

The Dilemma and Countermeasures of Integrated Development Between Senior Education and the Silver Economy: A Qualitative Study Based on Wuxi

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ABSTRACT

Senior education constitutes a core policy instrument for tackling population aging, and its deep integration with the silver economy represents a pivotal new growth driver for high-quality economic advancement. Taking Wuxi as the research context, this paper investigates the developmental landscape of local senior education and silver economy industries. Drawing on qualitative research methodologies, it establishes a theoretical framework labelled “Three-Dimensional Constraints – Dual Structural Imbalances – Core Integration Dilemma” to unpack barriers impeding cross-sector integration. On this basis, a targeted multi-faceted policy support system is formulated covering fiscal input, policy coordination, regulatory governance and talent incentives. This study delivers theoretical insights and replicable practical paradigms for the synergistic advancement of senior education and the silver economy across the Yangtze River Delta and nationwide.

Keywords: Senior education, Silver economy, Integrated development.

1. INTRODUCTION

Sustained deep population aging stands as a medium- and long-term fundamental socio-economic reality confronting China. Demographic aging reshapes labour market structures and upgrades consumer demand, posing multi-layered challenges to socio-economic development while catalysing the silver economy as an emerging industrial ecosystem.

Official statistics from the Wuxi Municipal Government indicate that by the end of 2024, the registered population aged 60 and above totalled 1.54 million, accounting for 29.46% of the city's registered residents. Wuxi thus ranks among the most severely aging jurisdictions in Jiangsu Province, generating urgent demand for systematic silver economic development. In September 2024, the General Office of Jiangsu Provincial People's Government issued the *Implementation Plan for Advancing High-Quality Silver Economic Development*, which mandates robust growth of elderly care services and supports multi-stakeholder construction of senior universities, community learning hubs and silver-age learning centres. In

April 2025, Wuxi Municipality promulgated the *Opinions on Promoting High-Quality Silver Economic Development*, formally embedding senior education into the overarching agenda of silver economic expansion.

To date, academia and industry have yet to devote sufficient attention to the generative logic, functional mechanisms and actionable pathways through which senior education empowers the silver economy. Rigorous, systematic research is therefore required to address three core inquiries: the necessity, feasibility and implementable strategies of cross-sector integration (Wu & Liu, 2025).

A review of CNKI publications reveals that collaborative research linking senior education and the silver economy remains an emerging field. Yue (2024) proposed strategies to convert demographic pressures into silver economic dividends, demonstrating how online senior education mitigates three pivotal bottlenecks restraining silver industrial growth: insufficient consumption motivation among older adults, underutilised senior human capital, and untapped potential for rural

aging services. Subsequent theoretical analyses predominantly centre on mutual empowerment mechanisms, synergistic value propositions, developmental barriers and integration pathways between senior education and the silver economy (Wu & Liu, 2025; Wu et al., 2025; Zhou et al., 2025; Chen, 2026).

From an integrated silver industrial chain perspective, Jiang (2025) identified four structural constraints undermining senior education production: supply-demand dissonance, structural imbalance, diluted quality orientation, and isolated operational formats. Corresponding countermeasures include demand-driven institutional transformation, curriculum restructuring, digital upgrading and cross-industry scenario expansion. In applied research, Niu (2025) adopted action research to develop and validate a senior education curriculum evaluation framework governed by "central school coordination and community-specific localised implementation". Taking Zhejiang Province as a case, Fang (2026) empirically confirmed that participation in senior education significantly elevates older adults' consumption capacity, proposing a three-tier governance framework: optimising educational supply, enhancing learning efficacy and constructing integrated educational ecosystems. A case analysis by Jiang (2026) further illustrated that senior education alleviates silver economy supply-demand mismatches via organic linkage of educational, talent and industrial value chains.

Collectively, extant literature has delineated the research landscape, core thematic concerns and practical bottlenecks of senior education and the silver economy, with broad scholarly consensus affirming their mutually facilitative relationship. Preliminary analytical frameworks have been established to explain their empowering effects across consumption, employment and industrial dimensions. Nevertheless, existing scholarship fails to develop a holistic analytical system capable of explaining deep cross-sector integration, manifesting two prominent limitations:

First, research depth is limited. Most studies remain confined to superficial descriptive analyses of synergistic relationships and broad macro-level development pathways, lacking granular exploration of stage-specific priorities, bottlenecks and adaptive integration strategies. Resultant outputs therefore exhibit weak theoretical guidance and limited operational utility for practitioners.

