ISSN 3006-4007 (Print)
ISSN 3006-4015 (Online)

JAARS

Journal of Advanced Academic Research and Studies

Vol. 2, No.6, 2025

Published by

NLBA Eurasian Institute

Supported by

Journal of Advanced Academic Research and Studies (JAARS)

ISSN 3006-4007 (Print)
ISSN 3006-4015 (Online)

Aims
The Journal of Advanced Academic Research and Studies aims to Continuously promote meaningful and valuable outstanding academic achievements to serve the society, increase advanced academic knowledge for the world civilisation, and serve the progress of science and technology combined with human society.

Journal Title
The official title of the journal is "Journal of Advanced Academic Research and Studies (JAARS)" and the abbreviated title is "J. adv. acad. res. stud."

Year of Launching
Journal of Advanced Academic Research and Studies was launched in 2023.

Availability of the Full-Text in the Web
Full text is freely available from: www.nlbaeai.org

Fund Support
This journal was supported by the NLBA Eurasian Institute Limited.

Index in Database
The articles published in this journal are may index and/or abstracted in EBSCO.
ProQuest, Ex Libris, and Google Scholar.

Subscription Information
All correspondences regarding membership, subscriptions and changes of address should be sent to the society addressed as below: NLBA Eurasian Institute Limited (E-Mail: edubscon@outlook.com , Homepage: www.nlbaeai.org). The annual subscription fees are free of charge.

Submission
The NLBA Eurasian Institute Limited operates an on-line submission system. Details of how to submit online and full author instructions can be found at:www.nlbaeai.org. Manuscripts should be submitted to the on-line submission system at:www.nlbaeai.org following all prompts on the screen. Other correspondences can be sent by e-mail to the editor at edubscon@outlook.com Peer review under responsibility of the NLBA Eurasian Institute Limited.

Journal of Advanced Academic Research and Studies Volume 2, Number 6
Published 2025

Publisher (Editorial Office)
E-Mail: edubscon@outlook.com, Homepage: www.nlbaeai.org
Hooijdonkseweg 3, 4823 ZD Breda, Nederland

Journal of Advanced Academic Research and Studies

Vol.2, No.6, 2025

1 Development Pathways of the National Agricultural Cooperative Federation in Korea: Institutional Innovation and Policy Implications — Based on the SWOT–AHP Analytical Framework

Lin Lv, Leying Zhao and Jianna Wang

17 The Integration of "Three Modernizations" under the Dual Carbon Goal: A Study on the Green Transformation Path of the Modern Industrial System to Consolidate the Foundation of the Real Economy

Jiayue Sun and Dongyan Ma

30 Research on the Teaching Mode of Senior Three Physics Review Classes via Micro-Courses

Han Zang and Shuping Bai

Published by

NLBA Eurasian Institute

Journal of Advanced Academic Research and Studies 高等学术研究期刊
Vol. 2, No.6, 2025 (pp. 1-16)
http://www.nlbaeai.org/

ISSN 3006-4007 (Print)
ISSN 3006-4015 (Online)

Development Pathways of the National Agricultural Cooperative Federation in Korea: Institutional Innovation and Policy Implications — Based on the SWOT–AHP Analytical Framework

Lin Lv[a] Leying Zhao[b] and Jianna Wang[c]

[a] School of Marxism, Zhengzhou Technology and Business University, China

[b] School of Journalism, Henan University, China

[c] School of Economics and Management , Huanghuai University, China

Received 24 October 2025, Revised 18 November 2025, Accepted 22 December 2025

Abstract

Purpose – The purpose of this paper is to explore the central role of the National Agricultural Cooperative Federation (NACF) in Korea's agricultural modernization through its "integrated cooperative" model, as well as the persistent challenges it faces, including organizational expansion, administrative inertia, and a rapidly changing external environment.

Design/Methodology/Approach – Based on a combined SWOT–AHP framework, the study applies the framework to quantify the relative importance of key drivers.

Findings – The results show that NACF's comprehensive functional system (bringing together financial services, input supply, marketing, and extension functions) and its tiered organizational structure constitute its major strengths. Independent economic operations and improved mechanisms for state–society communication emerge as important opportunities and sustainability variables.

Research Implications – Building on these findings, the study offers four policy insights: streamlining organizational structures by advancing modularized business units and strengthening grassroots autonomy; integrating elements of corporate governance with cooperative principles to enhance the professionalism of decision-making; upgrading the value chain of member-oriented services with a shift toward higher value-added activities; and establishing a healthier state–cooperative interaction mechanism to reduce dependency and reinforce endogenous development incentives.

Keywords: National Agricultural Cooperative Federation (Korea); SWOT; AHP; Policy implications
CLC Number: F331 Document Code: A

[a] First Author & Corresponding Author, E-mail: lvlin78@163.com
[b] Co-Author, E-mail: zhao0219_2024@qq.com
[c] Co-Author, E-mail: wang2267049057@qq.com

I. Introduction

Agricultural cooperatives are a critical institutional vehicle for advancing agricultural modernization, increasing farm incomes, and mitigating market risks. This is especially true in countries and regions where smallholder farming remains predominant. Korea's economic transformation in the latter half of the twentieth century—from an agrarian economy to a modern industrial nation—is a well-known success story. Throughout this process, the National Agricultural Cooperative Federation (NACF) played an indispensable role. It not only served as a key implementing body for government agricultural policies, but also acted as a comprehensive platform linking small farmers to larger markets, integrating agri-food value chains, and delivering a full spectrum of financial and marketing services.

NACF's distinctive "integrated cooperative" model combines financial, insurance, marketing, procurement, and extension functions within a single organizational framework. This model has generated strong institutional synergy and offers a valuable reference for countries that share a smallholder-based agricultural structure, particularly in East Asia, including China.

However, the development of NACF has not been without setbacks. Globalization, market liberalization, demographic ageing, and ongoing adjustments in domestic agricultural policy have all posed new pressures. The organization now faces challenges related to internal governance, operational efficiency, and generational continuity. A systematic and scientific assessment of NACF's development path—one that distinguishes its successful practices from its institutional constraints—is therefore of considerable academic relevance. It also holds immediate practical value for China, where farmers' cooperatives and rural cooperative finance are undergoing deep structural reforms.

Existing research on NACF tends to focus on historical narratives, institutional descriptions, or case studies of specific functions. What is largely missing is an integrated analytical framework that captures both internal and external factors and assigns relative weights to them. To address this gap, this study applies a SWOT–AHP approach. The method combines qualitative identification with quantitative assessment. We first draw on relevant literature and case evidence to identify NACF's strengths, weaknesses, opportunities, and threats. We then employ the Analytic Hierarchy Process, inviting experts in the field to conduct pairwise comparisons of these factors in order to derive their relative weights. This enables us to pinpoint the key drivers and binding constraints in NACF's evolution. Based on the results, the study distills NACF's developmental pattern, highlights its innovative practices, and proposes operational policy implications for strengthening the high-quality development of China's farmer cooperatives.

II. Literature Review

1.Studies on the Development Pathways of Agricultural Cooperatives

Agricultural cooperatives serve as a central organizational vehicle for promoting agricultural modernization and strengthening farmers' bargaining power and risk-management capacity. This role is particularly evident in regions where smallholder agriculture dominates. According to the International Co-operative Alliance, a cooperative is an autonomous enterprise formed by individuals who voluntarily join together and operate through joint ownership and democratic governance in order to meet shared economic, social, and cultural needs.The development trajectory of cooperatives is shaped by a combination of internal and external factors. Internal factors include member heterogeneity, social capital, governance arrangements, and the cooperative's resource base. External factors relate to the institutional environment, market structure, stage of economic development, and technological change. These elements interact in complex ways and give rise to diverse cooperative models around the world.International practice has therefore evolved into several representative patterns. The United States, the Netherlands, and Denmark exemplify a model characterized by strong vertical coordination and value-chain leadership. Japan and Korea follow an integrated cooperative model that is closely embedded in local communities. India, Brazil, and many African countries tend to develop project-based models supported by external agencies. China has formed a distinct pathway that combines government guidance with a variety of locally driven organizational forms.

2.Studies on the Development of the National Agricultural Cooperative Federation in Korea

The development of the National Agricultural Cooperative Federation in Korea is regarded as a distinctive model that was initially state-led and has gradually evolved over time. Han (2008) observed that in its early stage, NACF functioned primarily as a policy instrument to achieve national food self-sufficiency and promote rural modernization, taking responsibility for the allocation of agricultural inputs and grain procurement. With the rapid take-off of the Korean economy, NACF's operations diversified extensively. Park (2015) highlighted that the cooperative extended its involvement along the value chain by establishing its own brands and retail networks. The integrated model that combines financial and economic services emerged as a core strength of the organization.As a comprehensive cooperative established under government guidance, NACF has developed a distinctive institutional system over nearly six decades. At the same time, it faces new development challenges. Existing studies, including Kim and Moon (2017) and Lee and Park (2020) , indicate that the evolution of NACF can be understood through three main dimensions. First, it operates under a dual framework that integrates policy implementation with market-oriented mechanisms. Choi (2019) emphasized that this arrangement enables NACF to execute government agricultural policies efficiently while sustaining organizational vitality through market-based operations. Second, NACF has established a vertically integrated

service system covering the entire agricultural value chain, including input supply, product processing, retail marketing, and financial and insurance services. Third, a multi-tiered governance structure has been formed, ensuring central-level coordination capacity while gradually enhancing the operational autonomy of local cooperatives (Ryu & Jang, 2018) .

At the same time, the development of NACF faces a range of practical challenges. Studies by Kim et al. (2021) and Lim (2022) identify several key issues. First, in the context of globalization, increasing market liberalization has put pressure on traditional protective mechanisms, undermining their effectiveness. Second, rural population aging and the shortage of agricultural successors are becoming more pronounced, directly affecting the membership base and long-term sustainability of the cooperative. Third, rapid advances in digital technology create urgent demands for digital transformation, while the cooperative's path-dependent organizational structure acts as a significant constraint(Qian Liu, Yuanji Zhang, Xiaoqing Sun,2025). Fourth, balancing organizational growth with the preservation of cooperative democratic principles has emerged as a central governance challenge.

Scholars generally argue that the future development of NACF requires progress in several directions. Yang and Kim (2019) suggest deepening governance reforms to improve operational efficiency, accelerating the construction of digital service platforms to enhance the precision and effectiveness of member services, innovating policies to support young farmers to alleviate pressures from rural aging, and exploring new international cooperation models to strengthen competitiveness in global markets. These experiences and reform directions provide important reference points for the modernization of agricultural cooperatives in countries with similar developmental contexts.

III. Construction of Indicator Judgment Matrices and Weight Allocation Based on the SWOT–AHP Method

(A) Construction of Judgment Matrices Based on SWOT Analysis

Traditional SWOT qualitative analysis is widely applied in organizational strategic planning, allowing decision-makers to compare strengths, weaknesses, opportunities, and threats in order to formulate development strategies. Although many scholars have applied the SWOT model to conduct qualitative studies on organizational development (M. S. Hossain, M. A. Hossain, et al., 2017; A. C. T. de Sousa, F. G. C. de Almeida, et al., 2020; N. A. Valdez, G. M. N. D. Garcia, et al., 2021) and have drawn important conclusions, the method still exhibits several limitations in practical applications. These include a high degree of subjectivity and weak consideration of interrelationships among factors.

To address these limitations, this study integrates the Analytic Hierarchy Process (AHP) with the traditional qualitative SWOT framework. By combining objective realities with expert judgment and assigning hierarchical weights to factors, the approach rearranges internal factors according to their relative importance. This allows qualitative issues to be quantified, reduces subjectivity and arbitrariness in analysis, enhances the scientific rigor of conclusions, and provides a more rational basis for decision-making and selection of development pathways.

The Analytic Hierarchy Process was proposed by T. L. Saaty, a professor at the University of Pittsburgh, in the mid-1970s. Its core idea is to decompose a complex problem into constituent elements, group the elements according to dominance relationships, and determine the relative importance of factors through pairwise comparisons. This results in a structured hierarchy of factors. The principal advantage of AHP lies in its ability to structure and quantify subjective judgments, transforming complex multi-criteria decision problems into a simple hierarchical weighting system. The method effectively integrates qualitative and quantitative factors and employs consistency checks to ensure logical reliability, thereby making the decision-making process more scientific and transparent.

1. SWOT Qualitative Analysis of the National Agricultural Cooperative Federation in Korea

1.1 Strengths

1.1.1 Tiered Organizational Structure (S1)

As an integrated cooperative organization spanning the entire agricultural value chain, NACF adopts a two-tiered organizational system suited to national conditions. The upper tier consists of the National Central Association, while the lower tier comprises local cooperatives at the municipal, county, township, and village levels. The National Central Association is primarily composed of banking, administrative, and marketing departments, which provide direct guidance and support to the corresponding departments of local cooperatives. Local cooperatives generally consist of willing residents from villages within their jurisdiction. Membership in a local cooperative automatically grants membership in the national federation. This “central association plus local cooperative” two-tier structure enables NACF to operate efficiently and effectively, minimizing management layers and administrative costs.

1.1.2 Comprehensive Functional System (S2)

NACF functions as a comprehensive agricultural cooperative that integrates research, credit, input supply, processing, training, and education. Its services extend across multiple dimensions of Korea’s economic development, demonstrating both diversity and depth. In agricultural logistics, NACF covers storage, packaging, processing, distribution, and retail. In addition, it provides educational support through institutions such as cooperative universities and professional training programs. The federation also represents farmers in negotiations with the government to advocate for favorable agricultural policies. Today, NACF has evolved far beyond a conventional cooperative. Leveraging its financial capital, distribution networks, and research capabilities, it has established a complete industry system from farm to urban consumer, emerging as a key economic actor that ensures food security, balances urban-rural development, and significantly influences

domestic markets.

1.1.3 Systematized Financial Operations (S3)

To increase farmers' income and strengthen the distribution function within the agricultural system, the National Agricultural Cooperative Federation decided in 1956 to incorporate financial and credit services into its operations, thereby establishing a "central–local" financial service framework. The primary function of this banking system is to provide comprehensive credit support for the working capital required in agricultural production, addressing funding gaps in the production process. NACF differs fundamentally from ordinary commercial banks. It is not only the largest cooperative financial organization in Korea with a nationwide banking network, but it also directly engages in the supply of agricultural inputs, advanced processing of farm products, and end-market retail. This creates a closed and efficient full-industry-chain system. The dual model of "finance plus industry" allows NACF to act as a super-entity in Korea's agricultural economy, combining both service provision and market leadership.

1.2 Weaknesses

1.2.1 Cumbersome Organizational Structure (W1)

Although NACF theoretically connects resources efficiently through its full-industry-chain organization spanning urban and rural areas, in practice it suffers from a "high input, low output" dilemma. The oversized structure fails to deliver its expected performance for three main reasons. First, overlapping functions and unclear responsibilities exist. Ambiguities between central and local levels and among departments lead to duplicated management and redundant procedures, resulting in substantial administrative inefficiency and higher decision-making costs. Second, structural redundancy causes resource waste. Duplicate facilities, such as distribution centers and service stations at both urban and rural ends, create underutilization in storage, transportation, and labor, driving up operational costs. Third, misaligned distribution results in supply-demand imbalances. Disconnected information between production and consumption leads to situations where rural products remain unsold while urban areas import similar products at high prices, undermining NACF's core coordination function. These issues elevate operational costs and reduce distribution efficiency, which falls short compared with similar organizations in Japan. Consequently, the cooperative's organizational advantages are weakened, and its core vitality is compromised.

1.2.2 Ambiguous Development Positioning (W2)

As NACF's operations have expanded, internal debates over its future development trajectory have intensified, reflecting divergent views on strategic direction. Some members advocate for an agriculture-

centered approach, emphasizing a focus on core agricultural activities, increased investment to consolidate the industrial base, and avoidance of risks associated with diversification. Others support expanding beyond traditional boundaries by actively entering non-agricultural sectors, using business diversification to create new growth opportunities(Liu, Q., Xiang, R., Yang, Q., & Haq, S. ul., 2025). These conflicting positions affect the prioritization of resource allocation and result in a lack of coherence in overall strategic planning, making it difficult to establish a clear and consistent development path. This ambiguity constrains the cooperative's ability to build long-term competitiveness.

1.2.3 Strong Administrative Orientation (W3)

As a key instrument for implementing national agricultural and rural policies, NACF operates under strict government oversight in personnel appointments, operational scope, and financial decision-making. This limitation on autonomy reflects the government's intention to treat the cooperative primarily as a policy executor rather than an independent market entity. Because of its "government-driven" origin, NACF has inevitably developed a high dependence on government policies and resources during its evolution. This dependency weakens its position as an autonomous market actor, causing operational decisions to lean toward following administrative directives rather than responding to market signals. As a result, the cooperative finds it challenging to leverage its initiative and pursue a distinctive, self-directed development path in accordance with market principles.

