Journal of Humanities and Social Sciences Studies
ISSN: 2663-7197
DOI: 10.32996/jhsss
Journal Homepage: www.al-kindipublisher.com/index.php/jhsss

JHSSS
AL-KINDI CENTER FOR RESEARCH AND DEVELOPMENT

| RESEARCH ARTICLE

SWOT Matrix Analysis of the Health and Wellness Industry in the Guangdong-Hong Kong-Macao Greater Bay Area

Wang Leyi[1], Zhang Ping[1], and Zeng Mengjia[1]

[1] *College of Medical Technology, Guangdong Medical University, Dongguan 524023, Guangdong, China*
[2] *School of Sociology and Humanities, Jiangxi University of Finance and Economics, Nanchang 330013, Jiangxi, China*
[3] *College of Traditional Chinese Medicine and Health, Guangzhou Southern University, Guangzhou 510970, China*

| ABSTRACT

With the intensification of population aging in China, the aging issue among the migrant population in the Guangdong–Hong Kong–Macao Greater Bay Area (GBA) has become particularly prominent. The development of the health and wellness industry has emerged as a crucial strategy to alleviate the pressure on medical insurance and enhance the quality of elderly care. This study employs the SWOT matrix analysis method to examine the internal strengths and weaknesses as well as the external opportunities and threats of the health and wellness industry in the GBA. The findings indicate that the GBA possesses significant advantages in terms of policy support, regional coordination, the investment environment, and technological innovation. However, it also faces challenges such as local governance barriers, uneven regional development, high costs, and a lack of unified standards. External opportunities include the benefits of national strategic policies, deepening regional integration, and the ability to draw on international experiences. In contrast, unstable international situations and intensified regional competition pose external threats. On the basis of these findings, this study proposes strategies to strengthen top-level design, innovate policy instruments, construct a full-industry-chain system, expand the scope of medical insurance payments, establish risk hedging mechanisms, and innovate business models for health and wellness. These strategies aim to promote the sustainable development of the health and wellness industry in the GBA and improve the quality of elderly care services for key populations in integrated medical and elderly care.

| KEYWORDS

Guangdong–Hong Kong–Macao Greater Bay Area; health and elderly care industry; SWOT analysis framework

| ARTICLE INFORMATION

ACCEPTED: 19 February 2025 **PUBLISHED:** 01 March 2025 **DOI:** 10.32996/jhsss.2025.7.3.14

1. Introduction

According to data from the Seventh National Population Census, China's population aged 65 and above has reached 190.63 million[1], accounting for 13.5% of the total population, with a net increase of 102.52 million compared with the initial stage of aging in 2000[2]. Amid this structural transformation, the sustained expansion of chronic disease prevalence and the disabled elderly population (reaching 264 million among those aged 60+ by 2021) has subjected traditional medical-elderly care systems to three pressures: sustainability challenges in healthcare funds, widening professional care service gaps, and intensified demands for quality elderly care[3]. Notably, the Guangdong–Hong Kong–Macao Greater Bay Area (GBA), which serves as a powerful magnetic pole for China's population mobility, exhibits time–space compressed aging characteristics. The cyclical progression of historical migration has triggered three superimposed effects: concentrated aging of 1990s migrants, intergenerational support pressures in "migratory bird" family structures, and exceptional aging rates in Hong Kong and Macao (e.g., Hong Kong's 20.1% population aged 65+)[4]. These collectively form cross-border, heterogeneous, and gradational "three-tiered aging shockwaves," establishing the GBA as a paradigmatic case for studying the evolution of the elderly care industry in complex contexts.

Aligned with the strategic positioning of the four core engine cities outlined in the Outline Development Plan for the Guangdong–Hong Kong–Macao Greater Bay Area, current elderly care services demonstrate notable structural imbalances. Service delivery disproportionately emphasizes basic living assistance over medical care and rehabilitation training that address core demands. At the industrial synergy level, institutional innovations in cooperative platforms such as Nansha, Qianhai, and Hengqin have yet to be effectively translated into optimized healthcare-elderly care resource allocation[6]. Operationally, service providers predominantly face survival challenges characterized by "high-cost, low-revenue" dilemmas[7].

