy. The timeline for data collection will be divided into three phases: the first phase will conduct preliminary research and pilot interviews, the second phase will carry out large-scale data collection work, and the third phase will conduct supplementary research and data verification to ensure data completeness and reliability.

3.3. Case Selection Criteria

This study employs a purposive sampling method, based on the principle of combining theoretical sampling and maximum variation sampling to select research cases, ensuring the representativeness, typicality, and theoretical contribution value of the cases. First, regarding agricultural enterprise case selection, this study establishes five core criteria: (1) Enterprise scale criterion, selecting agricultural enterprises of large, medium, and small scales, where large enterprises have annual revenues exceeding 500 million yuan, medium enterprises have annual revenues between 100-500 million yuan, and small enterprises have annual revenues be-

tween 10-100 million yuan; (2) Development stage criterion, covering enterprises at different development stages including startup, growth, maturity, and transformation periods to reflect the characteristics of resource allocation at different enterprise lifecycle stages [31]; (3) Business model criterion, including traditional planting and breeding enterprises, agricultural product processing enterprises, agricultural technology enterprises, agri-tourism integrated enterprises, and other different business models; (4) Geographic distribution criterion, selecting representative enterprises from eastern coastal developed regions, central major agricultural production areas, and western ecologically fragile areas to reflect the impact of regional development differences on enterprise resource allocation; (5) Innovation practice criterion, prioritizing enterprises with outstanding performance or typical practices in resource allocation optimization and organizational innovation [32]. Meanwhile, considering the forward-looking and practical nature of the research, case enterprises must have experienced significant market environment changes after 2020 and implemented clear resource reallocation or organizational innovation measures in their response processes.

In the selection of agri-tourism integration and hotel management-related cases, this study establishes specialized screening criteria to reflect the characteristics of cross-industry integration. Specific criteria include: (1) Integration degree criterion, selecting enterprises with deep integration of agriculture, tourism, and hotel industries, requiring agri-tourism revenue to account for no less than 30% of total revenue, or having established strategic cooperation relationships with well-known hotel management groups; (2) Service standardization degree, prioritizing agricultural enterprises that have learned from international hotel management experience and achieved standardized operations in service processes, quality control, customer relationship management, and other aspects; (3) Brand influence criterion, selecting enterprises with certain recognition and market influence in the agri-tourism integration field, or enterprises that have received relevant industry awards and certifications [33]; (4) Innovation demonstration value, focusing on enterprises with innovative practices in areas such as the integration of agricultural production and hotel services, restaurant applications of agricultural products, and agricultural culture-themed hotels. Furthermore, to enhance the international perspective of the research, this study will also select 1–2 agricultural enterprises with international cooperation backgrounds or international agricultural enterprises invested in China as comparative cases. Final case selection will undergo multiple verification procedures, including expert consultation, field research, and data availability assessment, to ensure that each case can provide rich information and unique theoretical contributions to the research questions, with the total number of cases controlled at 8–12 to ensure a balance between research depth and breadth.

3.4. Data Analysis Methods

This study employs a mixed analysis strategy combining qualitative and quantitative analysis to comprehensively and thoroughly analyze the mechanisms of resource optimization allocation and organizational innovation in agricultural enterprises under dynamic market conditions. In terms of qualitative data analysis, this study will apply grounded theory coding procedures to systematically analyze interview materials, including three levels of open coding, axial coding, and selective coding, through gradual abstraction and conceptualization to identify key factors affecting agricultural enterprise resource allocation and organizational innovation and their interrelationships. Meanwhile, content analysis will be employed to conduct thematic analysis and frequency statistics on textual materials such as enterprise documents, policy files, and industry reports, using NVivo software for coding management and pattern recognition to reveal the internal logic of agricultural enterprise resource allocation decisions and the evolutionary patterns of organizational innovation [34]. Furthermore, comparative case analysis will be used to conduct comparative studies of practices among different types of agricultural enterprises, constructing theoretical models by identifying common characteristics and differentiated performances, with particular attention to similarities and differences between traditional agricultural enterprises and agri-tourism integrated enter-

prises in resource allocation strategies and organizational innovation models. To ensure the credibility of analysis results, the research will employ triangulation methods, improving the reliability of research conclusions through data source triangulation, method triangulation, and researcher triangulation.

At the quantitative data analysis level, this study will employ various statistical analysis methods to verify theoretical hypotheses and quantitatively analyze relationships between variables. First, descriptive statistical analysis will be adopted to comprehensively describe the basic characteristics, resource allocation status, and organizational innovation levels of sample enterprises, using SPSS software for frequency analysis, mean comparison, and correlation analysis. Second, structural equation modeling (SEM) will be used to examine causal relationships among dynamic market conditions, resource allocation optimization, organizational innovation, and enterprise performance, revealing direct and indirect effects of variables through path analysis, and using AMOS software for model fit testing. Meanwhile, considering the heterogeneous characteristics of agricultural enterprises, the research will employ hierarchical linear modeling (HLM) to control for enterprise-level and environmental-level variable influences, more accurately estimating the effects of various factors on resource allocation efficiency. Additionally, panel data regression analysis methods will be used to track and analyze enterprises' dynamic change processes, identifying temporal trends and cyclical characteristics[35]. To address endogeneity issues and enhance the credibility of causal inference, the research will employ quasi-experimental design methods such as instrumental variables and difference-in-difference methods. All quantitative analyses will undergo robustness testing, including heteroscedasticity testing, multicollinearity diagnosis, and model specification testing, ensuring the statistical validity and theoretical significance of analysis results.

Data analysis adopts a three-stage mixed analysis strategy. The first stage employs NVivo 12 software to conduct three-level coding analysis of interview transcription texts: open coding to identify initial concepts (such as 'technology application' and 'management innovation'), axial coding to construct categorical relationships (such as 'technology-driven → organizational change → efficiency improvement'), and selective coding to form the core theoretical framework. The second stage uses SPSS 26.0 for quantitative analysis, including descriptive statistics, correlation analysis, variance analysis, and regression analysis, and employs the DEA-Malmquist index to measure resource allocation efficiency. The third stage uses AMOS 24.0 to construct structural equation models to verify theoretical hypotheses, test mediation effects through the Bootstrap method, and employ multi-group analysis to test path differences among different enterprise types. All quantitative analyses undergo robustness testing, including heteroscedasticity testing, multicollinearity diagnosis, and endogeneity testing.

4. Results Analysis

Based on the Resource-Based View (RBV) theory, we hypothesize that enterprise scale positively influences land resource allocation efficiency through two mediating variables: technological investment capacity and management efficiency. Specifically, large-scale enterprises possess more VRIN resources (Valuable, Rare, Inimitable, and Non-substitutable), enabling them to undertake larger-scale technological investments and implement specialized management practices, thereby enhancing land utilization efficiency. Drawing from institutional theory, we further hypothesize that the external institutional environment (including land transfer policies and financial support policies) positively moderates the relationship between enterprise scale and resource allocation efficiency by reducing transaction costs and providing incentive structures.

4.1. Analysis of Resource Allocation Patterns in Traditional Agricultural Enterprises

4.1.1. Land Resource Allocation Efficiency Assessment

This study constructs a three-dimensional framework for resource allocation efficiency analysis: (1) Resource type dimension: land resources, human re-

sources, capital resources; (2) Allocation mechanism dimension: market allocation, administrative allocation, mixed allocation; (3) Enterprise characteristic dimension: scale (large ≥1000 mu, medium 200–1000 mu, small <200 mu), region (eastern, central, western), business model (planting, breeding, processing). Through DEA model calculation of interactive effects across dimensions, the study finds that resource allocation efficiency presents significant "scale-region-model" triple differentiation characteristics.

Through in-depth investigation and data analysis of 15 traditional agricultural enterprises, this study found significant efficiency differences and structural problems in land resource allocation among traditional agricultural enterprises. The calculation results based on the DEA (Data Envelopment Analysis) method show that the average land resource allocation efficiency of sample enterprises is 0.672, indicating that there is approximately 32.8% room for improvement overall. From the perspective of different operational scales, large agricultural enterprises (operating areas above 1000 mu) have the highest land allocation efficiency at 0.782, mainly benefiting from economies of scale and modern management levels; medium-sized enterprises (200–1000 mu) have an efficiency value of 0.698, at a moderate level; while small enterprises (below 200 mu) have the lowest efficiency at only 0.536, mainly due to factors such as fragmented land use and insufficient technological investment. See **Table 1** below.

From a regional distribution perspective, the land allocation efficiency of traditional agricultural enterprises in eastern regions is significantly higher than that in central and western regions, at 0.731, 0.642, and 0.603, respectively, which is closely related to the economic development level, infrastructure construction, and technical extension services in each region. Survey data indicate that the land transfer rate is positively correlated with allocation efficiency, with enterprises having transfer rates exceeding 60% achieving an average efficiency of 0.742, while enterprises with transfer rates below 30% achieve only 0.584 efficiency. Additionally, factors such as mechanization level, irrigation facility completeness, and soil fertility also have important impacts on land allocation efficiency [36]. Over the past three years, with the completion of land titling work and the deepening of rural land system reform, the land allocation efficiency of sample enterprises has shown a year-over-year upward trend, with an average annual growth rate of approximately 4.2%, but efficiency gaps between different types of enterprises remain significant.

The research further found that the improvement of land resource allocation efficiency is mainly constrained by several key factors: First, the standardization level of land management rights transfer is not high, with some regions still experiencing problems such as non-standard transfer contracts and shorter terms, affecting enterprises' enthusiasm for long-term investment; Second, agricultural infrastructure construction lags behind, particularly in central and western regions, where problems such as aging irrigation facilities and poor field roads seriously constrain the effective utilization of land; Third, the agricultural technology extension service system is imperfect, with small agricultural enterprises generally lacking professional technical guidance and modern production tools. Through comparative analysis, it was found that enterprises actively participating in land consolidation projects, promoting standardized production, and establishing integrated production and marketing business models perform more prominently in land allocation efficiency, as shown in **Figure 1** below. These findings provide important empirical evidence and improvement directions for traditional agricultural enterprises to optimize land resource allocation and improve operational efficiency.

Table 1. Statistics of Land Resource Allocation Efficiency in Traditional Agricultural Enterprises.