1.3 Opportunities

1.3.1 Independent Economic Operations (O1)

Relying on its two-tiered organizational system, NACF has revitalized agricultural product marketing through two core approaches. The first is a flattened direct-sales model, which leverages 5,739 outlets reaching remote rural areas to eliminate intermediaries and enable direct farm-to-market distribution, significantly reducing supply chain losses. The second is high-value-added processing, which not only standardizes packaging of agricultural products but also develops diversified products such as organic and ready-to-eat items. For instance, brands under NACF, including the "Cheongjeongwon" organic black fungus, achieve annual sales growth of 40% in convenience store channels, while exported processed products fetch prices 2.5 times higher than imported raw materials. By integrating the full value chain and maintaining channel dominance, NACF effectively increases product premium margins. Farmers benefit directly through year-end dividends and profit-sharing, and complementary services such as credit support and regional brand development further reduce disparities across rural areas, positioning NACF as a core driver of income growth for rural households.

1.3.2 Smooth Communication Channels (O2)

As a principal safeguard for cooperative members, NACF plays a critical role in connecting farmers with the government. In recent years, the dialogue mechanisms between NACF and government institutions have been continuously optimized. Communication frequency and scope of topics have expanded, while the depth and quality of engagement have improved significantly. Traditionally, cooperative members primarily presented concrete agricultural and rural development issues to government authorities. Today, participation has become more diverse and constructive. NACF not only contributes to the drafting and revision of agricultural laws and regulations, reflecting grassroots perspectives and practical experience, but also prepares and submits high-quality advisory reports to inform policy-making. These institutionalized participation channels enhance both the scientific and democratic nature of policy development and strengthen NACF's voice and influence within the agricultural governance system, injecting sustained momentum into the modernization of agriculture and rural areas.

1.3.3 Professional Technical Talent (O3)

As a non-profit corporate entity, NACF regards the cultivation of agricultural talent as a core responsibility. It provides a systematic and institutionalized educational support system to ensure human resources for the modernization of agriculture. NACF operates its own cooperative university and regularly organizes professional training sessions and specialized workshops, establishing a multi-level and comprehensive talent development network. These trained professionals play a critical role in driving organizational innovation and service upgrades, injecting new vitality and momentum into NACF's sustainable development. The organization's continued growth and innovation rely heavily on the support of high-quality talent.

1.4 Threats

1.4.1 Domestic Market Changes (T1)

Dynamic shifts in the domestic agricultural product market pose significant uncertainty and challenges to the survival and development of NACF. In recent years, rising labor costs, downward fluctuations in certain product prices, and increasing rigid operating costs such as energy and logistics have collectively squeezed profit margins, leading to a more passive overall development posture. In an increasingly competitive market, some local cooperatives, limited by scale and resources, have gradually lost their bargaining power and channel advantages, making them less able to withstand market shocks and even facing direct threats to survival or potential closure. These evolving market conditions test NACF's adaptability and resilience and place more urgent demands on its service models, organizational structure, and strategic transformation.

1.4.2 International Environment Shocks (T2)

Since Korea joined the World Trade Organization (WTO), its agricultural sector has become increasingly integrated with the global market, exposing NACF to multifaceted challenges. These challenges extend beyond operational aspects such as talent structures and marketing approaches to systemic dimensions, including service philosophy, organizational culture, and strategic positioning. As a WTO member, Korea's economic development is closely linked to global economic fluctuations. Price volatility in international agricultural markets, changes in trade regulations, and shifts in global supply chains are transmitted to domestic markets through trade and investment channels. As the largest and most widely covering agricultural cooperative organization in Korea, NACF stands at the forefront of responding to external shocks. Its stability and adaptability are being rigorously tested, and reshaping competitiveness while building a resilient agricultural governance system under open-market conditions has become a core issue for both the sustainable development of NACF and national agricultural security.

1.4.3 Structural Imbalance within NACF (T3)

Structural imbalances within NACF are primarily reflected in the misalignment of responsibilities and functional coordination between the central and local cooperatives. Specifically, the central cooperative often employs a highly centralized control approach in organizational management and policy implementation, requiring local units to follow directives unconditionally without adequately considering differences in local resources, industrial characteristics, and development stages. This uniform "one-size-fits-all" management approach substantially weakens the autonomy and flexibility of local cooperatives, making it difficult for them to provide targeted agricultural services or implement innovative practices based on local conditions. Over time, this not only constrains the development space of local cooperatives but also generates internal structural problems such as functional overlap, resource misallocation, and delayed responsiveness, thereby limiting the overall coordination efficiency and sustainable development capacity of the entire NACF system.

2. Quantitative Analysis of NACF Using AHP

2.1 Construction of the Hierarchical Structure

Based on the preceding SWOT qualitative analysis, the factors identified in this study were grouped according to shared characteristics, and their hierarchical relationships were clarified. A three-level hierarchical model was constructed, consisting of the goal layer, criteria layer, and alternatives layer, following a complete permutation approach (see Figure 1).

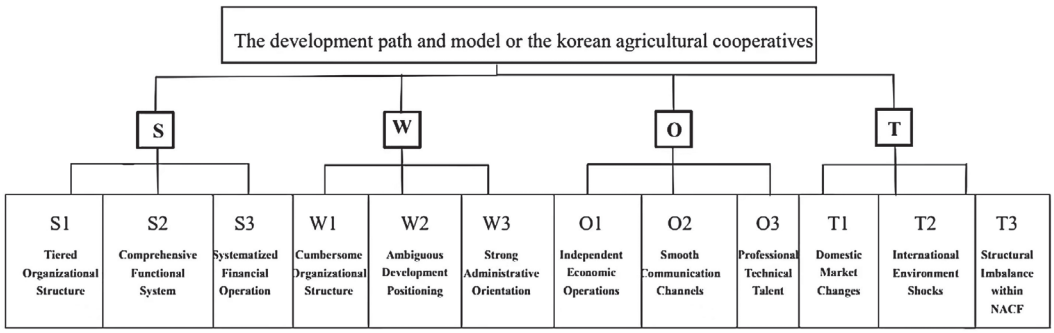

Fig. 1. AHP (Analytic Hierarchy Process) hierarchy diagram

2.2 Establishment of the Weight Judgment Matrix

The critical step in converting qualitative assessment into quantitative analysis lies in assigning numerical values to the relative importance of the factors. To ensure objectivity in weight assignment, expert judgment was employed. Using the 1–9 scale method of the Analytic Hierarchy Process (AHP), relative importance scores were assigned to each factor under different evaluation scenarios, as summarized in the weight scale table.

$$G = \begin{bmatrix} 1 & 2 & 5 & 7 \\ 1/2 & 1 & 4 & 5 \\ 1/5 & 1/4 & 1 & 3 \\ 1/7 & 1/5 & 1/3 & 1 \end{bmatrix}$$

The judgment matrices for the overall goal layer, as well as for the S, W, O, and T dimensions, were subsequently constructed.

$$S = \begin{bmatrix} 1 & 1/3 & 4 \\ 3 & 1 & 5 \\ 1/4 & 1/5 & 1 \end{bmatrix} \quad W = \begin{bmatrix} 1 & 2 & 1 \\ 1/2 & 1 & 1/2 \\ 1 & 2 & 1 \end{bmatrix}$$

$$O = \begin{bmatrix} 1 & 2 & 3 \\ 1/2 & 1 & 4 \\ 1/3 & 1/4 & 1 \end{bmatrix} \quad T = \begin{bmatrix} 1 & 4 & 1/3 \\ 1/4 & 1 & 1/8 \\ 3 & 8 & 1 \end{bmatrix}$$

2.3 Hierarchical Ranking and Consistency Test

To guarantee the scientific validity of AHP results, the judgment matrices were subjected to a one-time consistency check. The consistency index (CI) is defined as:

$$CI = \frac{\lambda \max - n}{n - 1}$$

where λmax is the maximum eigenvalue derived from AW=λW, and N is the order of the matrix. A larger CI indicates poorer matrix fit, while a smaller CI indicates closer approximation to complete consistency. The random consistency index (RI) is obtained from standard tables. When the consistency ratio CR=CI/RI<0.1, the matrix is considered to exhibit acceptable consistency, and the eigenvector can be used as the weight vector. Otherwise, the matrix requires re-evaluation.

Table 1.

n	1	2	3	4	5	6	7	8	9	10
RI	0	0	0.58	0.90	1.12	1.24	1.32	1.41	1.45	1.49

Following calculation, both the goal layer and criteria layer matrices passed the consistency test. Detailed results are presented in Table 2.

Table 2.

Judgment matrix	λmax	CI	RI	CR	Wi
G	4.106	0.035	0.9	0.038<0.1	(0.516,0.317,0.111,0.045)
S	3.085	0.042	0.58	0.072<0.1	(0.279,0.626,0.093)
W	3	0	0.58	0<0.1	(0.399,0.2,0.399)
O	3.107	0.053	0.58	0.091<0.1	(0.517,0.358,0.124)
T	3.018	0.009	0.58	0.015<0.1	(0.257,0.073,0.669)

2.4 Overall Hierarchical Ranking and Consistency Test

Based on the results of the local (criteria-level) ranking, the overall hierarchical ranking was derived by synthesizing the relative importance of factors across the criteria layer, as shown in Table 3.

Table 3. Weight of SWOT Factors of Korea Agricultural Cooperative

	Strengths (S)	Weaknesses (W)	Opportunities (O)	Threats (T)	Overall Ranking Weight
	0.516	**0.317**	**0.111**	**0.045**	**(Wi)**
S1	0.279	0	0	0	0.144(2)
S2	0.626	0	0	0	0.323(1)
S3	0.093	0	0	0	0.048(6)
W1	0	0.399	0	0	0.126(3)
W2	0	0.2	0	0	0.063(4)
W3	0	0.399	0	0	0.126(3)
O1	0	0	0.517	0	0.057(5)
O2	0	0	0.358	0	0.04(7)
O3	0	0	0.124	0	0.014(9)
T1	0	0	0	0.257	0.011(10)
T2	0	0	0	0.073	0.003(11)
T3	0	0	0	0.669	0.03(8)

A consistency test was then conducted on the overall ranking by calculating the comprehensive consistency index.

$$CR = \frac{\sum_{j=1}^{m} CI(j)aj}{\sum_{j=1}^{m} RI(j)aj} = \frac{(0.042,0,0.053,0.009)(0.516,0.317,0.111,0.045)}{(0.58,0.58,0.58,0.58)(0.516,0.317,0.111,0.045)} = 0.04931 < 0.1$$

The results indicate that the overall hierarchical ranking passed the one-time consistency check, demonstrating that the weight allocations of the model matrix elements exhibit optimal fit.

IV. Results Analysis

The AHP quantitative analysis reveals several key conclusions. First, the strength factors (S) exert the most significant influence on the development of NACF, with the highest weight at the criteria level (0.516). This

is followed by weakness factors (W) at 0.317, opportunity factors (O) at 0.111, and threat factors (T) at 0.045. These results indicate that strengths have a far greater impact on NACF's development than any other category, exceeding weaknesses, opportunities, and threats by 1.628, 4.649, and 10.530 times, respectively. Weaknesses are the second most influential factor, with a weight difference of 0.199 compared to strengths, highlighting that sustainable and healthy development of NACF requires leveraging existing strengths while actively addressing the disadvantages associated with weaknesses.

In comparison, opportunities carry a relatively low weight of 0.111, suggesting that NACF should proactively seize opportunities and adjust its development strategy in response to emerging trends. As noted by Yao Meifang (2016) , "enterprises must continuously anticipate potential future competitive directions and refine their strategies through timely adjustments." Threat factors exhibit the lowest weight, which can be attributed to Korea's more than 20 years of experience since joining the World Trade Organization. This long-term development has endowed NACF with strong capacity to adjust to and withstand external shocks. Furthermore, Korea's economic stability in recent years provides favorable external conditions for the continued development of the cooperative system.

When all factors were ranked in the overall hierarchy, it became evident that the well-established functional system (S2) holds the highest weight among the twelve indicators, making it the primary determinant of NACF's development. The hierarchical organizational structure (S1) ranks second in weight, reflecting that a long-standing historical evolution serves as an intrinsic driver of social organization development. The overweight organizational structure (W1) and strong administrative orientation (W3) share equal weights, highlighting that, similar to other social organizations, NACF faces ongoing challenges in balancing government oversight with market responsiveness, which are likely to become more pronounced as the cooperative continues to expand. The unclear development positioning (W2) carries a relatively lower weight compared with other weakness factors, possibly because internal divergences are limited and the overall objective of pursuing a diversified business model remains largely consistent, with differences diminishing as market liberalization progresses.

Within the opportunity dimension, independent economic operations (O1), well-established communication channels (O2), and professional technical personnel (O3) exhibit higher weights. This indicates that strengthening economic operations represents NACF's foremost opportunity, particularly following the 2013 decision to separate banking functions from other activities, which reinforced the role of economic services in supporting other cooperative functions. Nonetheless, the importance of effective communication mechanisms and systematic talent development should not be overlooked, as they remain crucial for the sustainable growth of agricultural organizations. Compared with factors at other levels, threat factors exert the least influence, occupying the 8th (T3), 10th (T1), and 11th (T2) positions in the overall ranking. This outcome reflects Korea's strong capacity to respond to international challenges and the relative stability of the domestic economy. However, the impact of threats should not be ignored, particularly increasing competition from other social organizations (T3), which introduces additional uncertainty for NACF's future development.

V. Research Conclusions and Policy Implications

Based on the traditional SWOT analysis and complemented by the Analytic Hierarchy Process (AHP), this study establishes a research framework that integrates qualitative assessment with quantitative evaluation to systematically examine the development model of NACF and its influencing factors. The results indicate that a well-developed functional system and a hierarchical organizational structure are the key drivers of agricultural cooperative development. Conversely, organizational bloating and administrative orientation constitute the primary obstacles. Independent economic operations represent a major opportunity, demonstrating that agricultural cooperatives can combine service functions with market-oriented profit-seeking. Additionally, mechanisms for government–society communication and structured talent development emerge as core variables affecting long-term sustainability.

Drawing on the development path and contextual characteristics of NACF, four key policy implications can be derived.

1.organizational structure optimization: transitioning from size-oriented "comprehensive" models to efficiency-oriented "lean" models.

NACF's challenges largely stem from pursuing an all-encompassing organizational approach, which results in institutional redundancy and functional overlap. It is recommended to promote business modularization and independent accounting, clearly separating credit operations from economic activities in both management and financial terms, while exploring the establishment of market-oriented subsidiaries. Strategically, the organizational structure should be reconstructed to adopt a "core–satellite" interaction model. The central cooperative should not act merely as a top-down manager; instead, it should function as a platform that empowers local cooperatives by providing strategic resources such as branding, standards, logistics, and data support, thereby systematically stimulating the intrinsic vitality and autonomy of grassroots organizations.

2.Modernizing the governance system involves organically integrating corporate governance principles with cooperative ideals.

The key to sustainable development of the cooperative lies in effectively coordinating its "people-centered" organizational essence with the "capital-centered" operational efficiency. Modern corporate governance structures should be introduced by incorporating independent directors and subject-matter experts into the board, while engaging professional management teams to oversee daily operations. This enhances decision-making professionalism and market responsiveness. At the same time, a precision service system should be established based on member data assets, using big data analytics to identify farmers' production and operational needs. Tailored technical guidance, market access facilitation, and financial support can then be provided, maximizing resource allocation efficiency while adhering to the cooperative principle of serving

members and addressing traditional inefficiencies in operational management.

3.Restoring organizational functions focuses on reshaping the full agricultural value chain to better serve farmers.

The cooperative should shift from functioning as an intermediary to acting as a service provider, investing in high-value segments such as cold-chain logistics, agricultural processing, and brand marketing to help farmers achieve higher quality products and premium pricing. Concurrently, the cooperative should actively promote the development of smart agriculture, transforming into a digital agricultural platform that provides integrated solutions for intelligent production management, supply chain coordination, and e-commerce sales. This approach supports smallholder farmers in accessing larger markets while enhancing the overall value generated along the agricultural production and distribution chain.

4.Reconfiguring government–cooperative relations aims to establish a positive interaction mechanism that balances policy support with autonomous development.

The healthy development of agricultural cooperatives requires a careful balance between securing policy support and maintaining organizational autonomy. Cooperatives should establish self-sustaining mechanisms, enhancing profitability through market-oriented operations to avoid innovation inertia and path dependency resulting from excessive reliance on government subsidies. Simultaneously, the government should transform its support approach, shifting from direct financial subsidies to systematic capacity-building initiatives. This can include government procurement of services, creation of dedicated development funds for agricultural cooperatives, improvement of agricultural market infrastructure, and fostering a fair and competitive market environment. Such measures create favorable conditions for cooperative development and establish a positive policy–cooperative interaction model characterized by government guidance, market-driven operations, and autonomous organizational management.

The practical experience of the National Agricultural Cooperative Federation (NACF) in Korea demonstrates that expansion in organizational scale does not automatically enhance operational efficiency, nor does comprehensive business coverage guarantee the development of core competencies. The modernization of agricultural cooperatives in China should be grounded in the cooperative principle, supported by optimized organizational structures, underpinned by modernized governance systems, focused on the reconstruction of functional value, and reinforced by constructive policy–cooperative interactions. The key to a successful transformation lies in the cooperative's ability to continuously generate tangible and sustainable value for farmers within a complex and dynamic market environment.

References

Choi, J. (2019). The dual structure of Korean agricultural cooperatives: Examining the interplay between financial and non-financial sectors. Asia Pacific Business Review, 25(3), 345-362.

de Sousa, A. C. T., & de Almeida, F. G. C. (2020). Strategic analysis of a technology-based startup using SWOT: A case study. Journal of Entrepreneurship and Innovation Management, 9(1), 1-15.