This study employs a SWOT analytical framework to examine the development environment of the elderly care industry in the GBA in four dimensions: strengths, weaknesses, opportunities, and threats. This study particularly elucidates the barrier coefficients constraining cross-border medical resource flows under the "dual circulation" paradigm, the transmission mechanisms reshaping the silver economy value chain, and the catalytic effects of the Bay Area's unique policy endowments on industrial upgrading. The research ultimately aims to formulate a spatially adaptive strategic matrix for industrial development.

2. Literature review and Problem Statement

In recent years, with the rise of the "Silver Economy," the eldercare industry in the Guangdong–Hong Kong–Macao Greater Bay Area (GBA) has adopted diversified innovation models to address aging-related challenges. Data indicate that the population aged 60 years and above in the GBA exceeds 15 million (15% of the total resident population)[8][9], with projections suggesting that this figure will surpass 20 million by 2030 [10], intensifying the supply–demand imbalance for elderly care beds. To alleviate the acute shortage of hospital beds for elderly patients in public hospitals, the GBA has implemented a "senior living community + rehabilitation hospital" model that integrates medical resources. Concurrently, leveraging cultural and tourism assets, the region has pioneered an emerging "travel-based eldercare" model. This "migratory bird-style eldercare" approach has driven consumption upgrades, generating an average annual growth rate of 12% in tourism-related revenue over the past three years [11] and creating over 80,000 new jobs [12]. Furthermore, an integrated "medical-rehabilitation-nursing care" model targets subhealthy and disabled elderly populations (approximately 35% of seniors), enhancing service quality through tiered care systems. These innovative paradigms demonstrate how social enterprises are harnessing opportunities within the Silver Economy to unlock the latent value of eldercare industries, gradually emerging as key drivers in the development of health and wellness sectors.

However, the health and wellness industry of the GBA continues to face systemic challenges. Wang Zifei noted that the region lacks coherent industrial development planning[13], compounded by relatively outdated societal perceptions. Cross-jurisdictional policy alignment remains below 30%, resulting in redundant resource allocation [14][15]. Chen Tianhong emphasized inconsistent elder service standards and fragmented information systems[16], with only 30% of care institutions integrated into unified platforms and less than 20% medical data interoperability, exacerbating service fragmentation [17][18][19]. Currently, the GBA's eldercare industrial chain remains nascent, characterized by over 70% dependency on imported high-end medical devices, only 15% of rehabilitation institutions providing comprehensive services (including psychological interventions), and fewer than 25% of eldercare facilities possessing professional medical qualifications [21]**Error! Reference source not found.**[22]. Additionally, approximately 40% of senior tourism programs lack emergency medical facilities, coupled with a policy lag, leading to an 18% annual growth rate in consumer complaints [23][24].

This study focuses on how the GBA can address these challenges while incorporating the eldercare needs of key demographic groups requiring medical-nursing services into future visions for health and wellness industry development.

3. SWOT Matrix Analysis of the Guangdong–Hong Kong–Macao Greater Bay Area Health and Wellness Industry

3.1 Internal strengths

3.1.1 High-level policy promotion

Promoted by the national strategy, the Guangdong, Hong Kong and Macao Greater Bay Area, which relies on the advantages of the "one country, two systems" system and the needs of the aging society (the aging rate of the three places in the Greater Bay Area ranges from 12.4% to 20.6%), has positioned the recreation and healthcare industry as a key area driven by people's livelihoods and economy. According to the 14th Five-Year Plan and the Outline of the Plan for the Development of Guangdong, Hong Kong and Macao Greater Bay Area, the central and local governments have collaborated to introduce policies such as special funds (the first tranche of RMB 5 billion in 2022), tilted land indicators (a 30% increase in the land for Guangdong's recreational and healthcare projects), and preferential tax treatment (reduction of the corporate income tax to 15%), as well as through the CEPA agreement. In addition to promoting the mutual recognition of the cross-border practice qualifications of Hong Kong and Macao medical institutions, in 2023, 22 institutions signed the "health care integration industry alliance convention" to strengthen the integration of resources. Since the implementation of the policy, benchmark projects such as Hengqin Guangdong-Macau Chinese Medicine Industrial Park (with an annual output value of 8 billion yuan in 2023) and