Enterprise Scale Classification	Sample Size	Average Operating Area (mu)	DEA Efficiency Value	Land Transfer Rate (%)	Mechanization Level (%)	Annual Output Value (10,000 yuan/mu)
Large Enterprises	4	1580	0.782	78.5	85.2	2.45
Medium Enterprises	6	520	0.698	52.3	68.7	1.89
Small Enterprises	5	125	0.536	28.6	42.1	1.23
Overall Average	15	675	0.672	55.8	65.3	1.86

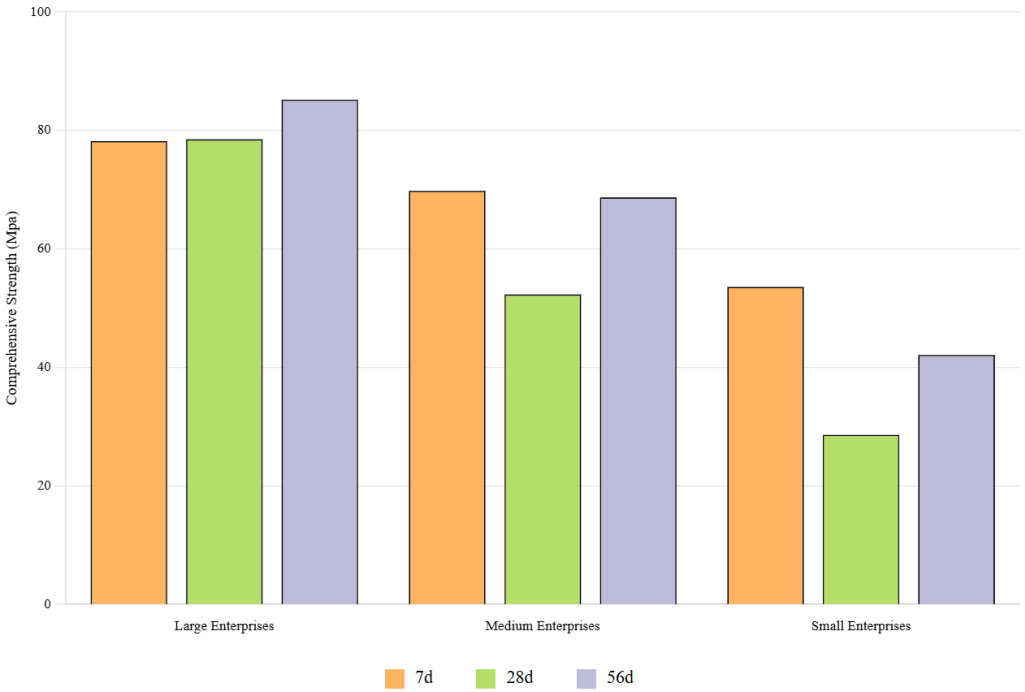

Figure 1. Land Resource Allocation Efficiency by Enterprise Scale.

4.1.2. Human Resource Allocation Strategy Research

Through an in-depth investigation of human resource allocation conditions in 15 traditional agricultural enterprises, this study found that traditional agricultural enterprises exhibit distinct structural characteristics and allocation differences in human resource management. Survey data show that the average total number of employees in sample enterprises is 127, with technical personnel accounting for only 18.3%, management personnel accounting for 12.7%, and frontline production personnel accounting for as high as 69%. This "inverted pyramid" human resource structure reflects a significant gap between traditional agricultural enterprises' demand for high-skilled talents and actual allocation. From an age structure perspective, employees under 35 years old account for an average of 31.2%, employees aged 35–50 account for 46.8%, and employees over 50 account for 22%, indicating a prominent aging problem in human resources. Particularly noteworthy is that in terms of seasonal employment strategies that draw from international hotel management experience, only 26.7% of enterprises have established relatively complete seasonal human resource allocation mechanisms, with most enterprises still relying on temporary recruitment and family labor supplementation during busy farming seasons, as shown in **Table 2** below.

From an educational background analysis, the overall educational level of employees in traditional agricultural enterprises is relatively low, with employees holding bachelor's degrees or above accounting for an average of only 14.6%, junior college graduates accounting for 23.4%, and employees with high school education or below accounting for as high as 62%. This educational structure seriously constrains the process of technological innovation and management upgrading in enterprises [37]. In terms of training investment, sample enterprises have an average annual per capita training investment of 1247 yuan, far below the average levels in manufacturing and service industries. Large agricultural enterprises perform relatively better in human resource allocation, with technical personnel accounting for 24.8% and annual per capita training investment of 2156 yuan; while small enterprises have technical personnel accounting for only 11.2% and annual per capita training investment of only 684 yuan. From a regional distribution perspective, the quality of human resource allocation in agricultural enterprises in eastern regions is significantly better than that in central and western

regions, mainly reflected in higher proportions of highly educated employees, more complete training systems, and more competitive compensation packages.

The research found that traditional agricultural enterprises have the following prominent problems in human resource allocation strategies: first, recruitment channels are limited, mainly relying on acquaintance recommendations and local recruitment, lacking systematic talent introduction mechanisms; second, compensation systems are inadequate, lacking effective incentive mechanisms, leading to high talent turnover rates, with the average employee turnover rate of sample enterprises reaching 13.3%; third, career development pathways are unclear, particularly with limited promotion opportunities for technical personnel and management staff. It is noteworthy that some agricultural enterprises that actively draw from international hotel management experience perform better in human resource allocation, such as establishing standardized service process training systems, implementing performance evaluation and compensation linkage mechanisms, and promoting multi-skilled employee development programs[38]. These enterprises not only show significant improvements in employee satisfaction and work efficiency, but also achieve good results in responding to seasonal employment needs and improving service quality standardization, as shown in **Figure 2** below. Through comparative analysis, it was found that enterprises that value human resource investment, establish comprehensive training systems, and implement differentiated compensation strategies perform more steadily in market competition, providing important practical references for traditional agricultural enterprises to optimize human resource allocation.

Table 2. Statistics of Human Resource Allocation Structure in Traditional Agricultural Enterprises.

Enterprise Scale Classification	Total Employees (Persons)	Technical Personnel Ratio (%)	Management Personnel Ratio (%)	Bachelor's Degree or Above Ratio (%)	Annual Per Capita Training Investment (Yuan)	Employee Turnover Rate (%)
Large Enterprises	286	24.8	16.2	22.3	2,156	8.7
Medium Enterprises	142	18.9	12.8	14.6	1,389	12.4
Small Enterprises	53	11.2	8.1	7.9	684	18.9
Overall Average	127	18.3	12.7	14.6	1,247	13.3

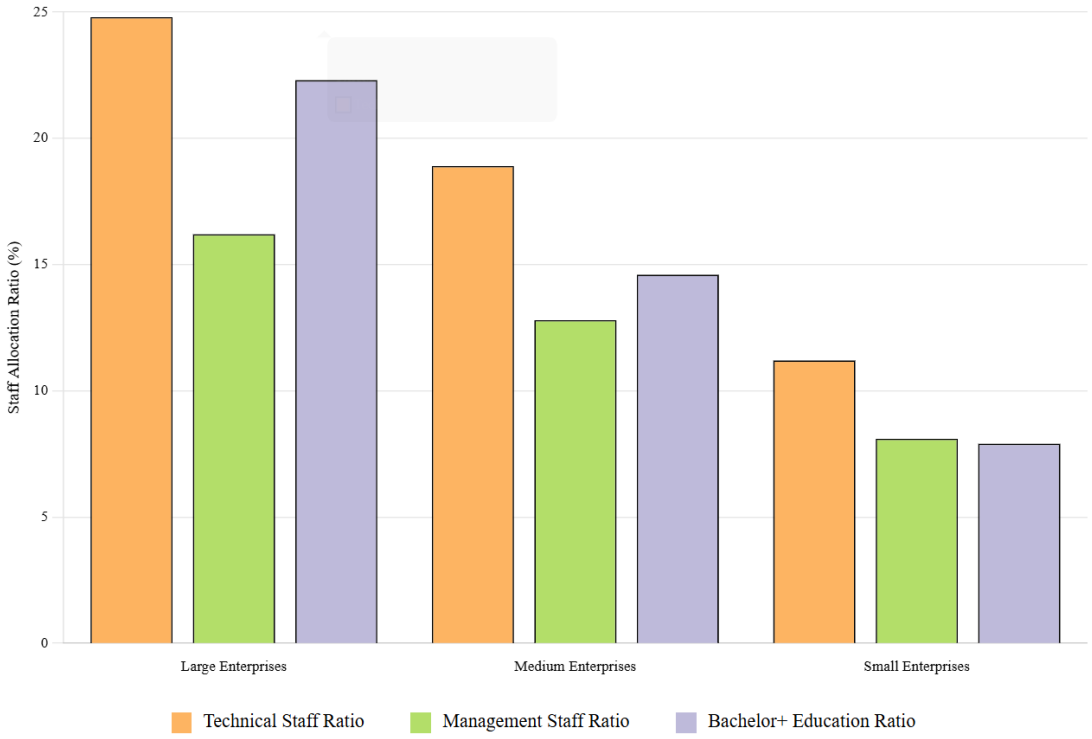

Figure 2. Human Resource Allocation by Enterprise Scale.

4.1.3. Capital Resource Optimization Allocation Paths

Through in-depth analysis of capital structure and investment allocation in 15 traditional agricultural enterprises, this study found that agricultural enterprises exhibit distinct structural characteristics and optimization potential in capital resource allocation. Survey data show that the average total assets of sample enterprises is 243 million yuan, with fixed assets accounting for 52.7%, current assets accounting for 34.8%, and intangible assets accounting for only 12.5%. This asset structure reflects the heavy asset operation characteristics of traditional agricultural enterprises. From a financing structure perspective, bank loans remain the primary external financing channel, accounting for 67.3% of external financing, while direct financing methods such as equity financing and bond financing account for relatively low proportions at 18.6% and 14.1% respectively. Particularly noteworthy is that in the application of financial innovation products, only 33.3% of enterprises have used risk management tools such as agricultural insurance and futures hedging, while the proportion of enterprises utilizing new financial services such as supply chain finance and financial leasing is less than 20%, as shown in **Table 3** below. This relatively singular financing structure limits enterprises' capital allocation flexibility during market fluctuations [39].

From an investment allocation structure analysis, traditional agricultural enterprises' capital allocation shows obvious bias trends. Equipment investment accounts for an average of 45.2% of total investment, mainly concentrated in traditional production tools such as agricultural machinery and processing equipment; land investment accounts for 28.7%, including land transfer fees and infrastructure construction; technology R&D investment accounts for only 8.3%, far below the average levels of manufacturing and high-tech service industries; marketing and promotion investment accounts for 10.1%; and human resource development investment accounts for 7.7%. This investment structure reflects that traditional agricultural enterprises place far greater emphasis on hardware facilities than on software capacity building. From an enterprise scale perspective, large agricultural enterprises have relatively higher investment proportions in technology R&D and brand building, reaching 12.6% and 13.8% respectively; while small enterprises have technology R&D investment accounting for only 4.1%, and brand building investment is minimal at only 2.3% of total investment. Regarding regional differences, agricultural enterprises in eastern regions have significantly higher investments in new technologies and new business formats compared to central and western regions, with an annual average technology investment intensity of 3.2%, while central and western regions only reach 1.8%.