Han, D. B. (2008). The Korean agricultural cooperative system: Its characteristics and implications. Journal of Rural Development, 31(Special Issue), 1-18.

Hossain, M. S., Hossain, M. A., & Islam, M. Z. (2017). SWOT analysis of the public library services in Bangladesh: A study. Library Review, 66(6/7), 456-473.

Kim, S., & Moon, J. (2017). Evolutionary pathways of agricultural cooperatives in South Korea: A historical institutionalism perspective. Journal of Rural Studies, 55, 101-112.

Kim, Y., Lee, S., & Park, J. (2021). Balancing social mission and market competitiveness: The case of Korean Nonghyup. Annals of Public and Cooperative Economics, 92(4), 589-612.

Lee, H., & Park, C. (2020). The transformation of agricultural cooperatives in Korea: From policy instruments to market players. International Journal of Social Economics, 47(8), 1021-1036.

Lim, S. (2022). Digital innovation in traditional cooperatives: The case of Korean Nonghyup's smart farming initiatives. Technological Forecasting and Social Change, 174, 121-135.

Liu, Q., Xiang, R., Yang, Q., & Haq, S. ul. (2025). Growth Versus Green: How Financial Development and Energy Transition Shape Environmental Sustainability in Emerging Economies. Sage Open, 15(4). https://doi.org/10.1177/21582440251404230

Park, S.-H. (2015). The role of agricultural cooperatives in the value chain: The case of Korea. International Journal of Social Economics, 42(7), 626-638.

Qian Liu, Yuanji Zhang, Xiaoqing Sun. Digital innovation ecosystems and regional green technological innovation: Evidence from China's panel-QCA analysis [J]. Journal of Innovation & Knowledge, 2025, 10 (5):

Ryu, K., & Jang, S. (2018). Governance innovation in agricultural cooperatives: Lessons from Korea's Nonghyup reform. Journal of Co-operative Organization and Management, 6(2), 78-92.

Saaty,T.L.(1980).The analytic hierarchy process: Planning, priority setting, resource allocation. McGraw-Hill.

Valdez, N. A., Garcia, G. M. N. D., & Lim, R. A. (2021). A SWOT analysis of the implementation of online learning in a state university in the Philippines. International Journal of Educational Management, 35(5), 1053-1065.

Yang, J., & Kim, D. (2019). The role of agricultural cooperatives in sustainable rural development: Evidence from Korea's Saemaul Undong. Sustainability, 11(18), 5012.

Yao, M. F., Zhang, A., & Li, B. Z. (2016). Research on the influence of opportunity alertness and competitive tension on organizational change errors. Technical Economics and Management Research, 26(4), 3-7.

Journal of Advanced Academic Research and Studies 高等学术研究期刊
Vol. 2, No.6, 2025 (pp. 17-29)
http://www.nlbaeai.org/

ISSN 3006-4007 (Print)
ISSN 3006-4015 (Online)

The Integration of "Three Modernizations" under the Dual Carbon Goal: A Study on the Green Transformation Path of the Modern Industrial System to Consolidate the Foundation of the Real Economy

Jiayue Sun[a] Dongyan Ma[b]

[ab]Administrative Management, Law School, Panzhihua University

Received 24 October 2025, Revised 18 November 2025, Accepted 22 December 2025

Abstract

Purpose – The purpose of this paper is to focus on the core proposition of green transformation of the real economy, which is enabled by the integration of green, intelligent and integrated "three modernizations" under the dual carbon goal, and solve the practical bottlenecks such as the dilemma of enterprise transformation and the lack of industrial coordination, so as to provide support for consolidating the foundation of the real economy and building a modern industrial system.

Design/Methodology/Approach – Based on the theories of green development and industrial integration, the collaborative mechanism of "three modernizations" is systematically deconstructed, and the four-dimensional transformation path of "industry region factor system" is constructed in combination with policy guidance and practice status.

Findings – This paper studies the dynamic logic of the mutual empowerment of the "three modernizations", and makes it clear that the transformation has achieved phased results, but still faces multiple constraints such as technical costs, standard barriers, and talent shortages.

Research Implications – In the management of the real economy, it is necessary to promote the deep integration of "three modernizations" and achieve its green and high-quality development through the simultaneous advancement of industrial upgrading and emerging industry cultivation, the coordination of regional differentiated development, the precise supply of factors, and the synergy of systems.

Keywords: Double carbon target; "Three modernizations" integration; Real economy; Green transformation
JEL Classifications: Q58,O14,L52

[a] First Author, E-mail: 1214217691@qq.com
[b] Professor, Administrative Management, Law School, Panzhihua University, China, Corresponding Author, E-mail: 390570519@qq.com

I. Introduction

1. Research Background and Problem Proposal

The dual carbon goal is China's strategic choice under the reconstruction of the global climate governance system. It is also the core fulcrum of high-quality development defined in the 2025 State Council's dual carbon work report, bearing the dual mission of international responsibility and domestic transformation. As the ballast stone of the national economy, the real economy has become an urgent proposition in the era of tighter resource and environmental constraints and the superposition of the digital wave. The coordinated promotion of industrial system modernization and green transformation has become an urgent proposition(Qian Liu, Yuanji Zhang, Xiaoqing Sun, 2025). The efficiency bottleneck and ecological weakness of the traditional development model need to be solved. Green, intelligent and integrated integration, with technology collaboration and business innovation as the core, has become the key to activate new productivity and solve the deep contradictions of industrial transformation, providing systematic solutions for the green transformation of the real economy (Li Jing, Zhang Hui, Han Qing, 2025).

Under the guidance of policies and driven by the market, the transformation practice has achieved phased results: at the policy level, the "1+n" policy system of carbon peaking and carbon neutralization has been continuously improved. In 2025, the transformation mechanism from dual control of energy consumption to dual control of carbon emissions will be officially implemented, and a full chain system guarantee will be built; At the practical level, the intelligent transformation has been promoted in depth, the digital transformation rate of Industrial Enterprises above designated size has been steadily increased, and the enabling effect of industrial Internet platform has been continuously released; The green development has achieved remarkable results, with the installed capacity of non fossil energy accounting for 60.9%, the number of green plants exceeding 6000, and the national carbon market covering 60% of the total carbon emissions (Hu min, 2025); The trend of integration has accelerated, the collaborative ecology of new energy industrial clusters and "green power+" has gradually taken shape, and the vitality of cross-border industrial integration has burst out(Liu, Q., Xiang, R., Yang, Q., & Haq, S. ul., 2025).

However, in the process of transformation, multiple bottlenecks still restrict the in-depth promotion: at the enterprise level, SMEs are generally faced with the dilemma of "not wanting to turn, not daring to turn, and not being able to turn". The four deficiencies of technology, talent, experience, and trial and error ability constitute the transformation obstacles; At the industrial level, the digital level of the upstream and downstream of the industrial chain is unbalanced, the standardization process is lagging behind, the commercialization cost of green technology is high, and the return cycle of intelligent investment is long, which restricts the efficiency of collaborative transformation (Lushan, 2025); At the policy level, there is a dislocation between the inclusive policy and the precise needs of enterprises, and the cohesion and synergy of the "three modernizations" related policies are insufficient; At the basic level, the quality of carbon accounting data is uneven, and compound talents who are familiar with industrial laws and AI and green technology are scarce, which has become the core

short board for the in-depth promotion of transformation (yeyanfei, 2025). The above contradiction directly points to the key sticking point of the green transformation of the real economy enabled by the integration of "three modernizations", which needs to be solved through systematic research.

2.Research Review

2.1 Research status at home and abroad

Domestic research has formed a multidimensional exploration context around the core proposition of the dual carbon goal and industrial transformation. In the field of industrial green transformation under the dual carbon goal, the academic community focused on the evolution logic of the "1+n" policy system of carbon peaking and carbon neutralization, focused on analyzing the institutional innovation of the transformation from dual control of energy consumption to dual control of carbon emissions in 2025, discussed the combined application and synergy of policy tools, carried out research on emission reduction potential around clean energy substitution, energy conservation and carbon reduction, and built an effectiveness evaluation system including carbon emission intensity, energy efficiency and other indicators. In the research on the integration of intelligence and greening, the single dimension research has formed a mature theoretical framework, but there is a clear separation - intelligence research focuses on efficiency improvement, and greening research focuses on low-carbon goals. Although the research on the integration of two is gradually starting, it mostly stays at the level of Technology tool superposition, and does not deeply deconstruct the two-way collaborative logic. The research on Integration Oriented Industrial Synergy focuses on cross industry resource optimization and cross regional policy synergy, affirming the role of integration in cost sharing and emission reduction and efficiency enhancement, but lacks deep correlation with the upgrading of modern industrial system and the consolidation of the foundation of the real economy.

In the context of global climate governance, foreign research shows the characteristics of technology driven and international collaboration. In the research of dual carbon related policies, scholars focused on the differentiated design of national policies under the framework of the Paris Agreement, focused on the implementation effect of cross-border policy tools such as the carbon border regulation mechanism, and explored the international carbon pricing synergy and technology transfer mechanism (Zhong Yan, 2024). Based on the development of industry 4.0, the research on the integration of intelligence and greening focuses on the in-depth application of AI, digital twins and other technologies in low-carbon production, emphasizing the role of technology integration and innovation in improving emission reduction efficiency, but paying insufficient attention to the cost constraints and standard barriers in the integration process. The research on Industrial Synergy focuses on the low-carbon reconstruction of the global value chain, and explores the mechanism of collaborative emission reduction of transnational industrial chain and the mode of "low-carbon cluster+digital platform". However, the research is mostly based on the industrial situation of developed countries, and lacks consideration of the suitability of industrial transformation in developing countries, and does not involve the

overall exploration of the systematic integration of "three modernizations".

2.2. Research review at home and abroad

Research at home and abroad has accumulated rich achievements in the fields of policy design, technological innovation and collaborative mode of industrial transformation under the dual carbon goal, forming a complementary research pattern. Domestic research closely follows China's policy guidance and transformation practice, and has distinctive localization characteristics in terms of local policy interpretation and regional industrial collaboration, which provides practical support for understanding the characteristics of the transformation stage; With the advantages of technological innovation and a global perspective, foreign research has accumulated theories in terms of international policy coordination and high-end technology integration, highlighting the core logic of technology driven transformation. The two types of research jointly verified the core values of greening, intelligence and integration in industrial transformation, and clarified the dual driving role of policy guidance and technological innovation, which laid an important theoretical foundation for this study.

There is still a significant gap in the existing research, which is difficult to fully respond to the core proposition of "three modernizations" integration enabling the green transformation of the real economy. First, the theoretical framework for the systematic integration of the "three modernizations" is missing. Domestic and foreign studies are mostly focused on a single dimension or the integration of two, and the three are not regarded as an organic whole, lacking a systematic deconstruction of the interactive logic and collaborative mechanism. Second, the research on the correlation mechanism with the consolidation of the foundation of the real economy is insufficient. The existing achievements either focus on the environmental and economic benefits of the transformation, or explore the development path of the real economy in isolation, and fail to reveal the improvement mechanism of the integration of "three modernizations" on the toughness of the industrial system and the competitiveness of the real economy. Third, there are limitations in the adaptability of research perspective and practice. Domestic research focuses on policy interpretation and single technology exploration, and lacks systematic engineering thinking; Foreign research is not well suited to the situation, and both types of research pay insufficient attention to the practical bottlenecks such as enterprise transformation dilemma, cost constraints, talent shortage, which leads to the disconnection between theory and practice. Based on this, this paper, based on the practice of China's industrial transformation, takes the systematic integration of "three modernizations" as the core perspective, focuses on the goal of consolidating the foundation of the real economy, and makes up for the deficiencies of existing research in systematicness, relevance and practicality.

II. Theoretical review

1. Green development theory

The green development theory is a systematic development theory that takes into account economic growth and ecological protection. The core meaning is to break the traditional cognition of "the opposition between development and environmental protection", take the synergy of pollution reduction and carbon reduction as the core guidance, realize the dynamic balance between economic activities and ecological carrying capacity through technological innovation, system design and model reconstruction, and finally achieve the effective transformation of the value of ecological products. Its core features are systematization, synergy and value orientation, emphasizing the transformation from a single emission reduction to the collaborative promotion of "pollution reduction, carbon reduction and green enhancement", extending from end-of-life governance to green management and control in the whole life cycle, highlighting the unity of ecological benefits, economic benefits and social benefits.

Under the background of double carbon goals, the practical value of the theory is mainly reflected in the action guide for green transformation of industry: on the one hand, it provides theoretical support for policies such as double control of carbon emissions and carbon market construction, and guides the combination of command-based and market-based policy tools; On the other hand, it provides direction guidance for clean energy substitution, energy conservation and carbon reduction technology research and development, and promotes the transformation of the industry from "high carbon growth" to "low carbon and quality improvement". Its deep significance lies in solving the development dilemma of "high energy consumption, high emissions and low efficiency" of the traditional real economy, and making green the bright background of high-quality development of the real economy through the value realization mechanism of ecological products. The practical impact of this theory has deeply reshaped the logic of industrial development, promoted the upgrading of policy design from "fragmentation" to "systematization", guided enterprises to internalize green transformation into core competitiveness, and injected ecological toughness into the consolidation of the foundation of the real economy.

2. Industrial convergence theory

The theory of industrial convergence is derived from the dual drive of technological innovation and market demand upgrading. It refers to the breaking of border barriers between different industries, links within industries or different elements, and the formation of a new industrial form of cross-border collaboration and complementary advantages through technology penetration, business innovation and value chain reconstruction. Its core characteristics are cross-border, innovative and enabling. With digital technology and new energy technology as the key link, it promotes the transformation of industry from "single business" to "multiple integration", and the upgrading from "linear correlation" to "network collaboration" (Wang Hao, Jiang Jinhe,

2025).

At the current stage of development, the core use of this theory is to provide methodological support for the integration of "three modernizations": it not only guides the deep integration of digital economy and real economy, but also promotes the penetration of intelligent technology into the whole industrial chain; It also helps the coupling development of new energy industry and high energy carrying industry, producer services and manufacturing industry, and builds a collaborative ecosystem of "green power+". Its theoretical significance lies in breaking through the limitations of single industry transformation, activating new productivity through factor restructuring and optimal allocation of resources, improving the stability and competitiveness of the industrial chain supply chain, and laying a solid foundation for the construction of a modern industrial system. The practical impact of this theory is reflected in reshaping the industrial competition pattern, promoting the transformation of traditional industries to high-end, intelligent and green ones, promoting the formation of emerging industrial clusters, consolidating the core position of the real economy from the industrial structure level, and providing a path for cross-border collaboration for the transformation under the dual carbon goal.

3. System engineering theory

System engineering theory is an interdisciplinary theory based on integrity, relevance and dynamics. Its core is to regard the research object as a complex system composed of multiple interacting and interrelated elements, and realize the optimization of the overall function of the system through overall planning and collaborative regulation. Its core characteristics are global, dynamic and collaborative, emphasizing the abandonment of the thinking of "looking at a single element in isolation", paying attention to the organic connection and dynamic adaptation of various parts of the system, taking into account short-term goals and long-term benefits, local interests and overall interests.

The core use of this theory in this paper is to build a collaborative mechanism for the integration of "three modernizations" and to break the limitations of the single promotion of intelligence, greening and integration: on the one hand, it guides the overall planning of multi-level elements such as enterprises, industries, regions and systems, and coordinates multiple driving forces such as technological innovation, policy support and factor supply; On the other hand, it provides a theoretical tool to resolve the bottlenecks such as the lack of policy coordination and the imbalance of the industrial chain in the integration of the "three modernizations", so as to achieve the dual improvement of transformation efficiency and basic toughness. Its deep significance lies in providing systematic thinking for the transformation of the real economy under the dual carbon goal, avoiding the fragmentation and waste of resources in the transformation process, and ensuring that the green transformation has both "speed" and "foundation". The practical impact of the theory is reflected in optimizing the transformation path design, promoting the transformation of the policy system from "single orientation" to "collaborative adaptation", promoting the efficient allocation of technology, capital, talent and other elements, providing an overall solution for the green transformation of the real economy enabled by the integration of "three modernizations", and ensuring the stability and sustainability of the transformation process.

III. Synergy mechanism of "three modernizations" integration to promote green transformation of real economy

The integration of "three modernizations" is not a simple superposition of greening, intelligence and integration, but a circular strengthening system with technology collaboration, standard guidance and scene empowerment as the core. The core logic of its coordination mechanism lies in: providing technical tools and efficiency support through intelligence, establishing the transformation direction and value orientation through greening, building a collaborative platform and diffusion channel through integration, enabling and dynamically adapting each other, and jointly solving the efficiency bottlenecks, coordination obstacles and path dependence in the green transformation of the real economy, so as to inject systematic power into the consolidation of the modern industrial system.

1. Intelligent empowerment and greening: efficiency improvement and energy consumption optimization

With digital technology as the core, intelligentization builds a green transformation technology enabling system through the reconstruction of production process, accurate control of energy consumption and coordination of resource circulation, so as to achieve the dual goals of "efficiency improvement" and "energy consumption reduction". In the low-carbon reconstruction mechanism of production process, technologies such as digital twins and artificial intelligence penetrate the whole life cycle of production, optimize process parameters and simplify redundant links through virtual simulation, promote the transformation of traditional high energy consumption process to "precision production and supply on demand", and reduce carbon emission intensity from the source (Lushan, 2025). This mechanism echoes the dual control policy of carbon emissions in 2025, realizing dynamic monitoring and precise regulation of carbon emissions through intelligent means, and turning green transformation from "passive compliance" to "active optimization".