Second, research distribution suffers severe imbalance. Disparities persist between theoretical and applied research, alongside pronounced geographic unevenness. Academic inquiry concentrates disproportionately on developed eastern regions, yet region-tailored practical guidance for integrated development remains scarce, failing to accommodate heterogeneous local developmental demands.

2. RESEARCH QUESTIONS AND METHODOLOGY

Building on preceding theoretical foundations, this paper selects Wuxi as a single-city case study, synthesising local policy documentation and primary field survey data to address two central research questions:

- What characterises the current developmental landscape of senior education and the silver economy in Wuxi? What salient obstacles hinder their integrated growth, and what are the underlying structural constraints?
- Aligned with Wuxi's industrial endowments and policy priorities, what multi-dimensional policy support system can facilitate deep, high-quality integration between senior education and the silver economy?

This study systematically elaborates the internal mechanisms through which senior education catalyses silver economic expansion, proposing a policy framework balancing theoretical rigor and on-the-ground operability to enrich domestic scholarship and provide evidence-based governance guidance for local authorities.

First, field investigations were conducted at senior education and elderly care institutions across Wuxi, including the Wuxi Municipal Social Welfare Centre, Wuxi Open University for Seniors and Xinwu District Community College. Semi-structured interviews and panel discussions, triangulated with online survey datasets, captured operational realities and systemic challenges within senior education systems.

Second, targeted surveys were administered to municipal administrative bodies and representative industrial stakeholders, namely the Wuxi Bureau of Civil Affairs, Yunlin Elderly Care Development Group Co., Ltd. and Yixing Jiurucheng Elderly Care Industry Investment Co., Ltd., to extract cross-

sector demands and stakeholder recommendations for integrated development.

Third, supplementary interviews were facilitated via collaborative sub-district authorities (Helong Subdistrict in Binhu District, Shuofang Subdistrict in Xinwu District, Guangyi Subdistrict in Liangxi District), covering metrics including senior participation rates in formal learning, consumption preferences, re-employment willingness and skill-industry matching efficiency.

Finally, all primary qualitative data from interviews, panel discussions and online questionnaires were processed via grounded theory's three-stage coding protocol: open coding, axial coding and selective coding. This analytical procedure yielded the theoretical model of "Three-Dimensional Constraints – Dual Structural Imbalances – Core Integration Dilemma".

3. PRACTICAL INTEGRATION DILEMMAS BETWEEN SENIOR EDUCATION AND THE SILVER ECONOMY IN WUXI

Line-by-line coding of iterative interview textual data was conducted to extract high-frequency core analytical factors and interpret their contextual connotations. Grounded theory's three-stage coding protocol was deployed to construct the theoretical model of "Three-Dimensional Constraints – Dual Structural Imbalances – Core Integration Dilemma", which explains interlocking obstacles and restrictive mechanisms shaping cross-sector integration in Wuxi. A second round of semi-structured interviews confirmed theoretical saturation: all constraints and developmental bottlenecks were fully captured within established conceptual categories, with no emergent unclassified thematic dimensions identified. ("Figure 1")

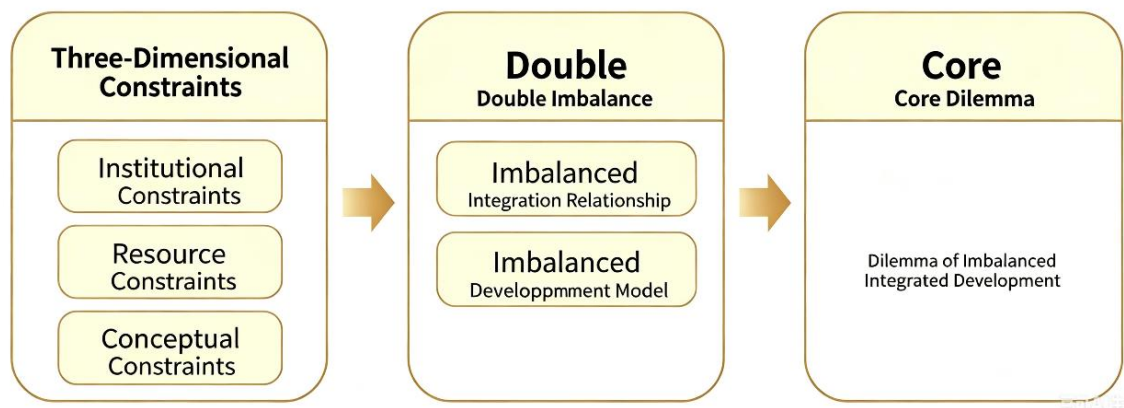


Figure 1 Mechanism diagram of imbalanced integrated development between senior education and the silver economy in Wuxi.