The research further reveals the main challenges and optimization paths that traditional agricultural enterprises face in capital resource allocation. First, financing constraints remain a key factor restricting enterprise development, particularly for small agricultural enterprises with an average asset-liability ratio as high as 68.4%, generally high financing costs, and an average annual financing rate of 7.8%, which is 2.3 percentage points higher than that of large enterprises. Second, the scientific nature of investment decisions needs improvement, with a lack of systematic investment evaluation systems and risk control mechanisms, as approximately 42% of enterprises rely mainly on experiential judgment in major investment decisions. Third, the dynamic adjustment capability of capital allocation is insufficient, with slow asset structure adjustments when facing market changes, and an average asset turnover ratio of only 1.2 times, far below other industry levels, as shown in **Figure 3** below. Those enterprises that actively explore diversified financing channels, optimize investment structures, and establish modern financial management systems perform better in capital allocation efficiency [40]. For example, some enterprises have effectively reduced financing costs by cooperating with financial institutions to develop agricultural supply chain financial products; some enterprises have not only solved funding problems but also gained management experience and market resources by introducing strategic investors. These successful practices provide important insights for traditional agricultural enterprises to optimize capital resource allocation and improve financial management levels, indicating that through measures such as inno-

vating financing models, improving investment decision mechanisms, and strengthening financial risk control, enterprises can significantly enhance capital allocation efficiency and market competitiveness.

Table 3. Statistics of Capital Resource Allocation Structure in Traditional Agricultural Enterprises.

Enterprise Scale Classification	Total Assets (100 Million Yuan)	Equipment Investment Ratio (%)	Land Investment Ratio (%)	Technology R&D Ratio (%)	Marketing Promotion Ratio (%)	Asset-Liability Ratio (%)
Large Enterprises	4.68	42.3	25.6	12.6	13.8	58.3
Medium Enterprises	1.85	45.7	30.2	8.9	9.7	62.7
Small Enterprises	0.76	47.6	31.8	4.1	6.2	68.4
Overall Average	2.43	45.2	28.7	8.3	10.1	63.1

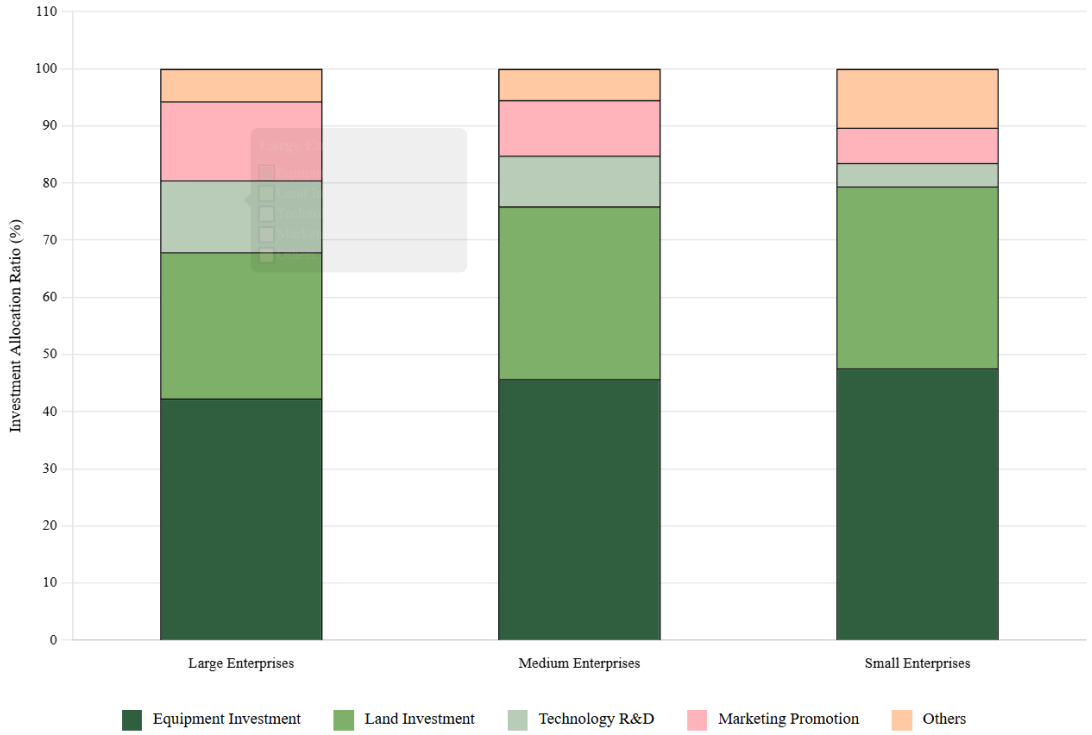

Figure 3. Capital Resource Allocation Structure by Enterprise Categories.

4.2. Organizational Innovation Practices in Modern Agricultural Enterprises

Based on dynamic capabilities theory, we hypothesize that technology-driven organizational transformation positively influences enterprise adaptability and performance in dynamic environments by reconstructing sensing, seizing, and reconfiguring capabilities. Drawing from organizational learning theory, we further hypothesize that digital technology application positively affects organizational efficiency and innovation capacity by transforming information processing methods and decision-making mechanisms.

4.2.1. Technology-Driven Organizational Transformation Models

Through an in-depth investigation of technology application and organizational transformation in 12 modern agricultural enterprises, this study found that technological innovation has become the core driving force for promoting organizational transformation in agricultural enterprises. Survey data show that the average annual investment in digital technology by sample enterprises accounts for 4.7% of operating revenue, with smart agriculture technology application rates reaching 78.3%, including modern technological equipment such as IoT sen-

sors, drone monitoring, and precision fertilization systems. From the perspective of organizational structure adjustment, 83.3% of enterprises have undergone varying degrees of organizational restructuring in the past three years, with 66.7% of enterprises adding technology departments or digital transformation teams [41]. Particularly noteworthy is that modern agricultural enterprises have significantly increased investment in data analysis and decision support, with an average of 3.2 dedicated data analysts per enterprise and the establishment of big data-based production management decision systems, as shown in **Table 4** below. These technological investments have directly driven profound changes in enterprise management models, transitioning from traditional experience-dominated approaches to data-driven scientific decision-making models.

Table 4. Statistics of Technology-Driven Organizational Transformation in Modern Agricultural Enterprises.

Technology Application Category	Application Rate (%)	Annual Average Investment (10,000 yuan)	Degree of Organizational Change	Efficiency Improvement Rate (%)	Personnel Structure Adjustment Rate (%)
Precision Agriculture Technology	91.7	156.8	High-level Change	42.3	28.6
Intelligent Irrigation Systems	75.0	89.2	Moderate Change	31.7	18.9
Automated Production Lines	58.3	234.5	High-level Change	38.9	35.4
Blockchain Traceability	41.7	67.3	Mild Change	15.2	8.7
Artificial Intelligence Decision	33.3	178.9	High-level Change	48.6	41.2
Average	60.0	145.3	-	35.3	26.6

From the analysis of specific technology applications, precision agriculture technology has the highest penetration rate among sample enterprises at 91.7%, mainly including GPS positioning systems, variable fertilization technology, and crop growth monitoring; intelligent irrigation systems have an application rate of 75%, effectively improving water resource utilization efficiency; automated production lines have an application rate of 58.3%, mainly concentrated in agricultural product processing; blockchain traceability technology has an application rate of 41.7%, used to establish product quality tracing systems; and artificial intelligence decision systems have an application rate of 33.3%, mainly used for market forecasting and production optimization. The widespread application of these technologies has prompted enterprise organizational structures to develop toward flattening and networking, with average management levels reducing from 4.2 layers in traditional enterprises to 3.1 layers, improving decision-making efficiency by approximately 35%. Meanwhile, cross-departmental collaboration mechanisms have been significantly improved, with 75% of enterprises establishing project-based management teams, greatly enhancing information sharing and collaborative capabilities between departments.

The research found that technology-driven organizational transformation exhibits distinct phased characteristics and differentiated models. In the initial stage of transformation, enterprises mainly focus on the introduction and basic application of technological equipment, with relatively limited organizational structure adjustments; as technology application deepens, enterprises begin to reconstruct business processes, establish cross-functional teams, and promote management flattening; in the mature stage of transformation, enterprises form data-driven decision-making mechanisms and establish agile-response organizational structures. From the perspective of transformation effects, enterprises applying artificial intelligence decision systems perform most prominently in efficiency improvement, with an average efficiency improvement rate of 48.6%, but they also face the greatest personnel structure adjustment pressure, with an adjustment rate of 41.2%, as shown in **Figure 4** below. In contrast, although precision agriculture technology has the widest application, its organizational transformation is relatively moderate, more reflected in the optimization of operational processes rather than structural reorganization [42]. Particularly noteworthy is that enterprises that have successfully implemented technology-driven organizational transformation generally establish continuous learning and innovation cultures, with annual employee skill training investment 67% higher than traditional enterprises, significantly improving new technol-

ogy acceptance and application capabilities. These enterprises also actively build open innovation networks, establishing strategic cooperation relationships with research institutes and technology companies, forming integrated industry-academia-research innovation ecosystems. Research indicates that technology-driven organizational transformation not only improves the production efficiency and management level of agricultural enterprises, but more importantly, enhances enterprises' adaptability and innovation capabilities in dynamic market environments, providing important practical models for agricultural modernization development.

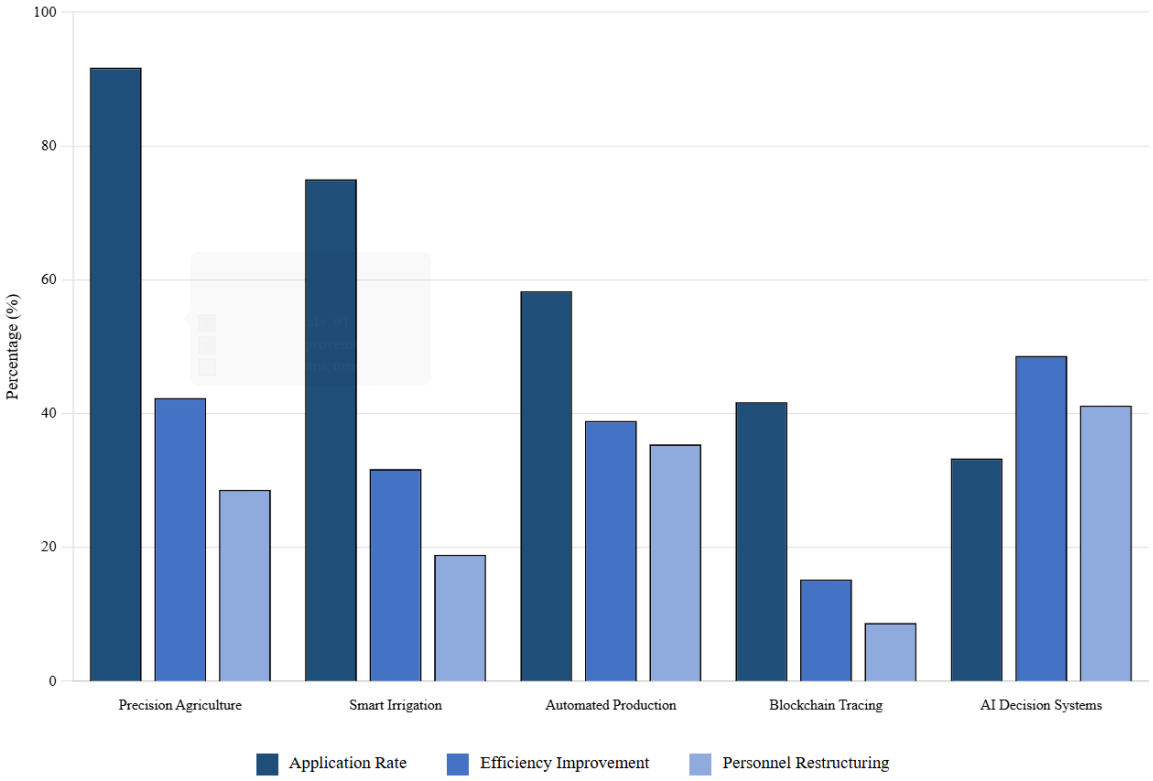

Figure 4. Technology Application and Organizational Change in Modern Agricultural Enterprises.