The dynamic energy consumption management and control mechanism relies on the global connectivity function of the industrial Internet platform, integrates multi-dimensional information such as production equipment, energy supply and carbon emission data, and builds an energy consumption management system with real-time perception, intelligent analysis and precise regulation (wangweiguang, wangyangyang, 2024). As the key carrier of technology implementation, virtual power plant can realize peak shaving and valley filling of distributed energy and industrial load through intelligent scheduling, improve the efficiency of non fossil energy consumption, and alleviate the mismatch between energy supply and production demand. At the same time, intelligent technology promotes the implementation of the resource cycle coordination mechanism, optimizes the path of resource recycling, improves the utilization rate of renewable resources, and constructs a closed-loop system of "production consumption recycling" through the digital tracking of material flow, energy flow and information flow, so as to provide resource guarantee for the green transformation of the real economy.

2. Green LED integration: low carbon standards and Industrial Synergy

With low-carbon standards as the core guidance, through system design and value guidance, greenization will promote the breaking of border barriers between industries and regions, form an integrated development pattern of "unified standards, complementary resources and shared risks", and lay a solid foundation for the transformation of the real economy. The synergy mechanism of low-carbon standards is the core traction, with the carbon footprint management system and product carbon identification certification as the core, to build a unified low-carbon evaluation standard for the whole industrial chain, forcing upstream and downstream enterprises to promote green transformation simultaneously (Li Jing, Zhang Hui, Han Qing, 2025). This mechanism solves the problems of "different environmental protection standards and unbalanced emission reduction responsibilities" in the traditional industrial integration, promotes the transformation of integration from "interest driven" to "green value driven", and forms institutional synergy with the carbon peak carbon neutral "1+n" policy system.

Under the guidance of low-carbon standards, the green coupling mechanism of the industrial chain promotes the deep coupling of new energy industry and high energy carrying industry, producer services and manufacturing industry. Through the establishment of green supply chain cooperation mechanism, core enterprises drive supporting enterprises to carry out energy-saving and carbon reduction transformation, forming a collaborative ecology of "low-carbon technology sharing, emission reduction cost sharing, and green benefit sharing". At the same time, the demand for greening promotes the integration of cross industry technologies, spawns new types of businesses such as low-carbon equipment, green materials and carbon management services, and expands the industrial space for green transformation of the real economy. The new energy industry integration mechanism focuses on the precise matching of energy supply and industrial demand, and is supported by a low-carbon energy base to promote the integrated construction of industrial parks and clean energy supply system, build a zero carbon industrial ecology of "new energy supply+green production+carbon sequestration offset", and strengthen the stability and greening of energy supply in the real economy.

3. Integration promotes intelligent upgrading: cross scene technology innovation

As the link of "three modernizations" coordination, integration provides multiple application scenarios and diffusion channels for intelligent technology through scene aggregation and factor flow across industries and regions, promotes the upgrading of intelligent technology from "single point application" to "system integration", and forms a virtuous cycle of "Scene spawning demand, technology responding to demand, and iterative support integration". The cross scenario technology innovation mechanism is the core driving force. The diversified green transformation needs brought about by industrial integration force intelligent technology to break through the limitations of single application and upgrade to a compound and customized direction. For example, carbon monitoring, carbon trading and other scenarios promote the integration of AI and

blockchain technology to form accurate carbon accounting and trusted trading solutions; The demand for cross industry collaboration promotes the upgrading of industrial Internet platforms to cross domain adaptation, and strengthens the ability of multi industry data exchange and resource scheduling.

The acceleration mechanism of technology diffusion relies on the industrial clusters and regional collaborative networks formed by integration to break the "isolated island" application dilemma of intelligent technology. By building a cross regional "core supporting" innovation network, the advanced intelligent technology in the core region will gradually spread to the surrounding regions, and small and medium-sized enterprises will obtain technology empowerment through industrial alliances and sharing platforms to alleviate the "digital divide" and technical barriers (Wang Hao, Jiang Jinhe, 2025). At the same time, integration promotes the cross industry flow of technology, talents, capital and other factors, accelerates the integrated innovation of intelligent technology and green technology, and forms a "1+1>2" technology synergy effect. The iterative optimization mechanism of intelligent technology continuously optimizes the technical algorithm and improves the application functions through the practical feedback of the fusion scenarios, promotes the upgrading of intelligent technology from "adapting to a single scenario" to "supporting multi scenario collaboration", provides more efficient technical support for intelligent enabling green and green leading integration, and finally forms a long-term mechanism for the deep promotion of the integration of "three modernizations" and the continuous consolidation of the foundation of the real economy.

IV. Green transformation path design of "three modernizations" integration under the dual carbon goal

The green transformation path of the integration of "three modernizations" needs to be based on the core goal of consolidating the foundation of the real economy, closely follow the contemporary policy guidance of 2025, such as double control of carbon emissions, "1+n" policy system, and build a four-dimensional path system of "industrial foundation building, regional coordination, factor support, and institutional guarantee" to realize the deep coupling and systematic promotion of greening, intelligence, and integration, in view of the core bottlenecks such as the plight of enterprise transformation, lack of industrial coordination, shortage of factor supply, and weak institutional guarantee.

1. Industry level

At the industrial level, we should focus on the two-way efforts of "stock optimization" and "incremental capacity expansion", solve the structural contradictions of industrial transformation with the integration of "three modernizations", and consolidate the industrial foundation of the real economy. In terms of the "three modernizations" transformation of traditional industries, aiming at the transformation pain points of high energy consuming industries, a collaborative transformation mode of "intelligent energy conservation+Green

replacement" is constructed (chenfuzhong, jiangguohai, Dong kangyin, 2024). Through the digital twin, industrial Internet and other technologies, the production process is reconstructed in the whole cycle, the process parameters and energy allocation are optimized, and the green technology substitution projects such as the "three transformation linkage" of coal and electricity are promoted simultaneously, so as to achieve the double reduction of energy consumption intensity and carbon emission intensity, echoing the rigid constraints of the carbon emission double control policy. Aiming at the dilemma of "three no four shortages" of small and medium-sized enterprises, build a comprehensive transformation service provider platform, integrate resources such as technology supply, talent training and experience sharing, promote lightweight intelligent equipment and modular green transformation scheme, reduce transformation threshold and trial and error cost, and promote small and medium-sized enterprises to integrate into the "three modernizations" integration ecology of the industrial chain (Liujiang, zhaoqianyu, 2023).

In terms of the cultivation of emerging industries, we should take the "new three kinds" of new energy as the core, promote the industry to be high-end, intelligent and green, improve quality and efficiency, strengthen the technical coordination and standard unification of the upstream and downstream of the industrial chain, and build an industrial cluster with global competitiveness. At the same time, focusing on the "neck" low-carbon technologies such as green hydrogen, carbon capture, utilization and storage, the university industry research consortium was established to tackle key problems, improve the transformation mechanism of technology from R&D to commercialization, reduce the cost of green technology application, and expand the technological space for green transformation of the real economy (Xu Simian, Ding Zijia, Xiang hailing, Wu Fei, 2024). Through the benign interaction between traditional industries and emerging industries, we will form an industrial pattern of "stabilizing the foundation of traditional industries and expanding space for emerging industries", and promote the transformation of modern industrial system to green and low-carbon.

2. Regional level

At the regional level, based on the differences in regional resource endowments and the characteristics of the industrial base, we should build a spatial layout of "differentiated positioning and collaborative promotion", solve the imbalance of regional transformation, and strengthen the spatial toughness of the real economy (Wang Hao, Jiang Jinhe, 2025). In resource rich areas, relying on the construction of new energy bases such as the "shage desert", we should promote the deep coupling of new energy supply with high energy carrying industries and computing facilities, build a zero carbon industrial ecology of "green power+industry", realize the transformation of energy resource advantages to industrial competitive advantages, and improve the efficiency of new energy consumption through intelligent dispatching system, so as to ensure the stability and green of industrial energy consumption (chenfuzhong, jiangguohai, dongkangyin, 2024).

In the industrial cluster area, we should build a collaborative transformation network with the "main chain enterprise" as the core, drive supporting enterprises to carry out intelligent transformation and green upgrading synchronously, unify the low-carbon standard and digital interface of the industrial chain, and solve the

problems such as the imbalance of the digital level of the upstream and downstream and the inconsistency of standards. Through the collaborative mechanism of technology sharing, cost sharing and benefit sharing, the overall transformation efficiency of industrial clusters is improved, and the stability and competitiveness of the industrial chain supply chain are strengthened. At the level of Urban-Rural Coordination, we should promote the integration of "three modernizations" to urban-rural construction, transportation and other fields, promote the integration mode of green building and intelligent operation and maintenance, build a collaborative system of clean transportation and digital dispatching, expand the application scenarios of the integration of "three modernizations", realize the collaborative promotion of the green transformation of urban-rural entity economy, and narrow the gap between urban and rural transformation.

3. Element level

At the element level, the focus is on the supply of core elements of the integration of "three modernizations". Through the coordinated efforts of technological innovation, digital empowerment and financial support, the bottleneck of element shortage is broken, and sustainable power is injected into the green transformation of the real economy. In terms of technological innovation, we should establish a carbon neutral technology roadmap, clarify the direction of key technology research in different industries and stages, layout high-level innovation platforms such as national key laboratories and technological innovation centers, and strengthen the source supply of smart green technology (wangweiguang, wangyangyang, 2024). At the same time, we should improve the technology transfer mechanism, promote the diffusion and application of core technologies in the industrial chain and among regions, and accelerate the commercialization of technological achievements.

In terms of digital empowerment, we should take the unification of industrial Internet interface standards and the promotion of MES data specifications as the core, break down data barriers and technology isolated islands, build a cross industry and cross regional digital collaboration platform, and improve the allocation efficiency of data elements (yeyanfei, 2025). Optimize the carbon accounting process through digital means, improve the quality of carbon data, and provide accurate data support for dual control of carbon emissions and carbon market trading. In terms of financial support, we should expand the coverage of green loans and carbon emission reduction support tools, innovate the combined financial products of "green technology+intelligent transformation", explore tax incentive policies such as "information investment plus deduction", and reduce the financing cost and capital pressure of enterprise transformation (Guyuan, 2024). At the same time, we should improve the talent training and introduction mechanism, focus on the shortage of compound talents, build a training system of universities, enterprises and scientific research institutions, strengthen the interdisciplinary talent supply of "industry+ai+green technology", and provide talent protection for the integration of "three modernizations" (Liujiang, zhaoqianyu, 2023).

4. Institutional level

At the institutional level, we should focus on the institutional guarantee weakness of the integration of "three modernizations", build an institutional system of "policy coordination, effective market, and strong supervision", and strengthen the institutional rigidity and sustainability of the transformation. In terms of improving the carbon market, we should further expand the industry coverage of the carbon market, improve the voluntary emission reduction trading mechanism, improve the carbon pricing mechanism, and enhance the incentive and constraint effect of the carbon market on the green transformation of enterprises. At the same time, promote the convergence and coordination of carbon market and carbon emission dual control policies, form the dual constraints of "market pricing+administrative supervision", and guide enterprises to internalize green transformation as the core strategy (nipeigen, Qin Erwa, 2022).

In terms of policy coordination, we should integrate intelligent, green and integrated policy tools such as subsidies, taxes and finance, break the barriers of policy fragmentation, and establish a policy supply mechanism for "precision drip irrigation" (Zhong Yan, 2024). According to the differentiated needs of different industries and enterprises of different sizes, formulate policy plans for classified implementation, and strengthen the pertinence and effectiveness of policies. At the same time, an assessment and evaluation system integrating the "three modernizations" has been established to incorporate the indicators of transformation effectiveness and consolidation of the real economy into the assessment, forming a closed-loop mechanism of "policy guidance - practice promotion - effectiveness evaluation - dynamic optimization". Through institutional innovation, we can solve the problems of insufficient policy coordination and insufficient market incentives, provide stable and efficient institutional guarantee for the green transformation of the real economy enabled by the integration of "three modernizations", and ensure that the transformation process is stable and far-reaching.

References

Chen Fuzhong, Jiang Guohai, Dong Kangyin, spatial spillover effect of digital economy on green transformation of manufacturing industry [j], China population, resources and environment, 2024,34 (05): 114-125

Gu Yuan, improve the green financial system and promote the green transformation of the real economy [j], new economy guide, 2024 (09): 49-54

Hu Min, "theoretical discussion on green finance helping the development of real economy from the perspective of" double carbon "[j], China collective economy, 2025 (26): 105-108

Li Jing, Zhang Hui, Han Qing, the impact of the integration of digital economy and real economy on the green and low carbon transformation of urban economy: spatial effect and mechanism test [j], economic

system reform, 2025 (04): 105-114

Liu Jiang, Zhao Qianyu, mechanism test of green transformation and upgrading of digital economy enabled industries [j], Lanzhou academic journal, 2023 (10): 68-85

Liu, Q., Xiang, R., Yang, Q., & Haq, S. ul. (2025). Growth Versus Green: How Financial Development and Energy Transition Shape Environmental Sustainability in Emerging Economies. Sage Open, 15(4). https://doi.org/10.1177/21582440251404230

Lu Shan, research on green transformation of digital economy enabled enterprises [j], Shanghai light industry, 2025 (02): 185-187

Ni Peigen, Qin Erwa, capital market serving low carbon transformation of real economy [j], China finance, 2022 (03): 69-70

Qian Liu, Yuanji Zhang, Xiaoqing Sun. Digital innovation ecosystems and regional green technological innovation: Evidence from China's panel-QCA analysis [J]. Journal of Innovation & Knowledge, 2025, 10 (5):

Wang Hao, Jiang Jinhe, digital real integration, resource allocation and green transformation performance [j], Journal of Beijing University of Technology (SOCIAL SCIENCES), 2025,25 (05): 89-107

Wang Weiguang, Wang Yangyang, digital economy, real economy and green welfare effect [j], industrial technology economy, 2024,43 (06): 49-60

Xu Simin, Ding Zijia, Xiang Hailing, Wu Fei, "financial technology - real economy" matching and enterprise green transformation [j], finance and trade economy, 2024,45 (11): 56-72

Ye Yanfei, the financial industry needs precise efforts to support the green and low-carbon transformation and development of the real economy [j], economic guide for sustainable development, 2025 (07): 33-37

Zhong Yan, the bond market helps promote the green and low-carbon transformation and development of the real economy [j], bond, 2024 (10): 6

Journal of Advanced Academic Research and Studies 高等学术研究期刊
Vol. 2, No.6, 2025 (pp. 30-41)
http://www.nlbaeai.org/

ISSN 3006-4007 (Print)
ISSN 3006-4015 (Online)

Research on the Teaching Mode of Senior Three Physics Review Classes via Micro-Courses

Han Zang[a] Shuping Bai[b]

[a]Junior High School Physics, Gaoliying School, Shunyi District, Beijing China
[b]Senior High School Physics, Shunyi Branch of Beijing No.4 High School China

Received 24 October 2025, Revised 18 November 2025, Accepted 22 December 2025

Abstract

Purpose – To address the predicament of senior three physics review and enhance students' subject core competencies: Currently, senior three students are confronted with the challenges of dense knowledge points and a tight review schedule. The traditional review model fails to meet their personalized needs, and the contradiction between academic pressure and the demand for improvement has become increasingly prominent.
Design/Methodology/Approach – Based on the in-depth integration of "Internet Plus" and education, with micro-courses as the core carrier, the abstract physical concepts, experimental principles and problem-solving skills are decomposed into concise and refined digital modules.
Findings – Once integrated into the classroom, this module can stimulate students' learning enthusiasm by giving intuitive presentation, optimizing the teaching structure, making targeted breakthroughs in key and difficult aspects, and achieving the dual effects of improving teaching efficiency and reducing ineffective homework.
Research Implications – It provides a new approach for senior three physics review, helps students grasp physical concepts, refine their scientific thinking, and promote the iteration and upgrading of teaching models.