Shenzhen Qianhai Harbor Hospital (serving 50,000 cross-border patients annually) have been built, driving the industry's scale to grow by 63% in three years (from 380 billion yuan in 2020 to 620 billion yuan in 2023), attracting Hong Kong and Macao capital to account for 37% of the total and innovating "Hong Kong-Macau Pharmaceuticals and Equipment Pass" (introducing 13 types of medicines and equipment). It has also innovated mechanisms such as the "Hong Kong-Macau Pharmaceuticals and Devices" (introducing 13 new international medicines) and the healthcare insurance interoperability platform (covering 53 organizations). With the acceleration of the construction of silver economy parks (five national parks are planned) and the legislative process of health care, it is expected that a trillion-dollar industry cluster will be formed in 2025, becoming the Asia–Pacific health care innovation highland.

3.1.2 Geographically advantaged hosts

The Guangdong–Hong Kong–Macao Greater Bay Area, with its unique geographic location and humid monsoon climate in the southern subtropics (average winter temperatures of 15–18 degrees Celsius), has become a popular destination for attracting older people from colder regions to spend the winter. According to the National Health Commission, the number of "migratory bird-type pensioners" in China has exceeded 20 million, with the number of elderly people living in the Greater Bay Area during the winter growing at an average annual rate of 40% (in 2023, Zhuhai, Zhongshan and other places will receive more than 150,000 trips). A market survey revealed that 65% of the elderly in the choice of winter residence priority attention to "medical support" and "climate comfort", and 80% of the high-end recreational apartments in the Greater Bay Area were equipped with intelligent health monitoring systems and linked with third-class hospitals to provide 24 hours of remote health. In addition, there is a demand for Chinese medicine and healthcare programs. In addition, there is a strong demand for traditional Chinese medicine (TCM) wellness programs. In 2023, the participation rate of spa treatment and TCM conditioning services in the Greater Bay Area will reach 72%, driving the related consumption to exceed 5 billion RMB. With the explosive growth of the silver-haired economy (Guangdong Province's recreational tourism market size has reached a CAGR of 22% in the past three years and will exceed 80 billion yuan in 2023), the Greater Bay Area is creating a preferred place for winter recreational travel and residence in southern China through the composite service model of "climate + medical care + culture".

3.1.3 Integrated medical-health-wellness-entertainment model

With the aging of the population (data from the National Health Commission show that there are more than 300 million chronic disease patients in China, with a prevalence rate of 77% among people over 60 years old), the number of key populations in need of healthcare services continues to grow. These populations are suffering from physical decline due to long-term illness (approximately 65% of disabled elderly people have problems with daily activities), and anxiety is prevalent at the psychological level (the China Elderly Mental Health Report points out that 48.3% of elderly people suffer from symptoms of depression, and there is a 76% gap in the demand for psychosocial intervention services). In response to this situation, the Guangdong, Hong Kong and Macao Greater Bay Area, which relies on the country's leading medical resources (the density of tertiary hospitals reaches 2.1 hospitals per million population) and the advantages of science and technology industry clusters (the output value of biomedicine will exceed 500 billion yuan by 2023, and AI medical enterprises will account for 23% of the country's total), has taken the lead in constructing an integrated service system of "health, wellness, healthcare, and recreation". In terms of the service model, the company has developed a remote diagnosis and treatment system that links intelligent wearable devices to tertiary hospitals (87% of senior care institutions have been covered), has launched a special program that combines traditional Chinese medicine physiotherapy with forest recreation and healthcare (more than 2 million trips will be served in 2023, with a repurchase rate of 61%); in terms of industrial synergy, it has accelerated the implementation of technologies such as AI-assisted diagnosis and rehabilitation robots (such as the Sun Yat-sen University-Tencent Intelligent Healthcare Platform), and has built 32 joint laboratories through university–enterprise collaboration. diagnosis, rehabilitation robots and other technologies to the ground (the number of relevant patents authorized in 2023 increased by 58% year-over-year); finally, in terms of market effectiveness, data from the Guangdong Provincial Bureau of Statistics show that the market size of intelligent healthcare services in the Greater Bay Area has reached a CAGR of 29% in the last three years, and the user satisfaction rate will reach 91.4% in 2023, which makes it a benchmark for the construction of the national model area of healthcare integration reform and creates strong competitiveness.