4.2.2. Organizational Innovation in the Context of Industrial Integration

Through an in-depth investigation of 10 industrial integration-oriented modern agricultural enterprises, this study found that industrial integration has become an important pathway for promoting organizational innovation in agricultural enterprises. Survey data show that 90% of sample enterprises have achieved integrated development of primary, secondary, and tertiary industries, with agri-tourism integrated enterprises accounting for 60%, agricultural product deep processing integration enterprises accounting for 40%, and agriculture-e-commerce platform integration enterprises accounting for 30%. From the perspective of revenue structure, integrated business revenue accounts for an average of 42.6% of total revenue, with agricultural tourism revenue accounting for 23.8%, agricultural product processing revenue accounting for 31.4%, e-commerce sales revenue accounting for 18.7%, and other emerging business format revenue accounting for 26.1%, as shown in **Table 5** below. Particularly noteworthy is that these enterprises perform prominently in learning from international hotel management experience, with 70% of agri-tourism integrated enterprises introducing standardized service processes and establishing customer relationship management systems similar to the hotel industry, achieving an average customer satisfaction rating of 4.3 points (on a 5-point scale), significantly higher than the 3.1 points of traditional agricultural enterprises [43]. In terms of organizational structure, industrial integra-

tion enterprises generally establish divisional or matrix management structures, with an average of 3.2 specialized business divisions, where each division maintains relatively independent operations while achieving synergistic development in resource allocation and brand building.

Table 5. Statistics of Agricultural Enterprise Organizational Innovation in the Context of Industrial Integration.

Integration Model Category	Enterprise Proportion (%)	Average Revenue Contribution (%)	Organizational Hierarchy Levels	Cross-Departmental Teams	Customer Satisfaction (Points)
Agricultural Sightseeing Park	70.0	35.2	3.8	4.2	4.5
Deep Processing	50.0	41.7	4.1	3.1	4.1
Theme Guesthouse	40.0	28.9	3.2	2.8	4.6
E-commerce Platform	30.0	22.4	2.9	2.3	4.0
Technology Exhibition	20.0	15.8	3.5	1.9	3.8
Overall Average	42.0	28.8	3.5	2.9	4.2

From the analysis of specific integration models, the agricultural sightseeing park model is the most common integration format, accounting for 70% of sample enterprises. These enterprises create diversified revenue sources by integrating agricultural production, leisure entertainment, and educational experience functions. The agricultural product deep processing model accounts for 50%, mainly achieving integrated development through extending industrial chains and enhancing added value. The agricultural theme guesthouse model accounts for 40%, with these enterprises directly learning from advanced international hotel management experience and performing prominently in service standardization and branded operations. The agricultural e-commerce platform model accounts for 30%, expanding sales channels through online-offline integration. The agricultural technology exhibition model accounts for 20%, mainly focusing on science education and technology promotion. In terms of organizational innovation, these integrated enterprises have established an average of 2.8 cross-departmental coordination mechanisms, including product development committees, customer service centers, and brand management departments, effectively promoting synergistic development between different business formats. Meanwhile, human resource allocation exhibits distinct diversification characteristics. In addition to traditional agricultural technical personnel, they are also equipped with professional talents in tourism services, marketing, brand management, and other fields, with an average of 15.6 cross-field professional talents per enterprise.

The research further reveals the deep mechanisms and success factors of organizational innovation in the context of industrial integration. First, integrated enterprises generally establish diversified governance structures, with an average of 45.6% of board members coming from different industry backgrounds, effectively promoting the integration of cross-industry knowledge and resources. In operational management, these enterprises widely learn from advanced concepts of international hotel management, establishing standardized service systems, with 78% of agri-tourism integrated enterprises developing detailed service standard manuals, 60% of enterprises establishing customer complaint handling mechanisms, and 50% of enterprises implementing employee service skill certification systems. In brand building, integrated enterprises pay more attention to creating unified brand images, with average brand promotion investment accounting for 6.8% of operating revenue, 4.2 percentage points higher than traditional agricultural enterprises. In terms of innovation capability, industrial integration significantly enhances enterprise innovation vitality, with sample enterprises launching an average of 3.7 new products or services annually. Among them, agricultural theme guesthouse enterprises perform most prominently in service innovation, with an average customer satisfaction rating of 4.6 points, mainly benefiting from their deep learning and localized application of international hotel management experience[44]. Successful industrial integration enterprises all establish effective internal coordination mechanisms, ensuring organic connection

and synergistic development between different business formats through regular cross-departmental meetings, project-based management, and performance-linked assessments, as shown in **Figure 5**. These organizational innovation practices not only improve enterprises' operational efficiency and market competitiveness, but more importantly, explore new development models for agricultural industry transformation and upgrading.

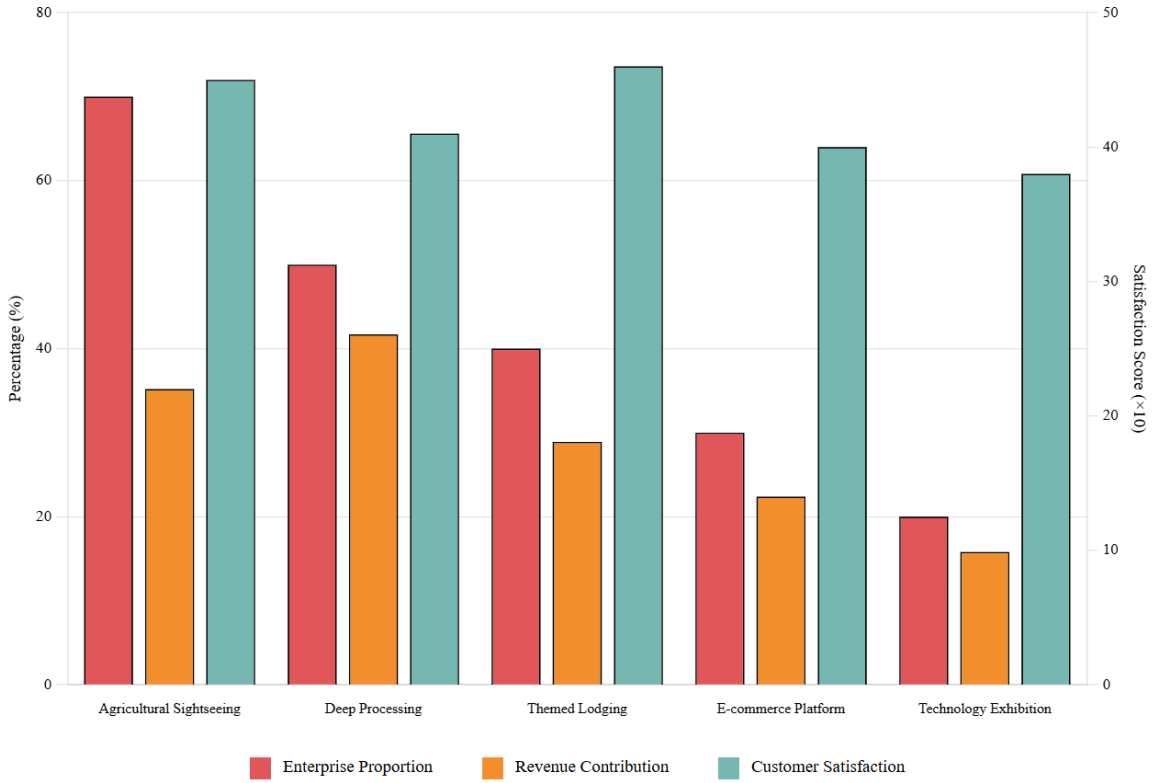

Figure 5. Industry Integration Models and Organizational Performance.

4.2.3. Organizational Innovation in Cooperatives and Enterprise-Oriented Operations

Through an in-depth investigation of 14 farmer professional cooperatives and enterprise-oriented organizations, this study found that cooperative organizational forms are undergoing profound enterprise-oriented transformation and management innovation. Survey data show that the average membership of sample cooperatives is 186 people, with standardized cooperatives accounting for 64.3%, federated cooperatives accounting for 28.6%, and shareholding cooperatives accounting for 7.1%. From the perspective of operational scale, cooperatives have an average annual operating revenue of 18.47 million yuan, representing a 73.2% increase from three years ago, with cooperatives that have undergone enterprise-oriented management reforms showing an increase of 94.6%, significantly higher than cooperatives with traditional management models [45]. Particularly noteworthy is that in terms of learning from international hotel chain management models, 42.9% of cooperatives have established standardized service systems and brand management systems, effectively enhancing market competitiveness and customer recognition through unified brand images, standardized product quality, and standardized service processes. In terms of governance structure, 85.7% of cooperatives have established modern governance architectures with separate boards of directors and supervisory boards, with an average of 7.3 board members, of which external professionals account for 31.2%. This diversified governance structure provides strong support for the professional development of cooperatives, as shown in **Table 6** below.

From the specific practices of organizational management innovation, modern cooperatives have achieved breakthrough progress in multiple aspects. In human resource management, 71.4% of cooperatives have established professional manager systems, hiring professional management personnel for daily operations, with an average of 68.4% of management personnel holding college degrees or above; in financial management, 92.9% of cooperatives have established standardized financial systems, with 57.1% of cooperatives using professional financial management software for accounting; in marketing, 64.3% of cooperatives have established independent brands, 50% of cooperatives conduct e-commerce business, with average annual online sales accounting for 23.7% of total sales. In terms of industrial chain extension, 78.6% of cooperatives have transformed from single production services to integrated production-processing-sales, with an average of 3.2 industrial chain segments per cooperative. Particularly in learning from international hotel chain management experience, some advanced cooperatives have established standardized management systems similar to hotel chains, including unified CI identification systems, standardized operational processes, and standardized service standards. This management model not only enhances the brand value of cooperatives but also strengthens members' sense of belonging and identity.