Keywords: micro-courses;"Internet+"; seniorthreephysics;review classes
ERIC Thesaurus Descriptors: Teaching Methods, Physics, Instructional Innovation

[a] First Author, E-mail: zanghan9822@sina.com
[b] Corresponding Author, E-mail: zanghan9822@sina.com

I. 引言

近些年随着社会的发展和素质教育的全面实施，虽然全社会都在呼吁减压、减负，但由于升学压力、家长对子女的过高期望，大量的作业使得高三学生经常体验到“更为广泛”的内心冲突、压力，在高中物理学科中由于学科特点凸显更为严重，这种情况制约了学生物理学科核心素养的提升。教育部办公厅关于印发《基础教育课程教学改革深化行动方案》（教育厅，2023）中要求，构建数字化背景下的新型教与学模式，助力提高教学效率和质量。创新课堂模式势在必行（Qian Liu 和 Yuanji Zhang 等人，2025）。“互联网 + 教育”的理念下应用微课程辅助高三物理复习课教学模式能给课堂教学带来新思路、新方法，其提供了重要的课程优化路径。“互联网 + 教育”支持下的微课教学发挥了“停课不停学”的重要作用，在“互联网 +”应用微课程高三物理复习课模式研究的教学中，真正实现了以学习者为中心，课堂上知识的获得是从学生的需求入手的，而不是教师“无差别的讲述”。网络线上和线下的微课程学习，能够有效提高学生的自主学习和自主研究的能力，学生利用微课程学习，学习是自发的。这样的学习契合了当今社会和时代之所需，是终身化学习、泛在化学习的开始，这种方式也很好地顺应了教育发展的规律和趋势。提高课堂效率，减轻学生作业负担，从而发展学生的物理学科核心素养。

II. 核心素养导向的物理教学

经合组织将核心素养界定为：个人融入主流社会、充分就业、实现自我、终身发展所必需的知识、技能及态度的集合（OECD.2005）。

2014 年 4 月，教育部颁布《关于全面深化课程改革落实立德树人根本任务的意见》（教育部，2014），明确培养学生核心素养是育人的重要目标，是推进课程改革深化发展的关键环节。“核心素养”成为近期教育各界人士讨论和关注的焦点。具体到物理学科核心素养，阐述为物理观念、科学思维、实验探究、科学态度与责任四个维度。

III. 微课程

“微课程”的全称是“微型网络课程”，课程论认为课程包括课程设计、课程开发、课程实施、课程评价等四大范畴，我们平常的教学工作，大多局限于课程实施与课程评价（黄荣怀和杨俊锋等人，2019）。微课程在国外发展迅速，影响广泛，但微课程的结构和组织形式不尽相同，而且在内容深度和资源拓展方面做得还不够。国内各省份对微课程的研究重心主要放在“微课”的征集评选以及促进教师专业发展上，对微课程的认识还处于初级阶段，没有形成体系。微课的制作形式也比较单一，其真正应用到教学上的较少。

3.1 “ 互联网 +” 微课程高三物理复习课模式研究

在新高考的推动下，高中物理复习不再仅仅是对物理知识的简单记忆和再现，而是更加注重对学生学科核心素养的培养（周次备，2022）。中学物理复习不仅能帮助学生巩固所学物理知识、建立知识体系，而且能发展学生自主构建知识、应用所学思想和方法、联系实际解决问题等多方面能力（阎金铎和郭玉英，2018）。互联网辅助下的物理教学促进此类能力的提升。在“互联网 + 教育”支持下，将微课程系统地引入普通高中物理教学，改变传统课堂教学模式，并在其基础上不断注入新的内涵。探索普通高中以“微课程”辅助本土化教学的应用模式。让每一位学习者都获得适合的个性化教育，关注学生的认知水平和个性差异。通过课程内容的延伸或拓展，充分挖掘学生潜力，实现学生个性化发展从微课程和物理学科课程整合的视角，探索物理学科微课程开发之路。以微课程为载体，围绕物理概念复习课，热、光、原子等非主干知识复习课，规律应用复习课，实验复习课，章节复习课等课型，探索提高高中物理教学的有效途径与方法，提升学生自主学习能力，从而进一步提升学生的核心素养，为学生的终身发展服务。

3.2 微课程物理概念复习课

加深理解概念，形成相应的网络体系是概念复习课的主要目的，良好的知识体系非常有助于记忆、提取、应用所学的内容。所学内容之间的联系应该是多方面的，既包括某一单元知识之间的前后联系，还包括不同单元知识之间的联系。所以在高三物理概念的复习教学中，教师主要应通过选取适当的方法，激活学生头脑中的原有知识，同化概念并选择信息的呈现方式，帮助学生回忆和理解并使抽象的概念具体化，复杂的概念简单化，密切各个概念与原有知识的联系，从而降低学生在对概念的知觉与认同上的难度。根据自己对知识的理解构造概念知识网络图，通过制作概念网络图可以促使学生积极动手和思考，使他们能够从整体上掌握基本知识结构和各个知识间的关系；通过制作概念网络图，可以促进核心概念的进阶和各种概念之间的整合。教师也可以利用思维导图进行备课，分析学生构建的导图中可能存在的漏洞和盲点，有针对性地进行复习指导，提升课堂效率。通过这种方式，物理复习课的教学将更加紧凑、有序，从而帮助学生全面掌握物理知识和解题技巧（郑佳莹，2023）。如图 1–1 所示，微课程物理概念复习课模式框架图。

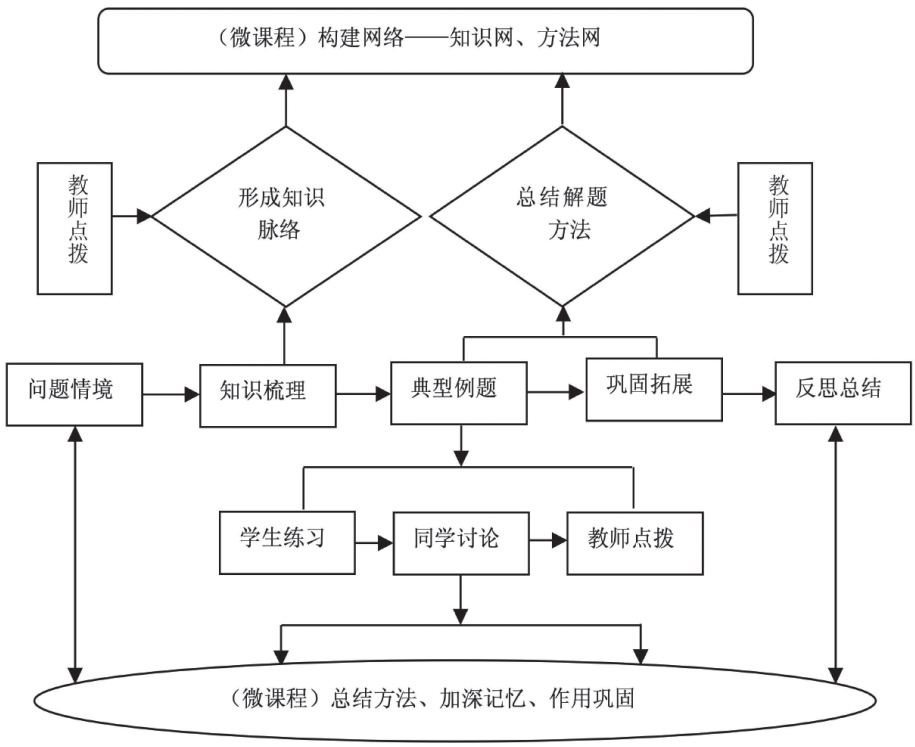

图 1-1. 微课程物理概念复习课模式框架图
来源：作者自行整理

例如在复习物体的运动概念时我们可以给学生设置这样的情景：我们可以在不同时间和不同的位置即时间和空间两个方面复习运动的基本概念，空间中从参考系、坐标系、位置、位移、路程等几个方面进行归类，在时间上明确时间和时刻的区别，而通过位移可以得出速度和加速度等概念。微课程创设探究情境，可以激发学生深度参与。微课程碎片化、重交互特点，可以帮助学生突破难点，实现分层指导，分层拓展，解决疑难问题，深化思维迁移应用，满足学生个性化复习需求，学生借助微课程学习，自己构建简单的知识网络，总结学习方法，形成“预习 – 巩固 – 拓展”的完整学习闭环。能促进学生思维能力的提升，最终发展学生的核心素养。如图 1–2 所示运动概念。

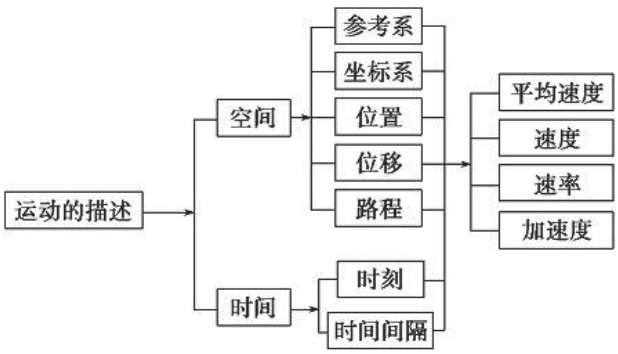

图 1-2. 运动概念图
来源：作者自行整理

3.3 微课程热、光、原子等非主干知识复习课

在教授热学、光学以及原子物理这些概念知识时，采取以学生阅读为基础的教学策略，并辅以精心设计的活动体验和制作精良的微课，以此全方位助力学生的学习。热学部分，制作的微课可以通过动画演示的方式，展现分子在热运动中的状态变化，从微观角度解释热学现象。光学部分，光学微课则可以利用精美的图形和动态模拟，展示光的波动性和粒子性，使学生更直观地理解光的复杂性质，消除抽象概念带来的学习障碍。原子物理知识部分，原子物理的微课借助虚拟现实（VR）技术或 3D 动画，展示原子核内部的结构和核反应的过程，模拟能级跃迁时电子的状态变化。帮助学生在脑海中构建清晰的原子物理图像，提升他们对这一复杂领域知识的理解和学习兴趣。如图 2–1 所示，提高课堂效率。微课程热、光、原子等非主干知识复习课模式框架图。

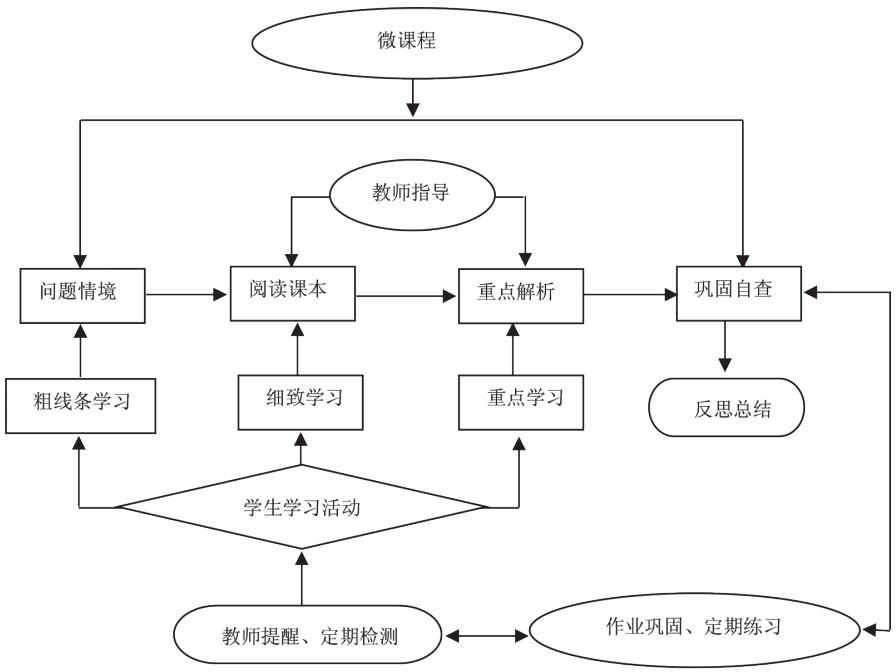

图 2-1. 微课程热、光、原子等非主干知识复习课模式框架图
来源：作者自行整理

3.4 微课程规律应用复习课

微课程规律应用复习课的主要目的是获得解决问题的方法，提高学生分析问题的能力，方法是核心内容，需要学生通过各种体验、活动领悟、掌握以至迁移，微课程通过可视化解题路径暴露思维过程，通过知识图谱微视频系统梳理规律应用逻辑，用错题聚类分析直观呈现高频错误路径，帮助学生重构认知结构。借助进阶式变式训练（基础题 – 综合题 – 创新题），推动方法从模仿应用向灵活迁移跃升。最后通过跨学科项目展示，引导学生反思方法价值，实现从“解题”到“创造”的能力升华。微课程规律应用复习课模式框架图如图 3–1 所示。

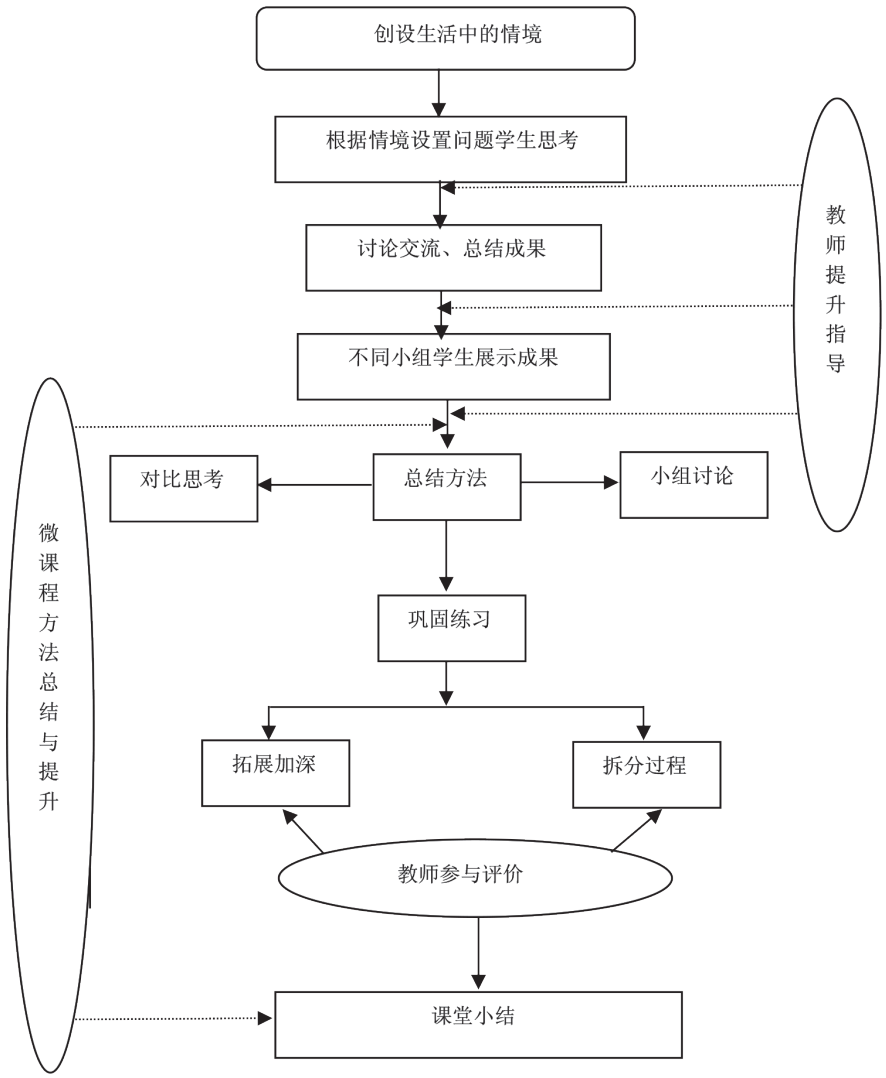

图 3-1. 微课程规律应用复习课模式框架图
来源：作者自行整理

在复习电磁感应的应用时，以当今的高科技热点磁悬浮列车、电磁炮为切入点，设计一个单杆切割的物理情景，一个问题，涉及力和运动、电与磁、功与能量等众多核心知识，学生首先独立解决，然后交流展示，共同总结问题类型、解决方法，通过拓展加以巩固，学生在分析“体验”中，要综合运用前面各章知识处理问题，提高了分析问题、解决问题的能力。对于多过程问题要求学生能拆分过程，并且对每段过程分好类，使方法迁移，达到一题多解、一题多变、多题归一能力。

3.5 微课程实验复习课

实验在高考中占用重要的地位，近几年高考实验试题的设计本着“来源于教材而不拘泥于教材”的原则，力图通过在笔试的形式下考查学生的实验能力，同时也希望通过考查一些简单的设计性的实验来鉴别学生独立的解决新问题的能力和知识“迁移”能力。所以必须让学生亲自去体验，亲自做实验，不亲自做一做，也很难发现问题，很难达到对问题的真正理解。纸上谈兵数十遍，不如亲自操作来一遍。体验过后通过总结、归类，进一步突出放大实验思想原理以及方法，为自然的迁移创造条件。而且情境化是高考命题的趋势，也是学生拉开距离的关键。数学素养是学生做题速度的关键，考生必须将高中物理规律进行融会贯通，才能灵活应对创新实验的考察（董翠敏，2020）。例如，同一物理仪器在不同实验中的应用，通过体验“打点计时器的应用”，由打点计时器记录位置、时间的应用出发，进而测定 v、a、F、E_p、E_k 等，来完成力学中的一系列实验；再比如，同一方法能完成许多实验，通过体验“插针法测光学仪器的折射率”，不仅可以测两面平行的玻璃砖的折射率，也可以测三棱镜、半圆形玻璃砖等其他光学仪器的折射率。为了更好地让学生亲力亲为地做好实验，建议每年的高考前一个多月，学校实验室都全面向学生开放，让学生利用课后的时间到实验室自己做实验。而微课程可以通过虚拟预演突破时空限制，可视化分解实验步骤，暴露隐性原理，为学生实现“预习—实操—反思”全流程赋能，提升实验教学的深度与广度。微课程实验复习课模式框架图如图 4–1 所示。