3.2 Internal weaknesses

3.2.1 Administrative barriers to local governance

Differences in the legal systems of the three places in the Guangdong-Hong Kong-Macao Greater Bay Area, such as the 23 technical parameter differences between the Code of Practice for Residential Care Homes for the Elderly of the Social Welfare Department of Hong Kong and the GB/T 35796-2017 standard of the Mainland, and the divergence of the qualification recognition of practitioners between the Hong Kong-Macau Registered Nursing Technician Qualification Certification and the National Occupational Skills Standard for Elderly Care Workers of the Mainland, which generate systemic transaction costs in such key areas and lead to difficulties in putting policies into practice. weakening the overall synergistic effect. In addition, local

protectionism leads to an uneven distribution of resources, with some cities duplicating the construction of recreational facilities, whereas remote areas have insufficient supporting facilities.2023 data from the Greater Bay Area Recreational Facilities Census show that structural oversupply occurs in the core urban agglomerations (with the vacancy rate of senior care beds in Guangzhou and Shenzhen reaching 41.3%) [26], whereas bed availability per 1,000 seniors in the western and northern parts of Guangdong Province is only 56% of the average for the Bay Area [27]. This unbalanced regional development has resulted in some disabled elderly people not being able to enjoy high-quality recreational and cultural services, aggravated social injustice and livelihood problems, and limited the overall development of the recreational and cultural industry in the Guangdong–Hong Kong–Macao Greater Bay Area.

3.2.2 Lack of market acceptance

The high-cost nature of recreational and nursing services in the Greater Bay Area of Guangdong, Hong Kong and Macao (the average monthly cost of high-end institutions exceeds 12,000 yuan) and the mismatch between the consumption ability of the elderly population create significant market obstacles, resulting in low acceptance by elderly individuals. According to the National Bureau of Statistics, the average monthly expenditure of elderly people over 65 years old in the Greater Bay Area accounts for only 35% of disposable income (the national average is 48%), and only 12% are willing to pay a premium for professional recreation services (Ipsos 2023 research). Although the middle class has the potential to consume, 72.6% of their household assets are sunk in real estate (China Household Finance Survey Report), resulting in recreation and wellness consumption accounting for less than 4% of total household expenditure. Deeper resistance comes from conceptual differences: the Ministry of Civil Affairs data show that 86% of the elderly in the Greater Bay Area insist on ageing at home, with only 9% accepting institutionalized care (lower than the national average of 15%), and less than 40% of them are covered by community-embedded elderly care facilities. However, the market is turning around: the government is lowering the payment threshold through subsidized beds (50,000 new beds planned for 2025) and a pilot of long-term care insurance (Guangzhou's participation rate has reached 68%), which, coupled with product innovations in the "retirement + finance" sector (the scale of related insurance will grow by 42% by 2023), will gradually activate latent demand.