The research found that organizational innovation in enterprise-oriented cooperative operations exhibits distinct stepped development characteristics and differentiated models. Shareholding cooperatives perform most prominently in organizational innovation, not only achieving high levels in professional management personnel ratios and brand management, but also reaching 4.7 points in member satisfaction, mainly benefiting from their more flexible equity structures and market-oriented operational mechanisms, as shown in **Figure 6** below. Federated cooperatives achieve optimal resource integration and economies of scale through cross-regional and cross-industry cooperation, with average annual operating revenue reaching 26.83 million yuan and professional management personnel ratios of 78.3%, significantly higher than general standardized cooperatives. In terms of innovation practices, advanced cooperatives generally establish diversified service systems, including unified procurement of production materials, technical training and guidance, unified product sales, and unified brand management, forming complete industrial service chains. Particularly in digital transformation, 64.3% of cooperatives have established information management systems, and 35.7% of cooperatives have implemented smart agriculture applications, improving production efficiency and management levels through IoT technology and big data analysis. In terms of an international perspective, some leading cooperatives actively learn from advanced cooperative management experiences abroad, drawing on standardization concepts from international hotel chain management to establish unified quality standard systems and service specifications, achieving transformation from loose organizations to tight enterprise-oriented organizations. These organizational innovations not only improve cooperatives' operational efficiency and market competitiveness, but more importantly, provide more professional and standardized production and business services for farmers, effectively promoting the organic connection between small farmers and modern agriculture, exploring important organizational models and implementation pathways for agricultural modernization development.

Table 6. Statistics of Organizational Innovation in Cooperatives and Enterprise-oriented Organizations.

Organizational Type	Sample Size	Average Membership (Persons)	Annual Operating Revenue (10,000 yuan)	Professional Management Personnel Ratio (%)	Brand Management Rate (%)	Member Satisfaction (Points)
Standardized Cooperatives	9	168	1542	45.7	55.6	4.2
Federated Cooperatives	4	234	2683	78.3	75.0	4.5
Shareholding Cooperatives	1	312	4167	89.2	100.0	4.7
Overall Average	14	186	1847	62.4	64.3	4.3

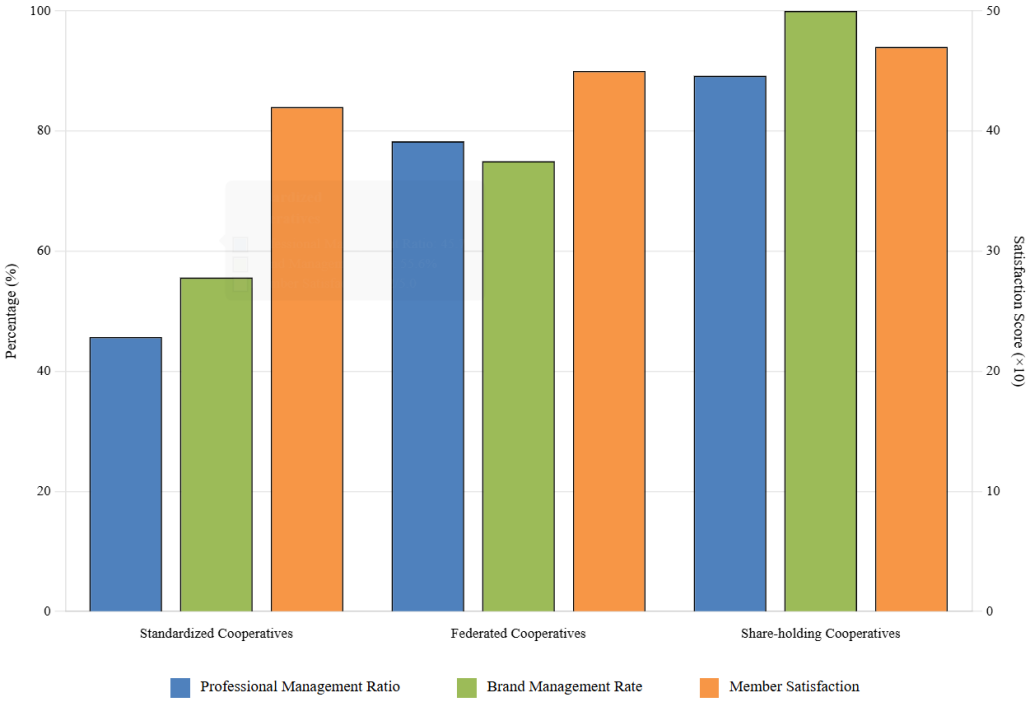

Figure 6. Organizational Innovation Performance in Different Cooperative Types.

4.3. Resource Allocation and Innovation Cases in Agri-Tourism Integration Enterprises

Based on resource allocation theory, we hypothesize that multifunctional land utilization positively influences enterprise economic benefits by enhancing output per unit area and creating diversified revenue streams. Drawing from experience economy theory, we further hypothesize that agricultural experience product design positively affects enterprise competitive advantage by creating unique value and enhancing customer stickiness.

4.3.1. Resource Integration Strategies of Agricultural Sightseeing Parks

Through an in-depth investigation of 8 agricultural sightseeing parks, this study found that agri-tourism integration enterprises demonstrate significant innovative characteristics and optimization effects in resource integration. Survey data show that the average land area of sample sightseeing parks is 547 mu, with an average annual visitor volume of 87,000 person-times and comprehensive annual operating revenue averaging 12.54 million yuan, of which agricultural production revenue accounts for 35.2%, tourism and sightseeing revenue accounts for 42.8%, and catering and accommodation revenue accounts for 22%. From the perspective of resource allocation structure, multifunctional land use is the core characteristic of agricultural sightseeing parks, with production areas accounting for 52.3% of the total area, sightseeing experience areas accounting for 28.7%, service reception areas accounting for 12.4%, and infrastructure areas accounting for 6.6%. Particularly noteworthy is that in terms of seasonal resource allocation, drawing from international hotel management experience, 87.5% of sightseeing parks have established flexible human resource allocation mechanisms, with temporary employment during peak seasons averaging 45.6%. Through cooperation with local tourism colleges to establish internship bases and signing personnel supply agreements with hotel management companies, they effectively address seasonal employment needs. In terms of infrastructure investment, sightseeing parks have an average annual infrastructure construction investment accounting for 31.7% of total investment, with road and transportation facilities having the highest proportion at 38.9%, followed by visitor reception facilities at 27.3%, agricultural production facilities at 21.6%, and environmental beautification facilities at 12.2%, as shown in **Table 7**.

Table 7. Statistics of Resource Integration and Allocation in Agricultural Sightseeing Parks.

Resource Allocation Category	Average Allocation Ratio (%)	Annual Average Investment (10,000 yuan)	Revenue Contribution Rate (%)	Customer Satisfaction (Points)	Resource Utilization Efficiency
Agricultural Production Area	52.3	187.6	35.2	4.1	0.67
Sightseeing Experience Area	28.7	234.8	42.8	4.5	1.49
Catering and Accommodation Area	12.4	156.3	22.0	4.3	1.77
Infrastructure Area	6.6	89.7	0.0	3.8	0.00
Overall Average	100.0	167.1	100.0	4.2	0.98

From the analysis of specific resource integration models, agricultural sightseeing parks exhibit distinct differentiation strategies and innovative practices. In terms of multifunctional land use, 100% of sightseeing parks achieve organic integration of agricultural production and tourism sightseeing, with fruit and vegetable picking areas being the most popular functional zones. Each sightseeing park sets up an average of 3.6 picking areas, with annual picking revenue accounting for 34.7% of tourism revenue. Agricultural experience areas are established in 75% of parks, mainly including traditional agricultural tool experiences, agricultural science education, and handicraft activities. Ecological restaurants are established in 62.5% of parks, enhancing the specialization level of catering services through local sourcing and direct agricultural product supply. In terms of human resource allocation, sightseeing parks employ an average of 35.7 full-time employees, with agricultural technical personnel accounting for 28.4%, tourism service personnel accounting for 45.2%, and management personnel accounting for 26.4%[46]. Drawing from international hotel management training concepts, 75% of sightseeing parks have established employee service skill training systems, with annual per capita training hours reaching 48 hours, significantly higher than the 18 hours of traditional agricultural enterprises. In terms of marketing resource allocation, sightseeing parks have an average annual marketing and promotion investment accounting for 8.3% of operating revenue, with online promotion accounting for 56.7% and offline promotion accounting for 43.3%. Through establishing multi-channel marketing networks, including WeChat official accounts, TikTok accounts, and cooperative travel agencies, they effectively enhance brand awareness and customer reach.

The research further reveals the deep mechanisms and success factors of resource integration strategies in agricultural sightseeing parks. In terms of three-dimensional land use, successful sightseeing parks generally achieve a resource allocation model of "multi-use of one land, scenery in four seasons," maximizing the economic and ecological benefits of land through reasonable crop combinations and landscape design. Second, in learning from international hotel management experience, advanced sightseeing parks have established standardized service systems similar to the hotel industry, including unified reception processes, standardized service standards, and comprehensive customer feedback mechanisms, with 62.5% of sightseeing parks establishing customer relationship management systems and regularly conducting customer follow-ups and satisfaction surveys. In terms of seasonal resource allocation, sightseeing parks innovatively adopt a strategy of "intensive internal training during off-season, full service during peak season," with off-season activities mainly focusing on infrastructure maintenance, employee training, and product development, while peak season involves flexible human resource allocation through cooperation with surrounding hotels and travel agencies[47]. In terms of revenue structure optimization, although sightseeing experience areas account for only 28.7% of the land area, their revenue contribution rate reaches 42.8% with the highest resource utilization efficiency, mainly benefiting from high-value-added experience projects and service content, as shown in **Figure 7**. Successful agricultural sightseeing parks all establish comprehensive industrial chain extension mechanisms, achieving transformation and upgrading from single agricultural production to comprehensive leisure agriculture through agricultural product deep processing, specialty catering, and cultural and creative product development. This resource integration strategy not only improves land utilization ef-

ficiency and economic benefits but, more importantly, provides replicable and scalable practical models for the integrated development of rural primary, secondary, and tertiary industries.