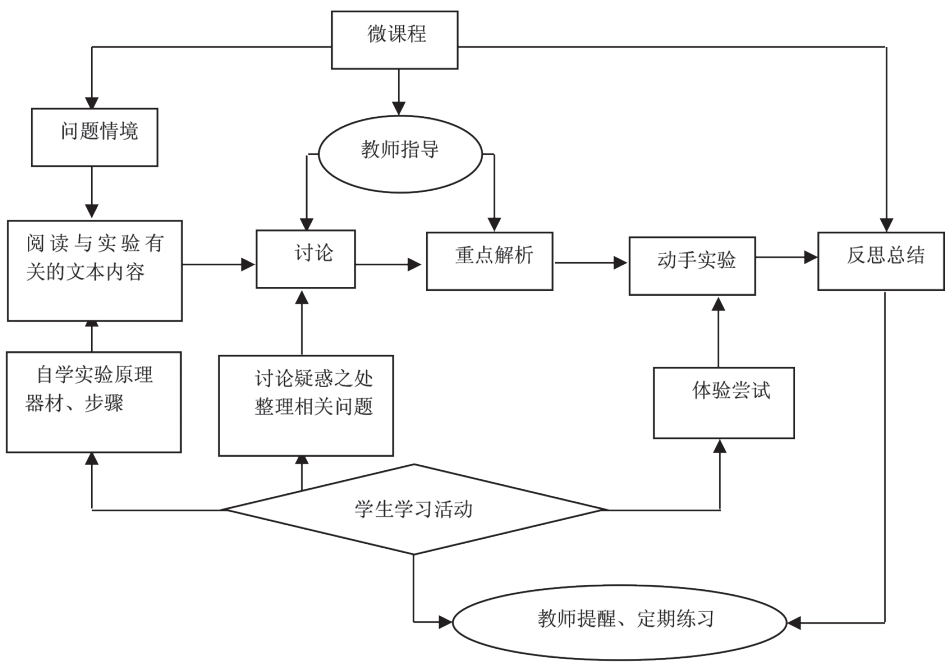

图 4-1. 微课程实验复习课模式框架图
来源：作者自行整理

3.6 微课程章节复习课

微课程章节复习课在教学中具有重要的地位，对学生的物理学习起着拓展和提升的作用。注重知识的内在逻辑与整体联系，引导学生将零散的知识点串联起来，形成条理清晰的知识网络（廖彩根，2023）。

例如，利用思维导图和表格等工具，帮助章节复习课的练习设计应当以学生的身心发展为核心，既要落实三维教学目标，又要渗透思想教育，并且通过学生的体验和实践，达到素质教育的目的。微课程章节复习课的任务在“理”，一是理清知识，二是理清思路。它既不同于新授课，又不同于练习课。微课程章节复习课所要解决的既是知识上的一个“面”，又是知识上的一条“线”，面和线是由许多点组成的，所以它的内容就是点、线、面三者的结合，缺一不可。微课程章节复习课通过知识图谱微视频系统化梳理章节相结合，通过跨学科案例促进知识整合，实现碎片化知识到结构化体系再到创新性应用的三级跃升，助力核心素养落地。微课程章节复习课模式框架图如图 5–1 所示。

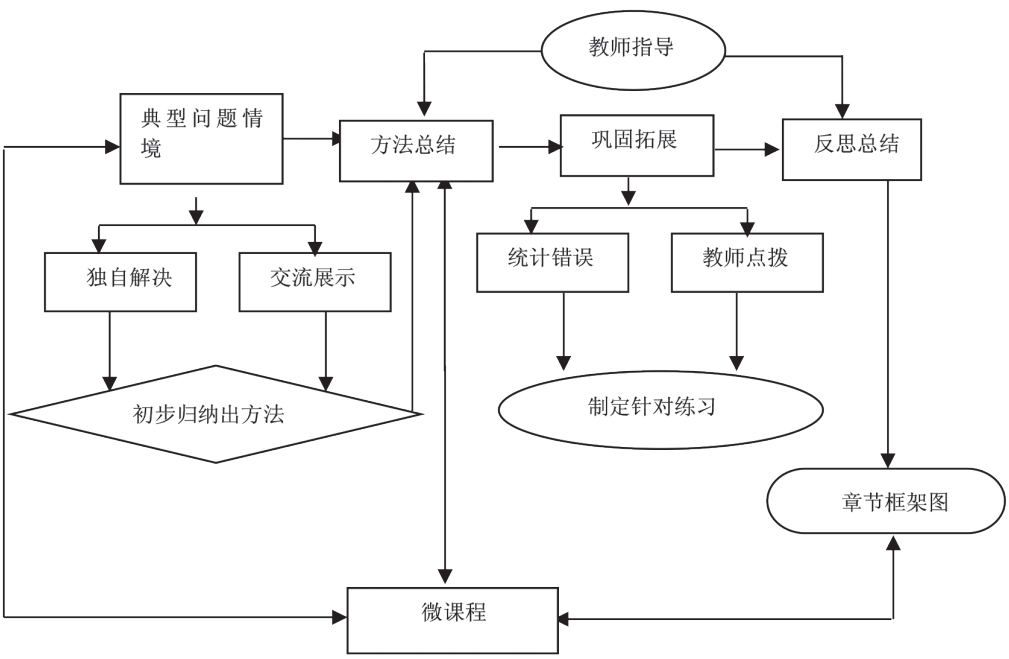

图 5-1. 微课程章节复习课模式框架图
来源：作者自行整理

总结“互联网 +”微课程高三物理复习课模式研究的教学内容如表 1–1 所示。

表 1-1. “互联网 +”微课程高三物理复习课模式研究的内容

课型	“互联网 +”微课程高三物理复习课模式研究的内容
概念复习课	1. 速度变化快慢的描述——加速度 2. 重力与弹力 3. 摩擦力 4. 牛顿第三定律 5. 超重和失重 6. 向心力 7. 向心加速度 8. 功与功率 9. 重力势能 10. 电场强度 11. 电势能和电势 12. 电势差 13. 电容器的电容 14. 导体的电阻 15. 磁感应强度磁通量 16. 动量 17. 放射性元素的衰变
规律应用复习课	1. 匀变速直线运动规律 2. 力的平衡 3. 牛顿运动定律的应用 4. 自由落体运动规律 5. 抛体运动的规律 6. 匀速圆周运动规律 7. 万有引力定律 9. 动能和动能定理 10. 机械能守恒定律 11. 库仑定律应用 12. 电势差与电场强度的关系 13. 带电粒子在电场中的运动 14. 电磁感应现象及应用 15. 动量定理 16. 动量守恒定律 17. 弹性碰撞和非弹性碰撞 18. 闭合电路欧姆定律 19. 磁场对通电导线的作用力应用 20. 带电粒子在匀强磁场中的运动 21. 质谱仪与回旋加速器 22. 楞次定律 23. 法拉第电磁感应定律 24. 电能的输送 33. 原子的核式结构模型 34. 氢原子光谱和玻尔的原子模型 35. 原子核的组成 36. 放射性元素的衰变 37. 核裂变与核聚变
实验复习课	1. 探究小车速度随时间变化的规律 2. 探究加速度与力、质量的关系 3. 探究平抛运动的特点 4. 验证机械能守恒定律 5. 导体电阻率的测量 6. 练习使用多用电表 7. 电池电动势和内阻的测量 8. 验证动量守恒定律 9. 用单摆测量重力加速度 10. 用双缝干涉测量光的波长 11. 用油膜法估测油酸分子的大小
非主干知识复习课	1. 热学 2. 光学 3. 原子物理 4. 天体运动 5. 交流电 6. 机械振动机械波
章节复习课	1. 运动的描述 2. 匀变速直线运动的研究 3. 相互作用—力 4. 运动和力的关系 5. 抛体运动 6. 圆周运动 7. 万有引力与宇宙航行 8. 机械能守恒定律 9. 静电场及其应用 10. 静电场中的能量 11. 电路及其应用 12. 电能能量守恒定律 13. 电磁感应与电磁波初步 14. 动量守恒定律 15. 机械振动 16. 机械波 17. 光 18. 安培力与洛伦兹力 19. 电磁感应 20. 交变电流 21. 电磁振荡与电磁波 22. 传感器 23. 分子动理论 24. 气体、固体和液体

来源：作者自行整理

IV. “互联网 +”微课程高三物理复习课模式效果

陶行知先生提出教学合一。老师的责任不在教，而是教学生学；老师教的法子必须根据学生学的法子来定（陶行知，2013）。所以教师要与时俱进，充分利用信息技术，在教学中微课程应用到课堂中的各个环节，提高了学生学习物理的兴趣，活跃了物理课堂，学生的心理负担减轻了，学生变成了课堂的主体。微课程拓展了教师的教学方式，通过物理概念的教学，使学生受到物理学科核心素养的熏陶；通过非主干知识的学史介绍并把生动的事例展示给学生，让学生从中学习到物理学家严谨的科学态度和思维方法；通过物理实验教学培养学生的观察能力、动手能力、实验探究能力、创新能力、分析问题、合作探究能力，培养学生的科学思维、科学观点、探索精神。微课程教学中设计了大量的体验活动，学生将物理知识归类、整理、提升，不仅促进了学生对知识的把握，而且培养了学生良好的学习习惯。最重要的是学生课上掌握好了，课下作业自然少了，学生的核心素养在潜移默化中得到提升。

V. 结论

“互联网 +”微课程高三物理“物理微课 – 锐航复阶”复习课教学模式。优化物理课堂教学，提高教学效率，对激发学生的复习兴趣、加深对物理知识的理解以及物理问题的方法掌握、提升都起到了促进作用，从根本上减轻学生过重的课业负担，发展了学生物理学科核心素养，为学生终身发展、形成科学世界观和科学价值观打下良好基础，使学生德智体美诸方面得到全面发展。也希望随着素质教育的不断推进、核心素养教育的不断落实，更多的物理教师在原有成熟的高中物理教学中开辟新路，真正落实核心素养的培养，为党育人、为国育才。

参考文献

OECD. 核心素养的界定与遴选：理论和概念基础 [R]. 巴黎：经济合作与发展组织（OECD）,2005.

Qian Liu, Yuanji Zhang, Xiaoqing Sun. Digital innovation ecosystems and regional green technological innovation: Evidence from China's panel–QCA analysis [J]. Journal of Innovation & Knowledge, 2025, 10 (5):

董翠敏 . 在常规中微创新 , 在情境中考素养——2020 年物理高考全国卷试题分析 [J]. 求学 ,2020,(33):59–61.

黄荣怀 , 杨俊锋 , 胡永斌 .“互联网 +”时代的混合式学习：学习理论与教学法基础 [J]. 中国远程教育 ,2019(02)

教材厅 . 基础教育课程教学改革深化行动方案 [Z].2023–05–09

教育部 . 关于全面深化课程改革落实立德树人根本任务的意见 [Z]. 教基二〔2014〕4 号 . 北京：教育部，2014–03–30

廖彩根 .“新高考”背景下高中物理教学创新模式探究 [J]. 中华活页文选 (高中版),2023(16):18–20.

陶行知 . 陶行知教育名篇 [M]. 上海：华东师范大学出版社，2013:1–2
阎金铎 , 郭玉英 . 中学物理教学概论 . 第四版 [M]. 高等教育出版社 ,2018:173
郑佳莹 . 大概念理念下高中物理复习课的实践研究 [D]. 福州 : 福建师范大学 ,2023.
周次备 . 新高考形势下高中物理专题复习有效策略研究 [J]. 数理化解题研究 ,2022(15):71–73.

Ethical Guidelines

Chapter 1. General Rules

Article 1 (Purpose)

The purpose of the following rules is to present the basic ethical principles and direction needed to ensure the research ethics of editorial board members, peer-reviewers. and authors who examine or submit articles to the Journal of Advanced Academic Research and Studies (JAARS). NLBA Eurasian Institute publishes these rules to present the procedure and actions for research misconduct.

Article 2 (Object of the Study and Scope)

The research is subject to sanction, investigation and judgement to determine whether research ethics were followed when any of the following occurs:

i. The study was submitted to the Journal of Advanced Academic Research and Studies,
ii. The study was confirmed to be published in the Journal of Advanced Academic Research and Studies,
iii. The study has already been published in the Journal of Advanced Academic Research and Studies.

Chapter 2. Honesty and Social Responsibility of the Research

Section 1. Honesty in the Research

Article 3 (Honesty of the Research)

a. Researchers must conduct every research behavior (proposing research, researching, reporting and presenting research, investigating and judging) honestly and sincerely.
b. Researchers must describe the content and the importance of the study clearly and objectively, and must not delete or add results arbitrarily.
c. Researchers must carry out every study without any bias or prejudgment.

Article 4 (Ethics for Researchers)

a. Researchers must not commit research misconduct during any part of the research process.
b. A study must not be submitted if it has been published in other journals, and researchers must not request review of the study to different journals at the same time. However, a thesis or a paper presented in a conference as a working paper shall be exceptions.

Article 5 (The Record, Storage, and Report of Research Data and its Disclosure)

a. All research information must be clearly and precisely recorded, processed, and preserved so that it may be accurately analyzed and confirmed.
b. Researchers shall use proper research methods and statistics, and those shall be available to the public if necessary.

Section 2. Fairness in Researchers'Contributions

Article 6 (Collaborative Research)

Researchers must make the roles and contributions of all contributors clear if they conduct a joint study with other researchers, and shall take full responsibility for establishing this. Prior to conducting research, mutual agreement and understanding shall be made with regard to property rights and ownership issues, research director selection, authorship and the standard of order. the data collection method. individual role in the study. and expectations and objectives of the study.

Article 7 (Responsibility and Duty, Order of Authors)

a.Researchers are responsible only for the study that they carry out or are involved in as an author, and are recognized for that achievement.

b.Authors must accept requests for proof of their contributions.

c.The order of authors must accurately reflect the academic contribution by each author to the research contents or results, regardless of the authors'relative positions.

Article 8 (Corresponding Author)

a.Corresponding authors shall take overall responsibility for the results of the study and proofs.

b.Corresponding authors shall have the burden of proof with respect to the order of the author and co- author(s).

Article 9 (Affiliation of Author)

When indicating the affiliation of author(s), the author's current status in principle shall be given. However, it is possible to follow the customs of the author's academic field if their field of affiliation follows a different custom.

Chapter 3. Research Misconduct and Unethical Research Conduct

Section 1. Methods and Principles of Citation

Article 10 (Methods and Principles of Citation)

a.The author may cite a part of other researchers'studies in his/her research paper using their original text, or the translated version by introducing, referring to or making a comment on the original.

b.The author shall take all possible measures to ensure the accuracy in stating sources and making the list of references.The author must confirm all elements of a citation(author's name, number/volume of the journal, page and published year)not depending on the secondary source but solely on the original work. However, when inevitable, the author can include with acknowledgment.

c.The author must cite in a reasonable manner and use the good faith principle, so that uncited works can be clearly distinguished from cited works.

d.The author must cite published works only. However, in the case of citing unpublished academic materials that have been acquired through personal contact, paper review or proposal review, the author must acquire consent from the relevant researcher(S).

e.When the author introduces ideas or theories in his/her work that have been presented in another study, the source must be stated.

f. The author must distinguish his/her own ideas from cited materials when borrowing substantive parts from one source, so readers can clearly recognize the author's work.

g. If a reference has a significant impact on the direction of the research or can help the reader understand the contents, the author must include all such works on the list of references, except in such cases where the relevant research can theoretically and empirically be inferred.

Article 11 (Method of General Knowledge Citation)

a. If the author uses someone else's idea or a fact provided by them, the source should be provided.However. general knowledge or material that general readers will already recognize shall be an exception.

b. If the author is unsure whether any concept or fact qualifies as general knowledge, it is recommended to cite the original text.

Section 2. Research Misconduct

Article 12 (Definition of Research Misconduct)

"Research misconduct" refers to any instances of forgery, falsifcation, plagiarism, failure to give proper credit to co-authors or redundant publications that may emerge during the entire research process (research proposal, conduct of research, report and presentation of research, investigation and judgement).

a. "Forgery" refers to the act of presenting non-existent data or research results.

b. "Falsification" refers to the acts which artificially manipulate research processes, randomly modify, or delete data resulting in distorted research content or research results. (Here. "deletion" refers to the act of using only favorable data and intentionally excluding the data that might cause unexpected or undesired results.).

c. "Fabrication" refers to the act of intentionally creating a document or record that does not exist.

d. "Plagiarism" refers to the acts which pirate other's work, ideas or research, using ideas, hypotheses, theories, research contents, or research results without justifiable approvals, citation, or quotations, as if those were his/her own.

   i. "Idea Plagiarism" refers to the act of using someone else's ideas (explanations, theories, conclusions, hypothesis and metaphors)in full, substantial proportions or in a fragmented revised form without giving appropriate credit to the originator of the words and ideas. Authors have moral responsibility to indicate the source of ideas through a footnote or a reference. Authors must furthermore not steal other's ideas which are known through peer review of research proposals and submitted articles.

   ii. "Text plagiarism" refers to the act of copying text from another's work without clarifying the original author.

   iii. "Mosaic plagiarism" refers to the act of combining a part of a text with a few words added, inserted or replaced with synonyms, and others without clarifying the source or the original author.

e. "Redundant Publication" refers to the act of publishing a paper that is identical or highly similar text to one that has already been published in the past in another academic journal without alerting the editors or readers of the fact that this work was previously published elsewhere. If the contents of the paper are almost the same as his/her previously published paper, the later paper is regarded as a redundant publication even if the text has a different point of view or perspective, or including a diferent analysis based on the same data that has been previously published. In the case in which the author would like to publish a paper using a previously published paper, he/she must acquire permission from the chairperson after providing the information about the publication and double-checking whether it is a redundant publication or duplication of a publication.

f.“Self-plagiarism” refers to the act of using images, graphs or part of one's own research already published without identifying the source, and it is regarded as redundant publication.

g.“Failing to give proper credit to co-authors” refers to the act of failing to list those who have contributed academically to the research process or results as a co-author or conversely to the act of listing those who have not made any academic contribution as co-authors.