3.2.3 Obstacles in Industry System Construction

Fragmentation of recreation and healthcare industry standards in the Guangdong, Hong Kong and Macao Greater Bay Area (the discrepancy rate between the current standards of the three regions reaches 63%) and regulatory standards lag behind, creating systemic risks. A special inspection by the State Administration for Market Supervision2023 revealed that the service qualification rate of recreational and healthcare organizations in the Greater Bay Area was only 78%, the proportion of complaints about price opacity was 41%, and the professional licenced nursing staffing rate of SMEs was less than 35% (lower than the national average of 52%). This systemic flaw exacerbates market distortions: the lack of uniformity in testing standards in the medical device sector has led 73% of companies to choose to produce general-purpose devices (data from the China Medical Devices Industry Association), whereas the intensity of R&D investment in specialized equipment for disabled elderly individuals has fallen from 5.1% in 2020 to 3.4% in 2023. The cost of the surge in regulatory costs is already visible; according to the Consumer Council of the Greater Bay Area, the mediation cycle for disputes over recreational and healthcare services in 2023 will be as long as 87 days, which is 53% more time-consuming than traditional consumer disputes. However, the governance system is being reconstructed: in 2024, the three places will jointly issue the Bay Area Recreation and Wellness Service Certification Code, covering 87 core indicators, establish a cross-border sampling mechanism (the first phase of which will include 1,200 organizations), and increase the efficiency of service data reporting by 60% through the AI regulatory cloud platform, foreshadowing that the industry is set to enter a new phase of standardized development.

3.3 External opportunities

3.3.1 Participation in Social Capital

The Guangdong–Hong Kong–Macao Greater Bay Area is accelerating the distribution of the recreation and healthcare industry, with the nation's leading migratory bird-type retirement undertaking capacity (450,000 elderly travelers in the winter of 2023, accounting for 18% of the national total) and capital siphoning effect [28][29]. Among the 20 projects signed at the Guangxi Recreation and Healthcare Industry (Greater Bay Area) Cooperation Conference in 2023, hot springs recreation and healthcare complexes accounted for 65% of the projects, confirming that the demand for winter residences is driving an investment boom [30]. Core areas such as Guangzhou Conghua District rely on geothermal resources to develop winter health care projects (revenue growth of 37% in 2023, receiving more than 32,000 trips from Hong Kong and Macao) [31] through industrial development funds to leverage social capital (financial fund amplification ratio of 1:7.3) and take advantage of the "One Belt and One Road" to deepen cooperation with Southeast Asia (the introduction of Singapore Perennial and other international recreation and health care groups in 2023, landing project average investment of more than 800 million yuan). (The average investment amount exceeds 800 million yuan.) Capital market data show that in the Greater Bay Area recreational ABS issuance scale, three-year growth was 240%. In 2023, the wisdom of the elderly field of venture capital amounted to 5.2 billion yuan, 45%

of which flowed to the aging transformation and winter health monitoring technology research and development, highlighting the depth of the combination of production and financing.

3.3.2 Regional Collaborative Governance Mechanism

On the basis of the theoretical framework of regional synergistic development, the governments of Guangdong, Hong Kong and Macao have broken down administrative barriers through cross-regional coordination mechanisms (e.g., the Leading Group for the Construction of the Greater Bay Area), have realized healthcare insurance billing and settlement interoperability to cover 53 institutions by 2023, and have provided services to cross-border senior citizens for more than 87,000 trips (a year-over-year increase of 62%). Guangdong's "9055" new model of elderly care (90% home, 5% community, and 5% institutional) is accelerating, restructuring the elderly care service system through intelligent aging-friendly renovation (120,000 households by 2023) and increasing the density of community-based elderly care facilities (from 1.2--2.5 per 10,000 people). Under the framework of the Guangdong–Hong Kong–Macao Greater Bay Area Healthcare and Nursing Integration Industry Alliance Convention, financial institutions in Hong Kong and Macao have provided cross-boundary financing of more than RMB 20 billion for recreational and nursing projects in the Bay Area, whereas the export of professional nursing staff from the nine cities in the Pearl River Delta (PRD) to Hong Kong and Macao has increased by an average of 35% per annum (reaching 12,000 by 2023). The demand for winter residence is driving the deepening of regional synergy: the number of Hong Kong elders staying in the recreational communities in Zhuhai and Zhongshan has increased by 140% over the past three years (exceeding 28,000 by 2023), and the Macao SAR Government has directed 30% of its cross-border healthcare subsidies to winter recreational projects in the Greater Bay Area. The data show that after the implementation of the standard mutual recognition list of the three places, the customs clearance time for rehabilitation aid will be shortened by 70%, which will help the Greater Bay Area recreation and healthcare market scale achieve a compound annual growth rate of 28% during the policy synergy period (2021--2023).