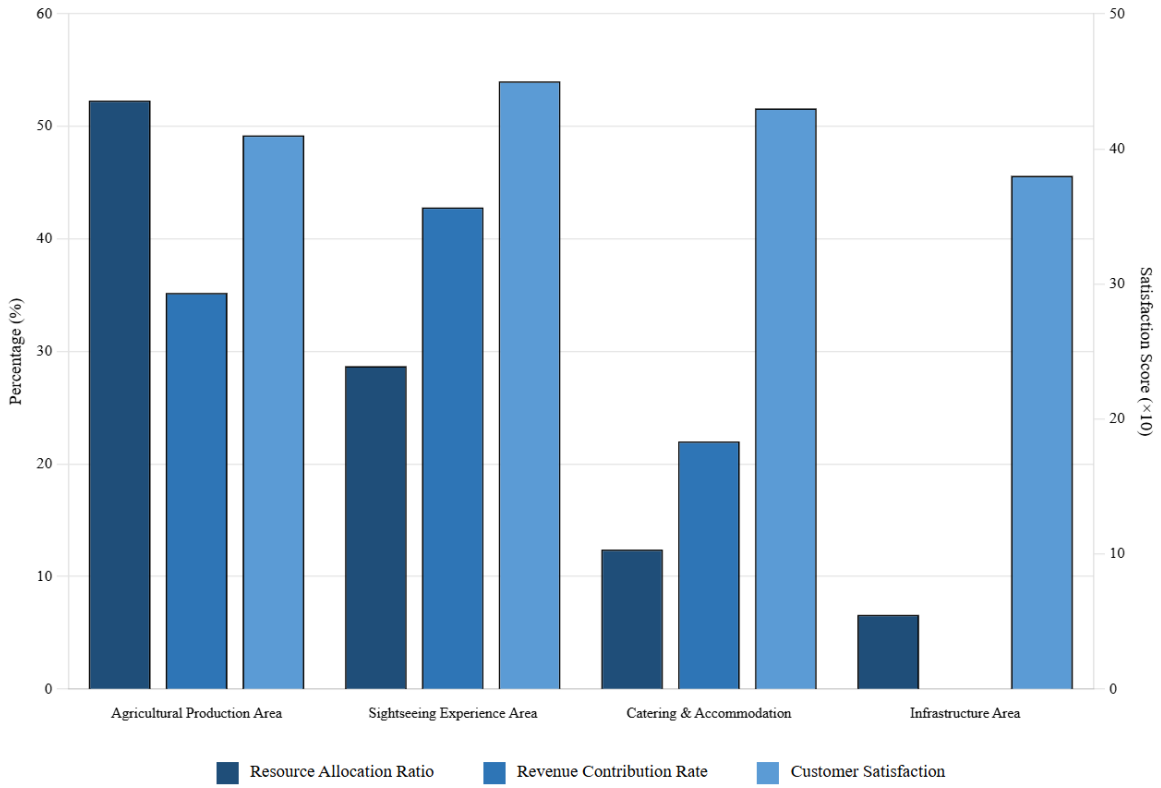

Figure 7. Resource Allocation and Performance in Agricultural Sightseeing Parks.

4.3.2. Service Innovation in Leisure Agricultural Enterprises

Through an in-depth investigation of service innovation practices in 11 leisure agricultural enterprises, this study found that these enterprises have formed service innovation models with agricultural characteristics based on learning from international hotel customer service concepts. Survey data show that the average annual visitor volume of sample enterprises is 64,000 person-times, with an average customer repeat consumption rate of 34.7%, customer recommendation rate of 67.3%, and overall service satisfaction of 4.4 points (on a 5-point scale), significantly higher than the 3.6 points of traditional agricultural tourism enterprises. From the perspective of service innovation investment, leisure agricultural enterprises have an average annual service innovation investment accounting for 12.8% of operating revenue, with employee service training investment accounting for 31.5%, service facility improvement investment accounting for 28.9%, service process optimization investment accounting for 23.7%, and customer relationship management system investment accounting for 15.9%, as shown in **Table 8**. In terms of agricultural experience product design, 90.9% of enterprises have developed interactive agricultural experience projects, including crop planting experiences, traditional agricultural tool usage, and agricultural product production, with an average of 7.2 experience projects per enterprise, of which seasonal specialty experience projects account for 58.3%[48]. In terms of service standardization construction, 72.7% of enterprises have established detailed service standard manuals, 63.6% of enterprises have implemented service quality monitoring systems, and 54.5% of enterprises have established customer complaint handling mechanisms. These standardized management measures directly draw from successful experiences in international hotel management.

From the analysis of specific service innovation

content, leisure agricultural enterprises have achieved breakthrough progress in multiple dimensions. In terms of optimizing the complete service chain from agricultural products to dining tables, 100% of enterprises have achieved complete experience chains of on-site picking, immediate processing, and instant tasting of agricultural products, with 81.8% of enterprises establishing on-site processing demonstration areas, 72.7% providing DIY production services, and 63.6% establishing agricultural product traceability systems. In terms of personalized service customization, 54.5% of enterprises have designed differentiated service packages for different customer groups (family tours, group tours, educational tours, etc.), and 36.4% of enterprises provide private customization services, including exclusive vegetable gardens, personalized picking, and customized catering. In terms of digital service innovation, 63.6% of enterprises have developed WeChat mini-programs or APPs, providing functions such as online reservations, tour guide services, and interactive games; 45.5% of enterprises have introduced VR/AR technology to provide immersive agricultural science education experiences for visitors; and 36.4% of enterprises have established intelligent tour guide systems, enhancing visitor experiences through QR code scanning and voice explanations [49]. In terms of employee service capability building, enterprises generally emphasize professional skill training for service personnel, with annual per capita training hours reaching 72 hours, of which agricultural knowledge training accounts for 35%, service skill training accounts for 45%, and communication skill training accounts for 20%.

Service innovation in leisure agricultural enterprises exhibits distinct systematic characteristics and continuous improvement trends. In terms of agricultural experience products, enterprises generally emphasize the combination of seasonality and interactivity, launching sowing experiences in spring, field management experiences in summer, harvest festival activities in autumn, and agricultural product processing experiences in winter, forming a service pattern of "activities in four seasons, themes every month." In terms of catering service innovation, 81.8% of enterprises have established complete "farm-to-table" service chains, transforming simple dining into comprehensive cultural experiences through displaying ingredient sources, live cooking demonstrations, and nutritional knowledge explanations. The revenue contribution rate of catering services reaches 31.8%, becoming the second largest revenue source after agricultural experiences. In terms of customer relationship management, advanced leisure agricultural enterprises actively learn customer service concepts from international hotel management, establishing comprehensive customer profile management systems that record customer preference information, consumption history, and special needs, laying the foundation for providing personalized services [50]. Particularly noteworthy is that although digital services have an implementation rate of 63.6%, their innovation maturity is relatively low at 3.5 points, indicating that leisure agricultural enterprises still have significant room for improvement in digital transformation, as shown in **Figure 8**. Successful service innovation practices demonstrate that through systematic service design, standardized service processes, personalized service content, and digital service tools, leisure agricultural enterprises can effectively improve customer experience quality, enhance customer loyalty, and achieve transformation and upgrading from traditional agriculture to modern service industries, providing important practical models and development pathways for rural industrial integration development.

Table 8. Statistics of Service Innovation in Leisure Agricultural Enterprises.

Service Innovation Category	Implementation Enterprise Ratio (%)	Annual Average Investment (10,000 yuan)	Customer Satisfaction Improvement (points)	Revenue Contribution Rate (%)	Innovation Maturity
Agricultural Experience Products	90.9	78.4	0.6	28.5	4.2
Catering Service Innovation	81.8	65.7	0.5	31.8	4.0
Digital Services	63.6	89.2	0.4	15.7	3.5
Personalized Customization	54.5	45.9	0.7	18.9	3.8
Educational Science Services	72.7	52.3	0.3	5.1	3.7
Average	72.7	66.3	0.5	20.0	3.8

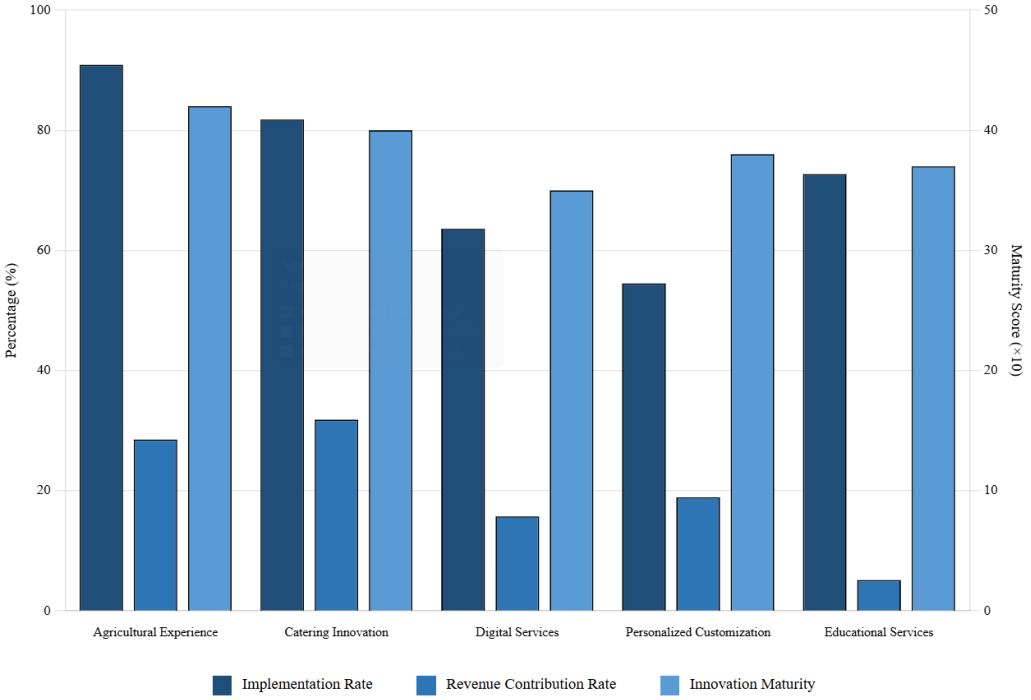

Figure 8. Service Innovation Implementation and Performance in Leisure Agriculture.

5. Discussion

5.1. Theoretical Mechanism Analysis of Agricultural Enterprise Resource Allocation Optimization

5.1.1. Theoretical Explanation Mechanism of Scale Effects

The scale differences in resource allocation efficiency among agricultural enterprises fundamentally reflect the heterogeneous distribution patterns of VRIN resources in the Resource-Based View. The superior performance of large agricultural enterprises in resource allocation efficiency stems from the scale threshold effects of their Valuable, Rare, Inimitable, and Non-substitutable resources. First, in the value dimension, large enterprises can undertake high-risk, high-return technological investments, transforming advanced precision agriculture technologies into substantial economic value, while small enterprises are constrained by capital limitations and cannot overcome the minimum economic scale for technology application. Second, in the rarity dimension, professional technical talents as scarce resources tend to choose large enterprises that can provide career development platforms and stable compensation, creating a Matthew effect of talent aggregation. Third, in the inimitability dimension, the management systems, brand reputation, and supply chain networks formed by large enterprises through long-term investment exhibit path-dependent characteristics that small enterprises cannot replicate in the short term. Finally, in the non-substitutability dimension, the scaled production capacity and market bargaining power of large enterprises constitute unique competitive advantages that cannot be replaced through simple technology purchasing or management imitation.

Institutional theory provides an important perspective for understanding the impact of the external environment on enterprise resource allocation. Formal institutions (such as land property rights policies and agricultural financial support policies) significantly influence the resource acquisition capabilities of enterprises of different scales by reducing transaction costs and providing incentive structures. Large enterprises more easily meet the risk control requirements of financial institutions and obtain low-cost funding support, while small enterprises often face financing constraints due to information asymmetry and insufficient collateral. Informal institutions (such as social networks, trust

relationships, and business practices) also play important roles, as large enterprises establish extensive institutional connections through participation in industry associations and government consultations, enabling them to better adapt to and influence changes in the institutional environment through their role as "institutional entrepreneurs."