3.1 Three-Dimensional Constraints: Institutional, Resource and Conceptual Constraints

Three interlocking layers of constraints hinder integrated development between senior education and the silver economy in Wuxi:

- **Institutional Constraints:** No dedicated policy instruments govern cross-sector integration. Existing regulatory frameworks address senior education and silver economic development in isolation, lacking clear integration guidance, incentive mechanisms and cross-departmental accountability delineation. Fragmented coordination across education,

civil affairs, culture & tourism, health and commerce authorities impedes unified governance and joint administrative action. Furthermore, enduring institutional mechanisms underpinning integration — including supply-demand matching pipelines, structured talent training systems and equitable benefit-sharing frameworks — remain absent, confining cross-sector collaboration to superficial cooperation rather than fostering a virtuous cycle of "education empowering industry, industry reciprocating education".

- **Resource Constraints:** Severe mismatch exists between senior education resources (teaching faculty, curricula, physical infrastructure) and silver industrial labour

market demands. Educators lack practical industrial expertise, while curricula feature insufficient targeted, hands-on vocational training modules. No unified cross-sector resource exchange platform facilitates bidirectional alignment and efficient circulation of educational and industrial assets.

- **Conceptual Constraints:** A substantial proportion of older adults equate senior education exclusively with recreational leisure, demonstrating low willingness to participate in vocational skill training and limited awareness of the value of "active aging and reciprocal peer support among seniors". Industrial enterprises underestimate the transformative potential of senior education, lacking institutional incentives to invest in joint educational programmes and talent development initiatives. Only a small cohort of firms such as Yunlin Elderly Care Group participate in cross-sector collaboration, with no large-scale, regularised cross-industry cooperative ecosystem established.

3.2 Dual Structural Imbalances: Distorted Synergy Relations and Uneven Operational Models

Two tiers of structural imbalance undermine sustainable integrated development:

- **Superficial cross-sector synergy and underutilised collaborative potential:** Senior education and silver industrial sectors operate largely in institutional silos. Curricula fail to align with occupational competency requirements, lacking systematic vocational training pipelines to supply industrial talent pools. Silver industrial resources rarely permeate senior education delivery, with minimal corporate engagement in curriculum design and institutional operation.
- **Uneven resource allocation and widening urban-rural developmental gaps:** Urban agglomerations concentrate high-quality educational and industrial resources, delivering diversified, high-standard services. Rural teaching sites feature rudimentary infrastructure and narrow curricula dominated by recreational cultural modules, with severely limited provision of digital literacy and vocational skill training. Silver industrial service providers and age-appropriate consumer goods are overwhelmingly concentrated in

urban zones, leaving rural older adults underserved.

- **Low marketisation and weak operational sustainability:** Senior education relies excessively on public fiscal appropriation with underdeveloped market-oriented operational mechanisms; pricing frameworks and service quality fail to satisfy high-end silver consumer demands. Home and community elderly care services within the silver economy depend disproportionately on government procurement contracts, suppressing private market vitality and long-term industrial sustainability.

In aggregate, fragmented policy architectures and deficient operational mechanisms generate institutional constraints; mismatched, unevenly distributed factor resources create structural resource constraints; biased stakeholder cognitive perceptions produce perceptual constraints. Collectively, these three constraint dimensions precipitate superficial cross-sector integration and over-reliance on public-welfare operational models, culminating in the core systemic dilemma: failure to achieve deep institutional linkage, bidirectional mutual empowerment, equitable urban-rural development and long-term sustainable growth. The self-reinforcing virtuous cycle of "education cultivating talent, talent revitalising industry, industry reciprocating education" cannot be realised under current institutional arrangements.

4. POLICY RECOMMENDATIONS

4.1 Reinforcing Fiscal Support: Establishing Diversified Multi-Source Investment Mechanisms

It is necessary to construct a multi-layered funding ecosystem governed by "public fiscal leadership, corporate market participation and supplementary social capital investment" to secure robust financial foundations for cross-sector integration.