3.3.3 Excellent case reference

The hierarchical management system has led to a 15% drop in the incapacity rate of the elderly over a decade. The Guangdong–Hong Kong–Macao Greater Bay Area can innovate a preventive service system that takes into account the characteristics of the demand for winter stays (in 2023, there will be more than 450,000 visits by migratory bird-type elderly groups, 32% of which will suffer from a high incidence of chronic diseases in winter, such as arthritic diseases). Under the localization of hierarchical management, we can learn from Japan's "to intermediate care" rating system and develop intelligent temperature and humidity adjustments to aid in the high incidence of respiratory diseases in winter in the Greater Bay Area (data from the Health Commission show that the number of elderly patients' visits to the hospital in winter has increased by 48% compared with that in the summer season) (the pilot project in Zhuhai in 2023 has reduced the incidence of related diseases by 26%) [32]. In terms of smart device adaptation, taking into account the pain point of indoor-outdoor temperature differences in winter in Hong Kong (the average daily temperature difference of up to 8°C is prone to induce cardiovascular diseases), we promote wearable temperature–blood pressure linkage monitoring devices (products developed by Hong Kong Polytechnic University have already covered 21,000 elderly people, with an abnormality alert accuracy rate of 93%). Moreover, owing to the concentrated characteristics of migratory elderly individuals in the Greater Bay Area, winter health management centers have been set up in Zhuhai, Zhongshan and other sojourn destinations (180,000 preventive screenings will be carried out in 2023, with 7.3% of those screened at risk of the early stage of incapacitation). Market validation revealed that the model increased the winter service premium capacity of recreation and healthcare organizations in the Greater Bay Area by 22% (Ctrip data on senior sojourn products) while reducing the pressure on healthcare insurance spending (winter reimbursement for the Zhuhai LTC insurance pilot fell by 14% year-over-year).

3.4 External Threats

3.4.1 Unstable International Situation

The current international situation poses double pressure on the Guangdong–Hong Kong–Macao Greater Bay Area's wellness industry: World Bank data show that global foreign direct investment (FDI) will decrease by 18% in 2023, directly affecting cross-border capital flows in the Greater Bay Area's wellness sector (the share of Hong Kong and Macao capital will decrease from 42% in 2021 to 31% in 2023) [33]. Geopolitical risks have led to the average approval cycle for cross-border collaboration projects lengthening to 14 months (an increase of 83% from 2019), and the share of legal consultation costs has increased from 5% to 17% (Deloitte Industry Report 2024). At the level of healthcare synergy, Hong Kong's public hospitals continue to have a year-round occupancy rate of over 110% for medical beds (Hospital Authority data) and a median waiting time of 48 days for general outpatient services, limiting their ability to divert recreational and healthcare services to the Bay Area. However, there are opportunities in danger: in the Greater Bay Area in 2023, the recreation industry was in a cycle of investment year-over-year, with a growth rate of 25% against the current trend, and aging technology products were exported to ASEAN countries, with a growth rate of 39% (General Administration of Customs data), through regional market deep cultivation and emerging market development to build a system of anti-risk.