5.1.2. Theoretical Foundation of Technology-Organization Co-Evolution

The successful practices of technology-driven organizational innovation in modern agricultural enterprises embody the systematic enhancement of the "sensing-seizing-reconfiguring" triple capabilities in dynamic capabilities theory. Dynamic capabilities, as the enterprise's ability to integrate, build, and reconfigure internal and external resources in dynamic environments, essentially address environmental uncertainty through organizational learning and knowledge creation. In terms of sensing capabilities, digital technologies, particularly big data analytics and Internet of Things technologies, significantly enhance agricultural enterprises' sensitivity and accuracy in perceiving market signals, climate changes, pest and disease information, enabling enterprises to identify opportunities and threats in advance. Regarding seizing capabilities, intelligent decision-making systems and precision agriculture technologies enable enterprises to rapidly respond to market changes, optimize production plans and resource allocation, and transform perceived opportunities into concrete operational actions. In terms of reconfiguring capabilities, flattened organizational structures and cross-functional team mechanisms enable enterprises to flexibly adjust business processes and resource allocation, continuously adapting to environmental changes. The co-evolution of technology and organization follows a spiral upward logic of "technology push-organizational adaptation-capability enhancement-performance improvement," where technological innovation not only changes production methods but more importantly reconstructs information flow patterns and decision-making mechanisms, driving organizational transformation from mechanistic to organic forms, manifested in three levels: cognitive level where data-driven decision-making replaces experience-dominated traditional models, structural level where flattened network organizations replace hierarchical bureaucratic organizations, and cultural level where open innovation learning cultures replace closed conservative traditional cultures.

5.1.3. Value Creation Mechanisms of Industry Integration

The successful practices of agri-tourism integration enterprises reveal multiple value creation mechanisms, including scope economy effects that achieve cost savings and efficiency improvements through shared resources and capabilities, network effects that create synergistic value beyond single industries through inter-industry complementarity, and learning effects that enhance organizational capabilities through cross-boundary knowledge transfer. The deep mechanism of industry integration lies in redefining the boundaries and logic of value chains, transforming from product-centered traditional agricultural value chains pursuing cost minimization and output maximization to experience-centered integrated value chains pursuing value maximization and differentiation, requiring enterprises to shift from product thinking to service thinking, from standardized production to personalized customization, and from single functions to multiple functions, with the successful transplantation of international hotel management experience proving the cross-boundary applicability of management practices in creating value within the agricultural sector.

5.2. Operational Pathways and Mechanism Elucidation of Organizational Innovation

5.2.1. Organizational Mechanisms of Resource Reallocation

Organizational innovation achieves resource allocation efficiency improvement through three key mechanisms: structural restructuring, process optimization, and capability building mechanisms, where structural restructuring realizes decision-making decentralization and response speed enhancement by changing organizational architecture and authority relationships, process optimization eliminates redundant links and waiting

time through standardization and digitalization, and capability building enhances professional skills and collaborative abilities through talent development and knowledge management.

5.2.2. Pathway Mechanisms of Dynamic Capability Construction

Organizational innovation's construction of dynamic capabilities follows the spiral evolutionary logic of "exploration-exploitation-reconfiguration," where enterprises identify new resource allocation possibilities through establishing open innovation networks and implementing pilot projects in the exploration stage, institutionalize successful resource allocation patterns into organizational routines in the exploitation stage, and continuously optimize resource allocation systems through reflective learning and capability updates in the reconfiguration stage, with construction mechanisms manifested at individual cognitive upgrading, team collaboration optimization, and organizational institutional improvement levels.

5.2.3. Diffusion Mechanisms of Institutional Innovation

The successful practices of cooperative enterprise management demonstrate institutional innovation diffusion mechanisms following the "pioneer demonstration-imitative learning-institutionalized promotion" pathway, where advanced cooperatives create observable and replicable success models through introducing modern enterprise systems, with diffusion mechanisms promoting experience transmission through formal channels like policy support and informal channels like peer exchange, ultimately addressing collective action dilemmas and incentive compatibility problems through equity-based property arrangements, specialized management systems, and market-oriented incentive mechanisms.

5.2.4. Knowledge Transfer Mechanisms of Cross-Boundary Learning

Agricultural enterprises' successful practices in borrowing international hotel management experience reveal cross-boundary learning knowledge transfer mechanisms dependent on knowledge characteristics, organizational capabilities, and transfer mechanisms, where the success stems from the codifiability of explicit knowledge like service concepts and standardized processes, organizational learning willingness and absorptive capacity, and both formal channels like personnel exchange and informal channels like peer communication, with the deep mechanism involving a "deconstruction-reconstruction-innovation" knowledge integration process that transforms external knowledge into enterprise-specific organizational capabilities and competitive advantages through creative learning and adaptation rather than simple replication.

6. Conclusion and Outlook

6.1. Main Research Conclusions

Through systematic empirical analysis, this study draws the following five main research conclusions.

(1) Agricultural enterprises exhibit significant scale differences and structural problems in resource allocation efficiency, with large enterprises demonstrating clear advantages in land, human resources, and capital resource allocation. The research found that the average land resource allocation efficiency of traditional agricultural enterprises is 0.672, with large enterprises achieving an efficiency value of 0.782, while small enterprises only reach 0.536. This gap mainly stems from differences in economies of scale, technological investment levels, and management capabilities. In terms of human resource allocation, the low proportion of technical personnel (averaging 18.3%) and prominent aging issues in human resources constrain enterprises' innovation and development capabilities. Capital resource allocation exhibits characteristics of emphasizing hardware over software, with equipment investment accounting for as high as 45.2%, while technology R&D investment only accounts for 8.3%, with singular financing structures and relatively high costs.

(2) Technology-driven organizational innovation is the core pathway for modern agricultural enterprises to improve resource allocation efficiency.

The investigation found that modern agricultural enterprises have an average annual investment in digital technology accounting for 4.7% of operating revenue, with smart agriculture technology application rates reaching 78.3%. Through introducing modern tools such as precision agriculture technology and intelligent decision systems, they have achieved a transformation from traditional experience-dominated approaches to data-driven approaches. Technological innovation has driven flattened organizational structure reconstruction, with average management levels reducing from 4.2 to 3.1 layers and decision-making efficiency improving by 35%, providing organizational foundations for rapid resource reallocation and optimization adjustment.

(3) Industrial integration has opened new development spaces and implementation pathways for agricultural enterprise resource optimization allocation. The integrated business revenue of agri-tourism integrated enterprises accounts for an average of 42.6% of total revenue. Through deep integration of primary, secondary, and tertiary industries, they have achieved multifunctional utilization and value enhancement of land resources. Agricultural sightseeing parks, through reasonable functional area division, achieve revenue contribution rates of 42.8% in sightseeing experience areas despite occupying only 28.7% of the land area, reflecting the significant enhancement effect of industrial integration on resource allocation efficiency.

(4) International hotel management experience holds significant value and applicability for agricultural enterprises, particularly in the agri-tourism integration field. The research found that 70% of agri-tourism integrated enterprises have introduced standardized service processes. Agricultural enterprises that learn from hotel management experience perform prominently in customer satisfaction, service quality, and seasonal resource allocation, achieving customer satisfaction ratings above 4.3 points, significantly higher than traditional agricultural enterprises. Agricultural theme hotels achieve perfect integration of traditional agricultural culture and modern hotel management through the "international standards + local characteristics" service model.

(5) Enterprise-oriented operations of cooperatives represent an important direction for agricultural organizational innovation, providing effective organizational carriers for small farmers to participate in modern agricultural development. Shareholding cooperatives perform optimally in professional management personnel ratios (89.2%), brand management rates (100%), and member satisfaction (4.7 points). Through establishing modern enterprise systems and introducing market-oriented operational mechanisms, they effectively improve collective resource allocation efficiency and operational benefits, exploring important organizational models for the advancement of agricultural modernization.

6.2. Future Outlook

Based on the findings of this study and current agricultural development trends, future research should further deepen and expand in the following five directions.

(1) Digitalization and intelligence will become the main driving forces for agricultural enterprise resource allocation optimization. With the rapid development and cost reduction of emerging technologies such as 5G, Internet of Things, artificial intelligence, and blockchain, future agricultural enterprises will more deeply integrate digital technologies to construct smart agriculture ecosystems. It is expected that by 2030, precision agriculture technology application rates will exceed 95%, and agricultural enterprises will achieve full-chain digital management from production, processing, and sales to services, optimizing resource allocation decisions through big data analysis and artificial intelligence algorithms, significantly improving resource utilization efficiency and operational benefits. Meanwhile, digital transformation will drive agri-

cultural enterprise organizational structures to evolve toward networking and platformization, forming more flexible and efficient resource allocation mechanisms.

(2) Carbon neutrality goals will reshape agricultural enterprises' resource allocation strategies and development models. Under the constraints of the carbon peak and carbon neutrality, agricultural enterprises must accelerate transformation toward green and low-carbon development approaches, which will bring profound changes to resource allocation concepts and practices. Future agricultural enterprises will pay more attention to the protection and sustainable utilization of ecological resources, substantially increasing investment proportions in clean energy, ecological restoration, and carbon sink development, and constructing resource allocation optimization systems based on carbon footprint management. The improvement of green financial instruments and carbon trading mechanisms will provide new financing channels and incentive mechanisms for agricultural enterprises' green transformation, promoting the formation of new resource allocation patterns that emphasize both economic and ecological benefits.

(3) Deep integration of agriculture and tourism will generate more innovative organizational forms and business models. With the in-depth implementation of rural revitalization strategies and the continued development of consumption upgrade trends, the integration of agriculture with tourism, culture, education, health, and wellness industries will become closer, spawning more diversified new business formats and models. The future will see the emergence of more specialized agri-tourism integration operating institutions, establishing standardized industrial integration service systems, and forming internationally competitive agri-tourism integration brands. The application of international hotel management experience in the agricultural field will become deeper and more extensive, driving the agricultural service industry toward high-end and quality development.

(4) International development will provide broader space and more diverse choices for agricultural enterprise resource allocation. Against the background of global agricultural value chain restructuring, Chinese agricultural enterprises will more actively participate in international cooperation and competition, allocating global resources through foreign investment, technology cooperation, and brand export. Future agricultural enterprises will establish more open resource allocation systems, coordinating the use of both domestic and international markets and resources, optimizing the allocation of talent, technology, capital, and other factors within a larger scope, enhancing global operational capabilities and international competitiveness.

(5) Policy innovation and institutional improvement will provide better environments and conditions for agricultural enterprise resource optimization allocation. Future governments will further deepen rural reforms, improve rural land systems, financial service systems, and technological innovation mechanisms, creating more fair and efficient market environments for agricultural enterprise resource allocation. Meanwhile, more comprehensive agricultural enterprise classification guidance and precision support policy systems will be established, providing differentiated policy support for agricultural enterprises of different scales and types, promoting agricultural enterprises to achieve high-quality and sustainable development.