Article 13 (Research Misconduct and Copyright Infringement)

a.Generally, the copyright of all papers and instances published through NLBA Eurasian Institute is assigned to the author. However, if they are utilized for public objects like education, NLBA Eurasian Institute owns the right of use.

b.The full term of copyright is assigned to the academic journal publisher in all papers published in academic journals.

c.It should be noted that “Redundant Publication” may cause copyright violation.

d.It should be noted that the author should use proper quotation marks when widely citing text from copyrighted sources, and even if the text is properly cited, it could infringe copyright.

Section 3. Inappropriate Writing

Article 14 (Inappropriate Writing)

The following are regarded as inappropriate writing:

i.Inappropriate citations
ii.Distorting references
iii.The act of depending on abstracts when citing the published paper
iv.Citing papers that the author did not read or understand
v.The act of partially citing despite intensively borrowing from a single source
vi.The act of reusing text

Article 15 (Prohibition of Distortion of References)

a.References must only include documents that are directly related to the article content. Unrelated references for the purpose of intentionally manipulating the citation index of the paper or academic journal should not be included.

b.As a moral responsibility, the author should not only cite the references which will be favorable to his/her data or theory, but also cite references which may contrast with his/her point of view.

Article 16 (Reuse of Text)

a.“Reuse of Text” refers to the act of re-using a part of the manuscript that he/she has used in a previous paper.

b.Text reuse is an act contradictory to ethical writing, so the author must avoid re-using text already used. In case of unavoidable text re-use, the author should not violate copyright infringement by following standardized reference practices including the use of quotation marks or proper indication.

Chapter 4. Ethical Rule Enforcement

Section 1. Research Ethics Committee

Article 17 (Ethical Rule Pledge)

New members who have enrolled in the research pool of NLBA Eurasian Institute shall acquaint and pledge to abide by these research ethics when submitting to the "Journal of Advanced Academic Research and Studies" and conducting research. Current members shall be regarded as having pledged to abide by these research ethics when initiated.

Article 18 (The Announcement of Violation of Ethical Rule)

If a member learns that another member has violated any ethical rules, he/she should endeavor to correct the mistake by helping make him/her be aware of the rules. However, if he/she does not correct the violation or the ethical violation is obviously unveiled, the member must report to the committee immediately.

Article 19 (Organization of the Research Ethics Committee)

NLBA Eurasian Institute shall establish a Research Ethics Committee (hereinafter referred to as the "Committee") mandated to deliberate on matters falling under each of the following sub-paragraphs:

a.Matters concerning establishment and revision of these rules.

b.Matters concerning acceptance and handling of misconduct.

c.Matters concerning beginning actual investigation and decision, approval, and re-deliberation of investigation results.

d.Matters concerning protection of informant and examinee.

e.Matters concerning investigation of research integrity, handling of investigation results and follow up measures.

f.All the matters concerning operations of other committees.

Article 20 (Organization of Research Ethics Committee)

a.The Committee shall consist of one chairperson and members of no less than five but no more than nine persons.

b.The chairperson and the members shall be appointed by the chairman of NLBA Eurasian Institute.

c.The members of this committee shall hold a one year term and they may be reappointed.

d.The chairperson and the members of this committee shall maintain independence and confidentiality with respect to the details relating to deliberations and decisions.

Article 21 (Organization of Research Ethics Committee)

a.The chairperson of the committee shall convene any meeting and preside over such meetings.

b.The committee's meetings shall open with the attendance of a majority of the total members including the chairperson and resolve with the concurrent vote of a majority of those present.

c.No meeting of the committee shall be open to the public. [The meeting shall not be open to the public in principle, but whenever deemed necessary, the committee can ask the related party and hear their opinions.]

d.Whenever deemed necessary, the committee can ask the related party and hear their opinions.

e.Any member who is involved in the research subiect to an investigation will not be permitted to attend the concerned meeting due to a conflict of interest.

Article 22 (Authorities and Responsibilities of the Committee)

a. The committee can summon for attendance and data submission any informants, examinees, witnesses and testifiers, in the process of an investigation.

b. When the examinee refuses to attend the meeting or data submission without a justifiable reason, it could be presumed as an indication that he/she has acknowledged the allegations.

c. The committee can take substantial measures to prevent any loss, damage, concealment or falsification of research records or evidence.

d. The committee members should comply with confidentiality concerning deliberation-related matters.

Section 2. Research Integrity Investigation

Article 23 (Reporting a Fraudulent Act)

An informant can report a fraudulent act using any means available when reporting using their real name. However, when reporting anonymously, he/she must submit the title of the paper, and the evidence and detail of the misconduct in writing or by e-mail.

Article 24 (Confidentiality and Protection of Rights of Examinee and Informant)

a. The committee should not reveal the personal information of the informant unless it is necessary.

b. The committee must take action to protect the informant if the informant experiences illegitimate pressure or threats due to reporting the fraudulent act.

c. Until the investigation of a fraudulent act is completed, the committee must be careful not to infringe upon the rights or reputation of the examinee. If the person turns out to be innocent, the committee must make efforts to recover the reputation of the person.

d. The identity of the informant, investigators, testifiers, and consultants should not be disclosed.

e. All facts relating to research ethics and authenticity investigations must remain confidential and the people involved in the investigation must not reveal any information obtained during the process. If there is a need to disclose related information. the committee can vote to make such a decision.

Article 25 (Raising an Objection and Protection of Defense Right)

a. The committee must ensure the informant and examinee have equal rights and opportunities to state their opinions and obiections. Such procedures must be informed to them beforehand.

b. An examinee or informant may require the avoidance of deliberation and decision after explanation in case he/she expects an unfair decision.

c. The research ethics commitee must give the examinee a chance to submit their opinion and clarify any fact revealed during the first report or any additional report.

Article 26 (Preliminary Investigation of Research Misconduct)

a. The committee must investigate the presence of misconduct if there is a considerable doubt about legitimate conduct or detailed information about misconduct.

b. The chairperson can officially carry out the investigation (hereinafter referred to as the “preliminary investigation") which is a procedure to decide whether the suspected misconduct should be investigated after consultation with the chairman of NLBA Eurasian Institute.

c.The committee shall form the preliminary investigation committee consisting of no more than five members within 30 days of reporting.
d.The committee shall inform the informant and examinee of the formation of such a committee, and give the examinee a chance to clarify within 30 days.
e.A preliminary investigation is initiated within 30 days of the formation of the preliminary investigation committee and the investigation should be completed within 30 days of the start of the investigation except in unavoidable circumstances.
f.If it has been more than five years since a misconduct was committed, the reporting is not handled in principle even if the reporting is accepted.
g.Through preliminary investigation, the following is reviewed:
  i.Whether the reported instance qualifies as research misconduct
  ii.Whether the reporting is specific and clear enough to lead to an actual investigation
  ii.Whether more than five years has passed since the reported misconduct was committed

Article 27 (Report and Notice of the Preliminary Investigation Result)
a.The result of the preliminary investigation shall be notified to the informant and examinee within ten days of the committee's decision, and reported to the chairman of NLBA Eurasian Institute.
b.The result report of the preliminary investigation must include the following:
  i.Specific information regarding the alleged misconduct
  lii.Facts regarding the alleged misconduct
  iii.Grounding for decision on whether to conduct an actual investigation

Article 28 (Raising an Objection and Protection of Right of Defense)
a.The committee must ensure that the informant and examinee have equal rights and opportunities of opinion statement and objection. Such procedure must be informed beforehand.
b.The informant and examinee can make an objection within ten days from the day of being notified of the preliminary investigation.

Article 29 (Beginning and Duration of an Actual Investigation)
a.The actual investigation begins within 30 days after a positive result from a preliminary investigation. During the period, the actual investigation committee consisting of no more than nine persons (including the preliminary investigation committee) must be formed to conduct an actual investigation.
b.The actual investigation must be completed within 90 days from the beginning date.
c.If the investigation committee decides that it cannot be completed within the specified period, it can explain the reason to the committee and request a 30 day extension (one time only).

Article 30 (Formation of an Actual Investigation Committee)
a.An actual investigation committee is composed of no more than nine members.
b.Formation and duration of an actual investigation committee is determined by the committee. The chairperson of the actual investigation committee is elected among the actual investigation members.
c.The investigation committee shall include at least two members with specialized knowledge and experience in the relevant field.
d.A person who has a stake in the investigated matter must not be included in the actual investigation committee.

Article 31 (Request for Appearance and Document Submission)

a. The actual investigation committee can request the examinee, informant(S), and testifiers to appear for testimony and the examinee must comply.

b. The actual investigation committee can ask the examinee for submission of a document, and retain and store the relative research materials about the person involved in the misconduct after the approval of the head of the research organization in order to preserve evidence relating to the investigation.

Article 32 (Exclusion, Avoidance and Evasion)

a. The examinee or informant(s)can require exclusion by identifying the reason if there are reasons to believe that a committee member is unable to maintain fairness. When such request for exclusion is recognized, the member subiected to the request shall be excluded from the concerned investigation.

b. If the committee member is directly related to the corresponding matter, he/she shall be excluded from all deliberation. decisions and investigation of the matter.

c. The chairperson can suspend the qualification of a member who is related to the corresponding matter in connection with the corresponding investigation.

Article 33 (Investigation Report Submission)

The actual investigation committee must submit the result to the committee within the actual investigation period, and the result must include the following:

i. Specific details of the alleged misconduct
ii. Facts regarding the alleged misconduct
iii. Evidence, witness list and affidavits
iv. Investigation results
v. Other data useful for decisions

Article 34 (Decision)

a. The decision must be made within six months from the beginning of the preliminary investigation.

b. The committee shall make the decision confirming that the examinee committed research misconduct after reviewing the result report.

Section 3. Action after Investigation

Article 35 (Action in accordance with Investigation Result)

When a decision is made confirming the research misconduct, the committee can sanction the author with applicable punishment to each of following, or impose corresponding retribution.

i. The publication is postponed until the final decision of the research ethics committee is made even if the paper has been confimed to the author that it will be published.
ii. The publication of the paper to which the research misconduct is related is to be canceled and deleted from the article list of the journal even if the volume has already been published.
iii. The author found to have committed such misconduct is prohibited from submitting papers to the journal for three years, and these facts are made public on the homepage of the journal (http://www.nlbaeai.org).

iv. If there is an author found to have committed plagiarism or redundant publication, the editorial board stores the relevant investigation details for five years.

v. The chairperson of the organization with which the author(s) is affiliated is notified of the final decision.

Article 36 (Investigation Result Notification)

The chairperson of the committee shall immediately notify the related persons such as the informant and examinee of the commitee's decision regarding the investigation result in writing.

Article 37 (Investigation Result Notification)

a. If the informant or the examinee refuses the committee's decision, he/she must submit a re-deliberation request to the committee within 15 days from receipt of the result notice as prescribed in Article 37.

b. The committee must decide whether re-deliberation is necessary within 10 days of the receipt of the re-deliberation request.

c. The committee will decide there-deliberation procedure and method.

Article 38 (Follow-ups such as Recovery of Author's Honor)

If the results of the investigation confirm that no research misconduct has been identified, the committee must take follow-up steps to recover the reputation of the examinee.

Article 39 (Storing the Record and Confidentiality)

a. All records regarding the preliminary and actual investigation are stored for five years from the date of the investigation's conclusion.

b. All facts relating to research ethics and the investigation must remain confidential and the people involved in the investigation must not reveal any information obtained during the process. If there is a need to disclose investigation information, the committee can vote to make such decision.

Article 40 (Etc.)

Matters that are not determined by these rules are to be decided by the editorial board.

Article 41 (Date of Effectiveness)

These regulations shall be effective as of January 1, 2024.

Editorial Regulations

Journal of Advanced Academic Research and Studies (JAARS)

Chapter 1. General Roles

Article 1 (Purpose)

The purpose of the following rules is to prescribe matters regarding the editorial work and standards for the Journal of Advanced Academic Research and Studies (hereinafter referred to as "JAARS") published by NLBA Eurasian Institute.

Chapter 2. Editorial Committee

Article 2 (Editorial Committee)

The editorial committee (hereinafter referred to as "committee") is established in order to accomplish the purpose of Article 1.

Article 3 (Formation of Editorial Committee)

a. The editorial members shall be appointed by the chairman of NLBA Eurasian Institute, and the committee shall consist of no more than 50 members.

b. The chief editor shall be appointed by the chairman of NLBA Eurasian Institute and is in charge of all editing.

c. The editorial committee shall be composed of two chief editors, one editor, and one managing editor. The editors are appointed by the chairman of NLBA Eurasian Institute among editorial members.

d. The term for the chief editor is three years, and the term for the editorial members is two years, and editorial members may be reappointed.

e. This committee makes decisions with a majority attendance of the members and a majority agreement of the members present.

Article 4 (Qualification of Editorial Members)

The editorial members shall meet the following qualifications:

i. Being at least an associate professor in a domestic/international university or a person equally qualified

ii. Someone who studies in an area within the JAARS's specialty and who has published at least 3 articles in a journal (or l article in an SCI, SSCI and/or SCOPUS indexed journal) within the last three years

Article 5 (Responsibilities and Obligations of Editorial Members)

a. Editorial members are fully responsible for the decision to publish JAARS-submitted papers, confirm their integrity during the deliberation process, and observe candidates during the editing process.

b. Editorial members should respect the author's person and independence as a scholar, and make the process of the evaluation of the research paper public if there is a request.

c. Editorial members should handle submitted papers only based on the quality and submission guidelines, not based on the author's gender, age, or affiliation.

d.Editorial members should request a reviewer with specialized knowledge and fair evaluation ability in the relevant field to evaluate submitted papers. However, if evaluations of the same paper are remarkably different, editorial members can acquire advice from an expert in the relevant field.
e.Editorial members should not disclose the matters of the author and the details of the paper until a decision is made pertaining to the publication of the submitted paper.

Chapter 3. Paper Submission and Peer Review Committee

Article 6 (Qualification of Submission and Submission)

a.All the paper submitters must be members registered with JAARS.
b.All papers should be submitted through the JAARS's online submission system (http://www.nlbaeai.org/) and Email:edubscon@outlook.com, and can be submitted at any time. English-language papers from authors outside of the United States of America may also be submitted using e-mail.

Article 7 (Formation of Peer Review Committee)

a.Peer reviewers are appointed by the chief editor, and selected based on the field of the reviewer's expertise. (According to circumstances, a peer reviewer who is not a member of JAARS may be appointed.)
b.Editorial members for each content subject such as international economy, international management, or practice of trade can also serve as peer reviewers.
c.The chief editor represents editorial members, handles all the matters relating to review, and reports the results of peer review to the committee.
d.The managing editor is in charge of the procedure relating to review.
e.The classification and selection of submitted papers is decided by the chief editor and the managing editor, and they report it to the committee.

Article 8 (Qualification of Peer Reviewers)

Peer reviewers shall have the following qualifications:

i.Being at least an associate professor in a domestic/international university, or a person who is as equally specialized as the person above.
ii.Someone who studies an area within the JAARS's specialty and has published at least 3 articles in a iournal (or 1 article in an SCI, SSCI and/or SCOPUS indexed journal) within the last three years.
ii.Someone who presents a paper, chairs a session or serves as a discussant at an academic conference at the same level of the institution, or has served as a reviewer of a study which has been indexed in a domestic or international journal within the last three years.

Article 9 (Responsibility and Duty of Peer Reviewers)

a.Peer reviewers should evaluate papers and report the results of the evaluation to the committee within the time period set by the committee. However, if he/she believes that they are not appropriately qualified to review the paper, they should notify the committee without delay.
b.Peer reviewers should respect the author's person and independence as a scholar. Peer reviewers may request for revision of the paper with detailed explanations if needed in the evaluation of the research paper.

c.Papers are reviewed confidentially using a method in which the name and affiliation of the author is confidential to the public. Showing the paper and/or discussing the contents of the paper with a third party is not desirable unless a consultation is needed for purposes of review.

Article 10 (Unethical Behavior in the Review Process)

a.Peer reviewers must not manipulate either directly or indirectly the related research-specific information contained in the research proposal or review process without the consent of the original author.

b.Peer reviewers must be careful of the following since it could be regarded as unethical research practices in the review process:

i.The act of handing over are quested paper to students or a third party

ii.The act of discussing the details of a paper with colleagues

ii.The act of obtaining a copy of the requested material without shredding it after review

iv.The act of disgracing the honor of others or fabricating a personal attack in the review process

v.The act of reviewing and evaluating a research paper without reading it

Article 11 (Personal and Intellectual Conflict)

a.Peer reviewers must fairly evaluate using an objective standard regardless of personal academic conviction.

b.Peer reviewers must avoid personal preiudice when reviewing a paper. If there is a conflict of interest including personal confict, it must be notified to the committee.

c.Peer reviewers must not propose rejecting a paper due to a confict in interpretation or with the point of view of the reviewer.

Chapter 4. Principle and Process of Paper Review

Article 12 (Papers for Peer-review)

Review shall proceed based on the writing and submission guidelines. If the submitted paper substantially diverges from the writing and submission guidelines, the paper may not be reviewed.