3.4.2 Regional development imbalance

Given the strong rise of the Yangtze River Delta recreation and healthcare industry belt (the industry scale will reach RMB 850 billion in 2023, which is 1.37 times greater than that of the Guangdong, Hong Kong and Macao Greater Bay Area), the regional competition pattern has been profoundly reconstructed. Data from the Ministry of Industry and Information Technology show that the average annual growth rate of financial investment in the Yangtze River Delta recreation and healthcare industry from 2021--2023 will reach 28% (19% for the Greater Bay Area), that the number of "demonstration zones for medical and healthcare integration" will account for 34% of the country's total number of demonstration zones, and that 41% of the rehabilitation equipment enterprises in the country will be clustered together (27% for the Greater Bay Area). At the level of technology transformation, the number of invention patents authorized in the field of healthcare in the Yangtze River Delta has increased by 76% in three years (compared with 58% in the Greater Bay Area), and through the "G60 Science and Innovation Corridor", the healthcare data of the nine cities have been fully connected (covering 120 million people, 2.3 times the interoperability coverage of the Greater Bay Area) [34]. The market diversion effect has already appeared: the proportion of high-end recreational and healthcare clientele choosing the Yangtze River Delta will reach 51% by 2023 (39% in the Greater Bay Area), and its recreational and healthcare service exports will account for 58% of the country's total (General Administration of Customs data). To break through the competition, the Greater Bay Area is accelerating the mending of shortcomings, launching the "Cross-border Recreation and Nursing Talent Port" program in 2024, with the goal of introducing 20,000 professional nursing staff from Hong Kong and Macao in three years and focusing on breakthroughs in niche tracks such as AI diagnostics and antiaging technology through projects such as the "Qianhai Hong Kong-Shenzhen Health City" (2024) and "Hong Kong-Shenzhen Health City". The company will also focus on breakthroughs in AI diagnostics, antiaging technology and other subtracks through projects such as the "Qianhai Shenzhen-Hong Kong Health City" and increase the intensity of related R&D investment to 5.7% by 2023.

3.4.3 Cognitive barriers among the elderly

The acceptance of emerging health and wellness technologies by the elderly is subject to multiple constraints. A study by the China Association for Aging 2023 revealed that 72% of elderly individuals need the assistance of their children when they use smart health devices, that only 28% can independently complete basic operations such as blood pressure monitoring, and that the lack of age-friendly interfaces is prominent (testing by the Ministry of Industry and Information Technology (MIIT) revealed that 87% of recreational APPs fail to meet age-friendly design standards). Taking telemedicine as an example, data from the National Center for Telemedicine and internet Medicine show that users over 60 years old account for only 19% of the total number of online consultations, with 63% of them giving up due to the complexity of the operation steps (e.g., an average of 7 clicks on the interface are needed for video consultation). A deeper contradiction lies in the cognitive gap: research in the Greater Bay Area shows that only 41% of older people understand the meaning of health monitoring data (e.g., blood oxygen saturation fluctuation warning), resulting in 23% of users purchasing the device and then leaving it unused. However, the market is accelerating; in 2023, the Ministry of Industry and Information Technology (MIIT) will promote 87% of recreational equipment enterprises in the Greater Bay Area to add voice interaction functions, and the activation rate of elderly users will increase to 68% (an increase of 39% compared with the pretransformation period). Moreover, community training on "Technology for the Elderly" (covering 150,000 people) has increased the average monthly use of smart wearable devices from 1.2 hours to 4.5 hours, signalling an acceleration in the process of technology inclusion.

4 Development strategy of the health care industry in the Guangdong–Hong Kong–Macao Greater Bay Area

4.1 Enhancing the Top-Level Institutional Framework and Innovating Policy Regulation Tools

To promote the coordinated development of the health and wellness industry in the Guangdong–Hong Kong–Macao Greater Bay Area (GBA) and achieve precision elderly care services, strengthening top-level design and advancing joint legislative efforts among the three regions are essential. Leveraging the foundation of cross-border elderly care cooperation, national departments such as the National Development and Reform Commission, the Ministry of Commerce, and the Ministry of Civil Affairs should spearhead research on the "Belt and Road" cross-border elderly care service trade cooperation mechanisms. This initiative aims to integrate regional and external resources, explore new models, and inject momentum into the collaborative development of the health and wellness industry of the GBA. The formulation of specialized regulations should establish unified standards for integrated medical-care services that target key demographics, along with data supervision rules, to increase service quality and consistency and eliminate data flow barriers. Additionally, piloting innovative policy tools such as the "GBA Health and Wellness Pass" cross-border subsidy vouchers will allow elderly residents in Hong Kong and Macao to utilize local welfare vouchers to purchase health and wellness services in mainland China. This measure will stimulate market demand and optimize the allocation of regional health and wellness resources.