- **Scaling up dedicated fiscal allocation:** it is to launch a special integrated development fund for senior education and the silver economy, earmarked for curriculum innovation, faculty training, infrastructure construction, cross-resource integration platform development and rural resource supplementation to mitigate urban-rural developmental disparities.

- Refining targeted fiscal subsidy frameworks: it is to provide tax abatements, venue subsidies and cash incentives for enterprises and social organisations investing in senior education operation, curriculum design and talent cultivation to stimulate private sector participation. Implement tuition subsidies for older adults enrolling in vocational skill modules, with enhanced support targeting rural and low-income seniors to improve equitable programme accessibility.
- Guiding orderly social capital mobilisation: it is to deploy government service procurement, franchising and Public-Private Partnership (PPP) modalities to attract private capital into senior education and silver industrial sectors. Support private investors to establish independent senior education institutions and develop differentiated silver consumer products and services to activate market dynamism.
- Introducing tiered talent incentive policies: we should improve remuneration and professional title evaluation standards for full-time senior education instructors, integrating senior educators into municipal high-skilled talent development programmes. Offer social insurance subsidies and position allowances for enterprises hiring seniors trained via formal senior education pathways to incentivise absorption of older labour resources. Grant formal recognition and rewards to outstanding elderly employees and entrepreneurs to cultivate a social culture centred on active aging and reciprocal peer support.
- Expanding multi-channel policy dissemination: we should disseminate integration policy instruments, exemplary cross-sector cases and core developmental value propositions via mainstream media, community service hubs, senior education institutions and industrial enterprises to recalibrate biased cognitive perceptions among older adults and corporate stakeholders, boosting society-wide participation enthusiasm.

4.2 Strengthening Policy Coordination: Optimising Integrated Development Regulatory Frameworks

There is a must to refine top-down policy guidance and cross-departmental coordination to deliver clear institutional direction for cross-sector integration.

- Formulating specialised integration policy documents: we should define overarching developmental objectives, core priority tasks, segmented accountability divisions and multi-layered safeguard mechanisms for integrated advancement. Clarify differentiated administrative responsibilities for education, civil affairs, culture & tourism, health and commerce authorities, establishing regular cross-departmental coordination mechanisms to unify administrative implementation.
- Embedding integration within urban master planning: we should incorporate integrated senior education and silver economic development into Wuxi's comprehensive socio-economic development master plan, aging undertakings strategic plan and silver industrial development roadmap. Coordinate implementation alongside silver industrial park construction, 15-minute elderly care service circle deployment and urban regeneration initiatives to optimise spatial and industrial layout efficiency.

5. CONCLUSION

This paper adopts Wuxi as a contextual case study to systematically investigate practical bottlenecks and multi-dimensional policy support systems governing synergistic development between senior education and the silver economy. Its theoretical and practical contributions are delineated as follows:

Based on a prefecture-level city empirical case, this research applies grounded theory to develop the “Three-Dimensional Constraints – Dual Structural Imbalances – Core Integration Dilemma” model, delivering an integrated analytical framework for unpacking cross-sector integration dynamics between senior education and the silver economy. It provides methodological and theoretical reference points for parallel empirical research in comparable urban jurisdictions.

Rooted in primary field survey data and indigenous industrial cases from Wuxi, the proposed policy support framework delivers targeted, actionable governance recommendations for Wuxi municipal authorities to optimise senior education spatial layout, expand silver industrial scale and upgrade industrial service quality. It also generates replicable, scalable practical experience for cities across the Yangtze River Delta and

nationwide to address the dual socio-economic challenges of population aging and industrial transformation, advancing deep cross-sector integration between senior education and the silver economy.

This study acknowledges two primary methodological limitations:

- Primary survey datasets are concentrated within Wuxi's urban core jurisdictions, with insufficient sampling of rural populations restricting granular analysis of urban-rural disparities in integrated development, thereby limiting the generalisability of research conclusions.
- Quantitative analytical depth remains constrained; no econometric empirical model is constructed to quantify the marginal catalytic effect of senior education on silver economic growth, precluding precise measurement of relative impact magnitudes across distinct empowerment channels.

For future research agendas, scholars may incorporate emergent artificial intelligence technological trends to examine how digitalisation and AI reshape cross-sector integration dynamics, exploring innovative operational formats and developmental models of "digital senior education + silver economy". Such extensions will furnish more comprehensive theoretical frameworks and evidence-based practical guidance for high-quality socio-economic development amid sustained population aging.

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