Author Contributions

Conceptualization, S.Z. and D.A.V.C.; methodology, S.Z.; software, S.Z.; validation, S.Z. and D.A.V.C.; formal analysis, S.Z.; investigation, S.Z.; resources, S.Z.; data curation, S.Z.; writing—original draft preparation, S.Z.; writing—review and editing, S.Z.; visualization, S.Z.; supervision, S.Z.; project administration, S.Z.; funding acquisition, D.A.V.C. All authors have read and agreed to the published version of the manuscript.

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Conflicts of Interest

The authors declare no conflict of interest.

References

[1] Chen, X., 2025. Key Issues and Countermeasures in Cost Management of Agricultural Enterprises. China Collective Economy. (3), 89–92.

[2] Jiang, N., 2024. Analysis of the Impact of Internationalization of Chinese Agricultural Product Standards on Export Market Diversification of Agricultural Enterprises. Taiwan Agricultural Research. (3), 8–17. (in Chinese)

[3] Zunzunegui, I., García, M.J., Santamaría, Ó., et al., 2025. Insect Frass as an Agricultural Resource Against Abiotic and Biotic Crop Stresses: Mechanisms of Action and Possible Negative Effects. Applied Sciences. 15(7), 3606.

[4] Li, M., Zhang, P., Yang, A., et al., 2025. Achieving Sustainable Goals in Agroecosystems through the Optimization of Agricultural Resources Integrating the Water-Nitrogen-Carbon Nexus. iScience. 28(3), 112101.

[5] Tang, W., Huang, X., 2023. Research on Total Factor Productivity of Large Agricultural Enterprises from the Perspective of Capital Market Opening: Based on the Mediating Effects of Financing Constraints and Agency Costs. Contemporary Economics. 40(12), 84–96.

[6] Chen, C., Wang, J., Jiang, W., et al., 2025. Can the Integration of Agriculture and Tourism Foster Agricultural Green Development? An Empirical Analysis Based on Panel Data from 30 Provinces in China. Frontiers in Sustainable Food Systems. 9, 1570767.

[7] Liu, X., 2023. Research on the Current Development Status and Innovation Paths of Agricultural Enterprise Marketing in China. Marketing World. (5), 38–40.

[8] Han, J., 2023. Innovation Research on Financial Management of Agricultural Enterprises under Market Economy Conditions. Agricultural Technology and Economy. (1), 145.

[9] He, X., Yang, Z., Tian, S., 2025. The Impact of Digital Inclusive Finance on the Allocation of Agricultural Resources: Micro Evidence from Rural China. Finance Research Letters. 82, 107613. DOI: https://doi.org/10.1016/j.frl.2025.107613

[10] Wu, X., Liu, Q., Li, X., 2022. Research on the Transformation Mechanism of Agricultural Carbon Finance Market from Enterprise Behavior Perspective. Shanxi Agricultural Economics. (16), 179–181.

[11] Qi, P., Li, B., Zhang, D., et al., 2025. Supply and Demand of Agricultural Water Resources under Future Saline-Alkali Land Improvement. Agricultural Water Management. 314, 109503.

[12] Yu, J., 2022. Exploration of Agricultural Enterprise Management and Marketing Innovation in the New Era. Journal of Nuclear Agricultural Sciences. 36(8), 1718–1719.

[13] Zhang, X., 2021. Analysis of Innovation Strategies for Agricultural Enterprise Management under New Circumstances. New Agriculture. (15), 89.

[14] Li, L., 2021. Research on Cost Management of Agricultural Enterprises. China Market. (21), 47–48.

[15] Su, G., Zhang, G., 2021. Research on Innovation of E-commerce Development Models for Agricultural Enterprises from Value Chain Perspective. Journal of Shanxi Datong University (Social Science Edition). 35(1), 121–124.

[16] Zhang, J., 2020. Research on Operational Management of Agricultural Enterprises under "Internet+" Background. National Circulation Economy. (15), 124–126.

[17] Zhang, Y., 2020. Analysis of Agricultural Enterprise Marketing Strategies under New Economy Background. Farmers' Consultant. (21), 13+51.

[18] Hao, R., 2021. Analysis of Risks and Countermeasures of Futures Market Hedging for Agricultural Enterprises. Shanxi Agricultural Economics. (7), 191–192.

[19] Li, Y., 2019. Research on Risks and Countermea-

sures of Futures Market Hedging for Agricultural Enterprises. National Circulation Economy. (28), 150–151.

[20] Jiang, T., 2019. Research on Problems and Countermeasures of Chinese Agricultural Enterprises Developing International Markets. Guangxi Quality Supervision Herald. (11), 25–26.

[21] Jiang, Y., 2020. Research on Agricultural Market Expansion Paths under the Background of Domestic Circulation Economic Strategy. Market Modernization. (24), 125–127.

[22] Georgeou, N., Hawksley, C., Monks, J., et al., 2019. Food Security and Asset Creation in Solomon Islands: Gender and the Political Economy of Agricultural Production for Honiara Central Market. Portal: Journal of Multidisciplinary International Studies. 16(1/2), 101–118.

[23] Chandra, J.A., Diehl, A.J., 2019. Urban Agriculture, Food Security, and Development Policies in Jakarta: A Case Study of Farming Communities at Kalideres – Cengkareng District, West Jakarta. Land Use Policy. 89(C), 104211.

[24] Yan, D., Lei, M., Shi, Y., 2025. A Hybrid Approach to Advanced NER Techniques for AI-driven Water and Agricultural Resource Management. Frontiers in Environmental Science. 13, 1558317.

[25] Dixit, J., Ahmad, T., Kanga, S., et al., 2025. Integrating UAVs and Geospatial Technologies for Assessing Jhum Cultivation and Soil Dynamics in Mizoram: A Framework for Sustainable Agricultural Resource Management. Remote Sensing in Earth Systems Sciences. 1–23. DOI: https://doi.org/10.1007/s41976-025-00238-z

[26] Mu, Y., Boussemart, P.J., Shen, Z., et al., 2025. Sustainable Supply Chains with Socially Undesirable and Intermediate Outputs: Evidence from Chinese Agricultural Cities. Annals of Operations Research. 1–25. DOI: https://doi.org/10.1007/s10479-025-06658-w

[27] Sun, X., 2025. Analysis of the Impact of Rural Land Transfer Market Development on Land Resource Management. Land Today. (5), 35–37.

[28] Zhao, M., 2023. Strengthening Agricultural Machinery Management to Promote Healthy Development of Agricultural Mechanization. Hebei Agricultural Machinery. (16), 48–50.

[29] Cui, F., 2025. Strengthening Market Agricultural Economic Construction to Achieve New Breakthroughs in Rural Economic Development. Market Outlook. (11), 7–9.

[30] Li, Z., Zhang, J., Lai, X., et al., 2024. Research on the Impact Effect and Mechanism of Technology Market Scale on Agricultural Science and Technology Innovation Quality. R&D Management. 36(4), 62–74.

[31] Liu, J., 2023. Discussion on Marketing Innovation of Characteristic Agricultural Industries Based on "Internet+". Shanghai Business. (12), 48–50.

[32] Trusova, V.N., Tanklevska, S.N., Synchak, P.V., et al., 2020. State Support of Agro-Insurance of Agricultural Risks in the Market of Goods Derivatives of Ukraine. Industrial Engineering & Management Systems. 19(1), 93–102.

[33] Liu, D., 2017. Analysis of Marketing Risks in Technological Innovation of Agricultural Enterprises. Agriculture and Technology. 37(5), 160–161.

[34] Zhang, X., 2017. Research on Marketing Innovation Models of Characteristic Agricultural Industries Based on "Internet+". China Market. (10), 107–108.

[35] Onyiriuba, L., Okoro, O.E., Ibe, I.G., 2020. Strategic Government Policies on Agricultural Financing in African Emerging Markets. Agricultural Finance Review. 80(4), 563–588.

[36] Bi, Y., 2022. Analysis of Marketing Innovation Models for Characteristic Agriculture under "Internet+" Background. South China Agriculture. 16(12), 104–106.

[37] Wang, X., 2021. Discussion on Market Agricultural Economy for Innovative Rural Economic Development Ideas. National Circulation Economy. (32), 157–159.

[38] Li, Y., 2019. Risks and Regulation of Agricultural Insurance Innovation under Government Support. South China Finance. (9), 86–91.

[39] Bocher, T., Okello, J.J., Sindi, K., et al., 2020. Do Market-oriented Engendered Agriculture-health Interventions Affect Household Nutrition Outcomes: Evidence from an Orange-fleshed Sweetpotato Project in Rwanda. Ecology of Food and Nutrition. 60(3), 21–20.

[40] Gondwe, G., Mbonigaba, J., 2020. The Role of Development Aid in Agriculture in the Common Market for Eastern and Southern Africa: A Panel Vector Autoregression Analysis. Journal of Agricultural Science. 12(10), 28.

[41] Wu, J., 2021. Research on Marketing Innovation Models of Characteristic Agriculture under "Internet+" Background. Heilongjiang Grain. (5), 79–80.

[42] Zhang, Y., 2021. Discussion on Reform and Innovation of Agricultural and Rural Economic Development Models. Smart Agriculture Guide. 1(7), 84–86.

[43] Mishra, A., Ketelaar, J.W., Uphoff, N., et al., 2021. Food Security and Climate-smart Agriculture in the Lower Mekong Basin of Southeast Asia: Evaluating Impacts of System of Rice Intensification with Special Reference to Rainfed Agriculture. International Journal of Agricultural Sustainability. 19(2), 152–

174.
[44] Feng, H., Wang, J., 2021. Evolution Trends and Reform Innovation of Agricultural Industrial Chain Organization Development. Reform of Economic System. (2), 74–80.
[45] Li, Y., 2016. Agricultural Business Model Innovation under "Internet+" Background: From the Perspective of Agricultural Whole Industry Chain Closed Platform. Study & Exploration. (09), 101–106.
[46] Su, D., 2021. Research on Agricultural Legal Protection from the Perspective of Agricultural Internet Innovation. Journal of Nuclear Agricultural Sciences. 35(1), 261–262.
[47] Zheng, S., 2020. Research on Marketing Innovation Models of Characteristic Agriculture under "Internet+" Background. Modern Marketing (Late Edition). (15), 80–81.
[48] Zheng, J., Yang, Y., 2019. Innovation on Agricultural Insurance Market and Farmers' Income Protection. Journal of South China Agricultural University (Social Science Edition). 18(6), 45–54. (in Chinese)
[49] Bu, Z., Bai, Y., 2019. Analysis of Financing Difficulties of Agricultural Business Entities and Financial Innovation Solutions. Southwest Finance. (9), 56–62.
[50] Rajkhowa, P., 2024. From Subsistence to Market-oriented Farming: The Role of Groundwater Irrigation in Smallholder Agriculture in Eastern India. Food Security. 16(2), 353–369.