Article 13 (Request for Review and Review Fee)

a.The chief editor discusses the selection of reviewers with editorial members and selects two reviewers for each paper after submitted papers pass the eligibility test.

b.The chief editor immediately requests the two selected reviewers to review the relevant submitted paper.

c.Papers are reviewed by confidential method in which the name and affiliation of the author is confidential to the reviewer, the name of the reviewer is confidential to the author.

d.The chief editor requests a review after deleting the name and the affiliation of the author from the submitted paper, so that the reviewer cannot obtain the identity of the author.

e.A review fee shall be paid to the reviewer.

Article 14 (Review of Paper and Decision)

a.Reviewers shall submit a decision report via the JAARS's online submission system (http://www.nlbaeai.org/) and Email:edubscon@outlook.com within two weeks after they are asked to review a paper.

b.The reviewer shall decide whether the paper should be published based on the following standard. However, if the paper receives less than 30 points in the suitability and creativity of the topic, it will not be published.

i.The suitability of the topic(20 points)
ii.The creativity of the topic (20 points)
iii.The validity of the research analysis (20 points)
iv.The organization and logic development of the paper (20 points)
v.The contribution of the result (10 points)
vi.The expression of the sentence and the requirement of editing (10 points)

The reviewer must give one of the following four possible marks within the two week period: A (90~100 points, acceptance), B (80~89 points,acceptance after minor revisions), C (70~79 points,re-review after revision), F (Rejection), and write an overall review comment concerning the revision and supplementation of the paper.

c.In an instance where the reviewer does not finish the review within the two week period, the chief editor can nominate a new reviewer.

Article 15 (Correction of Papers according to the Editing Guideline)

a.Before holding an editorial committee meeting, the chief editor shall request editorial staff correct those papers that receive“acceptance”or “acceptance after minor revisions”, using the journal's paper editing guidelines. However, if there is a paper that receives “acceptance” after the editorial committee meeting, the chief editor will request the editorial staff to correct the paper after the meeting.

b.The chief editor shall notify each author of the result of his or her paper review after receiving the corrected version of the paper from the editorial staff. However, papers which receive a “rejection” shall not be notified of their result.

Article 16 (Decision of Paper and Principle of Editing)

a.The chief editor shall call an editorial board meeting and make publication decisions after receiving finished papers from reviewers.

b.The editorial board will make decisions to publish based on the following chart. The editorial board should respect

Results of 2 peer-reviews	Overall evaluation(average)	Decision to publish
AA	A	Acceptance
AB, AC, BB	B	Acceptance after minor revisions
AD, BC, BD, CC	C	Re-evaluation after revision
CD. DD	F	Rejection

reviewers'decisions on relevant papers, but can make decisions based on the editorial policy of the JAARS.

c.The paper that is awarded “acceptance” should receive a “B” or higher from reviewers or the level of overall evaluation (average) should be“B"or higher, and the paper that is awarded “acceptance after minor revisions” should have its satisfactory revisions and/or developments confirmed by the initial reviewer after re-submission.

d.The editorial board shall confirm that papers in consideration for publication are suitable to the writing and submission guideline of JAARS, look through detailed matters, and decide particular issue policies such as the number of papers and the order of them.

e.In the case where a paper was presented or submitted for review previously, it cannot be published in JAARS.
f.In the case where an author submits two or more papers for consideration, only one paper that receives "acceptance"shall be published in the same issue.

Article 17 (Notification of the Result)

a.The chief editor shall notify an author of the review result after the initial evaluation or re-evaluation is finished, but can request the author to revise and develop the paper based on the evaluation report. If the editorial board makes a final decision on publication, the author should be notified.
b.The author must be notified of the review result within one month from the day of receiving the paper or revised paper (or the deadline of submission). If it is impossible to notify the author within one month, the reason and the due date of notification must be notified to the author.
c.Unless there is a specific reason, the author must submit a file including a response to the evaluation report, revision to and/or development of the paper to the chief editor after editing the paper within the period the editorial board suggests when he/she is asked to edit the paper. The changed details must be confirmed by the editorial board as well. In case the author does not submit the revision and development to the editorial board within the period, it shall be automatically postponed until this process is finished.
d.A paper that receives a "C" in the overall evaluation (average) shall be re-evaluated after the chief editor sends the revised article and revision report to the initial reviewer(s).
e.In cases where the evaluations of the same paper are remarkably different among reviewers, the chief editor can nominate a third reviewer and request a re-evaluation. In this case, the chief editor shall send the evaluation report to three different reviewers and have them submit the final evaluation report based on the details of the paper, and the paper can be published after revision only if the final mark awarded the revised paper is higher than a "B" in the overall evaluation.
f.The chief editor will issue an acceptance letter for the papers confirmed to be published.

Article 18 (Proofreading and Editing)

a.The chief editor shall request domestic/international members to proofread and edit papers confirmed to be published.
b.Proofreading and editing members shall be recommended by the chief editor and appointed by the chairman of NLBA Eurasian Institute.
c.The chief editor shall send the results of proofreading and editing to the original author and request the author to edit the paper appropriately.
d.The author, unless there is a specific reason, must submit the revised paper and revision report to the chief editor after editing the paper within the period the editorial board suggests when he/she is asked to edit the paper. The changed details must be confirmed by the editorial board as well.
e.Even if a paper is confirmed to be published, it will be rejected if it has not fulfilled the editing procedure following the result of proofreading and editing, or has been found to have committed research misconduct of any kind.
f.If an editing member finds plagiarism, inadequate form, or low quality in the process of editing a paper that the journal has confirmed to be published, he/she must notify the chief editor. and can suggest proper responses to the findings. g. The chief editor suggests whether to avoid publication of a paper or have the author re-submit the paper after revision and development according to the guidelines stipulated in Article 5. In the case of a paper requested to be revised and developed, publication can be postponed based on the degree of completion and the schedule of revision and development.

Chapter 5. Editing and Publication

Article 19 (Editing and the Date of Publication)

JAARS is published six times a year in principle. However, if there is a reason such as the number of submitted papers, the committee can increase or decrease the number of issues.

Article 20 (Notification of Editing)

a.The chief editor shall acquire publication consent from the authors of the confirmed papers before printing.

b.The chief editor shall report to the chairman of NLBA Eurasian Institute when the editorial process following editorial policy is completed, and shall further follow the outlined process for printing and editing.

Article 21 (Sanction on Plagiarism and Redundant Publication)

If the ethics committee finds that a submitted paper or a published paper contains plagiarism or was published in another journal, the following sanctions will be taken:

a.Distributing after deleting the relevant paper in the journal if the journal has not been distributed yet,

b.Notification of paper deletion on the website if it the related issue has already been distributed,

c.Notification of the plagiarism or redundant publication of the relevant paper on the website,

d.Banning the relevant author from submitting papers to all journals published by JAARS for two years from the date when plagiarism and redundant publication is found and from presenting in conference,

e.Notifying the author's affiliated organization or institution of the fact of the plagiarism or the redundant publication, if necessary.

Article 22 (Transfer of the Rights of Publication, Duplication, Public Transmission, and Distribution)

a.The right of publication of the paper is owned by NLBA Eurasian Institute unless specified.

b.The author(s) shall transfer the right of duplication, public transmission, and publication to NLBA Eurasian Institute.If they do not agree, the relevant paper cannot be published in JAARS.

Article 23 (Notification of Paper on Homepage)

Papers published in JAARS shall be publicly notified on the JAARS homepage (http://www.nlbaeai.org/)

Article 24 (Etc.)

The matters that are not decided in these rules are either subject to the submission guidelines or decided by the editorial board.

Article 25 (Date of Effectiveness)

These regulations shall be effective as of January 1, 2024.

Author's Check List

Journal of Advanced Academic Research and Economics (JAARS)

Title of Manuscript: _____

Manuscript ID: _____

Please check ☑ to confirm fulfllment of instructions below before submitting your manuscript.

1.General guidelines

□ The submission contains an original manuscript, a checklist, and a copyright transfer agreement.
□ The manuscript follows the journal template, using MS Word.
□ The manuscript consists of a title page, abstract, keywords, JEL Classifications, acknowledgement (if any), main text, references, appendix (if any), tables and figures.
□ The pages are numbered consecutively beginning with the title page.

2.Title page

□ The manuscript consists of title, author(s)name(s), and affliation(s).
□ The lower area of the title page includes the name(s)of the author(s)and e-mail of the corresponding author only.

3.Abstract, Keywords and JEL classifications

□ The Abstract is less than 250 words for an original article.
□ Includes no more than six keywords.
□ Includes no more than five JEL classifications.

4.Main text

□ Subtitles are ordered according to the journal template.
□ All figures and tables are cited in numerical order as they are first mentioned in the text.
□ All figures and tables are referenced within the text.

5.Tables and figures

□ The titles of figures and tables are set flush left above them, capitalizing the first letter of each word in these titles except for prepositions and articles.
□ Vertical lines are avoided in tables.
□ Pictures or photos are supplied in high resolution (minimum 300 dpi) .
□ Pictures or photos are supplied at a reasonably legible size for printing if they may be affected by resizing in the printing process.

6.References

□ References follow KITRI style.
□ Each entry in the reference list is cited in the main text.
□ All references are listed in alphabetical order followed by the year published.
□ The title of books and journals is expressed in italics.
□ Complete references are included with the full title of the article and up to six author names. Where there are seven or more authors,they are identified as "et al."
□ Journal articles have been double-checked as to whether the author name, (published year), title, joumal name, volume (issue number) and pages are correct.
□ Books have been double-checked as to whether the author name, (published year), title of book (editions, if any), place of publication, publisher's name, and pages are correct.

Copyright Transfer Agreement

NLBA Eurasian Institute

Title of Manuscript:

All Authors:

All authors of this manuscript must agree to the following:

1. All authors certify that the manuscript does not violate any copyright and confirm its originality.

2. All authors have made an actual and intellectual contribution to this manuscript and hold responsibility for its contents.

3. This manuscript has not been published or will not be submitted to another journal for publication.

4. The "Journal of Advanced Academic Research and Studies" has rights in legal action against the infringement of copyright of this manuscript without authors'permission.

5. All authors of this manuscript confirm the transfer of all copyrights in and relating to the above-named manuscript, in all forms and media, through the world, in all languages, to "Journal of Advanced Academic Research and Studies".

6. If each author's signature does not appear below, the signing author(s)represent that they sign this Agreement as authorized agents for and on behalf of all the manuscript authors, and that this Agreement and authorization is made on behalf of all the authors.

In order for my manuscript to be accepted for publication in the Journal of Advanced Academic Research and Economics (JAARS), I hereby assign and transfer to the NLBA Eurasian Institute all rights, title, and interest in and the copyright in the manuscript, entitled.

Date:

Corresponding Author: Signature:

*Submission:You must submit a scanned file (file type: jpg, gif, or pdf) of this signed confirmation and final manuscript file (file type:MS Word) online after the manuscript has been accepted for publication.

Call for Papers

Journal of Advanced Academic Research and Economics (JAARS)

The Journal of Advanced Academic Research and Economics (JAARS) is the official publication of the NLBA Eurasian Institute publishes manuscripts of significant interest that contribute to the theoretical and practical basis of business, economics, and international trade studies. JAARS's broad scope and editorial polices create accessible, thought-provoking content for the general academic community of business, economics, and international trade.The goal of JAARS is to publish insightful, innovative and impactful research on business, economics, and international trade. JAARS is multidisciplinary in scope and interdisciplinary in content and methodology.

Subject Coverage

JAARS is an interdisciplinary journal that welcomes submissions from scholars in business, economics, and trade disciplines and from other disciplines (e.g,political science) if the manuscripts fall within the JAARS domain statement. Papers are especially welcome which combine and integrate theories and concepts that are taken from or that can be traced to origins in different disciplines.

JAARS is a methodologically pluralistic journal.Quantitative and qualitative research methodologies are both encouraged, as long as the studies are methodologically rigorous.Conceptual and theory-development papers, empirical hypothesis-testing papers, and case-based studies are all welcome. Mathematical modeling papers are welcome if the modeling is appropriate and the intuition explained carefully.

Notes for Prospective Authors

Submitted papers should not have been previously published nor be currently under consideration for publication elsewhere. All papers are referred through a peer review process.

All manuscripts should follow the submission guidelines on the JAARS homepage ((http://www.nlbaeai.org/).

JAARS operates an on-line submission system. Manuscripts should be submitted to the on-line submission system at http://www.nlbaeai.org following all prompts on the screen.
There is no firm submission deadline for papers and the submitted articles will be evaluated on a rolling basis.
Any queries should be sent to the Editor of JAARS at the following address:edubscon@outlook.com

Guidelines for Authors (In Brief)
[Journal of Advanced Academic Research and Studies (JAARS)]

How to submit the paper

The authors submit their manuscripts (in MS Word Format) to the on-line submission system at http://www.nlbaeai.org

Blind Review Policy

The journal follows double blind peer review policy. The paper is sent to two reviewers appropriately qualified experts in the field selected by the editor to review the paper in the light of journal's guidelines and features of a quality research paper. For papers which require changes, the same reviewers will be used to ensure that the quality of the revised paper is acceptable.

Manuscript Preparation Guidelines

The author(s) must follow the Manuscript Preparation Guidelines in preparing the manuscript before submission.

1. Language

The language of the manuscript must be English (American English, e.g. "color" instead of "colour").

2. Length of Paper

The length of the paper should not exceed 30 pages (Times New Roman, 12 Font) excluding tables, figures, references and appendices (if any). Articles should be typed in double-space (including footnotes and references) on one side of the paper only (preferably Letter size) with 1 inch margin. Authors are urged to write as concisely as possible, but not at the expense of clarity.

3. Title Page

The title page should include: (i) A concise and informative title, (ii) The name(s) of the author(s), (iii) The affiliation(s) and address(es) of the author(s), and (iv) The e-mail address, telephone and fax numbers of the corresponding author.

4. Abstract

Please provide an abstract of 200 to 250 words. The abstract should not contain any undefined abbreviations or unspecified references. The content of abstract must include Purpose, Design/Methodology/Approach, Findings, and Research Implications.

5. Keywords and JEL Classification Code

Please provide 4 to 6 keywords which can be used for indexing purposes.

6. Acknowledgement

The author may use acknowledgement section in the title page of the paper (if any).

7. Subdivision of the article

Divide your article into clearly defined and numbered sections. Sections should be numbered in Roman numerals (e.g., I, II). Subsections should be numbered using the decimal system (e.g., 1., 1.1., 1.1.1., 1.1.2., 1.2., …, 2., 2.1.). The abstract is not included in section numbering.

8. Table and Figure

Present tables and figures within the article, not at the end of the article. Please note that the article will be published in black and white (print), although online version will contain the colorful figures (if any). However, the color print will be available in extreme cases as per the request of the author.

9. References

Author(s) should follow the latest edition of KITRI style in referencing. Please visit www.nlbaeai.org to learn more about KITRI style.

■ **Citations in the text**

Please ensure that every reference cited in the text is also present in the reference list (and vice versa).

■ **Reference List**

References should be arranged first alphabetically and then further sorted chronologically if necessary.

Guidelines for Authors (In Brief)
[Journal of Advanced Academic Research and Studies (JAARS)]

■ **Examples:**

Reference to a journal publication:

Wegener, D. T., J. F. Dollan and Soon-Hwan Jeon (2015), "Current Trends of Marketing Activities in Parallel Imports", Journal of Asia Trade and Business, 11(5), 55-57.

Hyun, Jun-Seog and Won-Joong Kim (2015), "A Study on the Effects of Export-Import Share and Exchange Rate", Journal of International Trade & Commerce, 11(1), 142-145. http://dx.doi.org/10.16980/jitc.11.1.201502.139

NB: For Oriental authors such as Korean, Chinese and Japanese authors, the first names are spelled out. Names shall be romanized according to their own preference. For Korean authors, the first and second syllables of first names shall be hyphenated.

Reference to a book:

Schmithoff, C. M. (2010), Letter of Credit, New York, NY: Pitman Press, 158.
Jeon, Soon-Hwan (2017), International Trade Practices (5th ed.), Seoul: Hanol, 156.

Reference to a chapter in an edited book:

Bomhoff, E. J. (1998), "Introduction". In E. M. Rogers and S. Taylor (Eds.), The Global Leadership Mindset (2nd ed.), Oxford, UK: Oxford University Press, 12-25.

Reference to a web source:

Liu, Chengwei (2005), Price Reduction for Non-conformity: Perspectives from the CISG. Available from http://www.cisg.law.pace.edu/cisg/biblio (accessed January 11, 2016)

Manuscript Review Timeframe

Manuscripts will be initially reviewed by the Editor within two weeks from submission.

The Editor will contact the corresponding author with news of whether or not the submission will be advanced to the first round of blind reviews (or is being rejected as not suitable for publication in the journal).

Typically, the blind review process takes approximately six to eight weeks.

The JAARS does not process any submission that does not comply with complete requirements of submission guidelines.

Contributors of articles accepted for publication will receive a complimentary copy of the issue in which their article appears.

ISSN 3006-4007 (Print)
ISSN 3006-4015 (Online)

JAARS

www.nlbaeai.org
edubscon@outlook.com
Unit 616, 6/F., Kam Teem Industrial Building, 135
Connaught Road West, Sai Wan, H.K.
USD$60

ISSN 3006-4007
06>