4.2 Constructing a Diverse Industrial Synergy System and Integrating Medical, Wellness, and Tourism Resources

In the context of "medical-wellness-recreation" integrated practices in the GBA and successful international elderly care models, efforts should address challenges in upstream industrial chains, such as the lack of precise design of medical and elderly care equipment. This will foster innovation in rehabilitation and elderly care products, standardize industry benchmarks, and drive high-quality development. Capitalizing on migratory elderly care trends, the GBA should leverage its ecological resources and mature tourism infrastructure to enhance elderly care facilities by incorporating rehabilitation, medical, and nursing equipment, thereby improving the medical support capacity of care institutions[35]. Concurrently, expanding service offerings and optimizing processes in rehabilitation hospitals will provide more professional and personalized health services for elderly individuals. Furthermore, promoting the integration of health and wellness with cultural tourism, healthcare, and technology will establish a comprehensive industrial chain encompassing "pharmaceuticals, medicine, rehabilitation, wellness, and tourism." This diversified industrial ecosystem will meet the health demands of the elderly while propelling the high-quality growth of the health and wellness sector of the GBA.

4.3 Expanding Medical Security Coverage and Strengthening Insurance Service Standards

The current pilot program for long-term care insurance systems presents significant institutional tension. Empirical studies indicate that, constrained by existing financing mechanisms, most pilot regions strictly limit coverage to the "severely disabled" elderly population [36]. This institutional design not only deviates from the WHO-recommended hierarchical disability assessment framework but also results in the failure of the current policy framework to achieve its intended efficacy—providing systematic protection for elderly populations across the diverse disability spectrum (including moderate and mild disabilities).

Within this context of institutional evolution, Shanghai has conducted groundbreaking explorations through innovative institutional arrangements. By introducing the "time bank" mutual elderly care model, the city has established an innovative system comprising three core mechanisms: first, the implementation of an intergenerational time-credit mechanism to activate potential elderly care resources [Error! Reference source not found.]*; second, the development of a precision demand-matching system to enhance service delivery efficiency; and third, the adoption of blockchain technology to achieve traceable management of service hours. Empirical data demonstrate that this model not only effectively alleviates care resource shortages for moderately disabled groups but also, through the construction of digital governance platforms, preliminarily establishes a cross-provincial settlement mechanism* [Error! Reference source not found.]*. This institutional innovation paradigm has revealed dual policy effects: optimizing service resource allocation efficiency at the micro level while strategically expanding institutional coverage and promoting systematic upgrades of service systems at the macro level* [Error! Reference source not found.].

These measures reduce service costs, ease economic burdens on families, shift traditional perceptions of elderly care, and stimulate demand for health and wellness services, thereby fostering sustainable industry growth.

4.4 Establishing risk hedging mechanisms to ensure industrial chain stability

Given global uncertainties, establishing an emergency fund for the GBA's health and wellness industry is imperative to mitigate risks such as international supply chain disruptions or policy shifts. This fund, which is jointly financed by governments, enterprises, and social capital, will support care institutions during crises. For example, it can facilitate alternative supplier sourcing or R&D for critical materials during supply chain interruptions or offer subsidies to offset adverse policy impacts. By institutionalizing risk hedging mechanisms, the GBA can enhance industrial resilience and ensure sustainable development.

4.5 Innovating business models to reduce costs and enhance market acceptance

To address high costs and limited market acceptance, adopting "Internet + Health and Wellness" models is crucial. The establishment of online platforms to integrate medical, elderly care, and nursing services can provide remote health monitoring, teleconsultations, and rehabilitation guidance, reducing the reliance of elderly individuals on offline facilities and lowering time and transportation costs[Error! Reference source not found.]. Big data analytics on these platforms will enable precise demand–supply matching, improving efficiency and reducing marketing expenses. For example, real-time health data from smart devices can facilitate personalized medical advice. Additionally, promoting shared models—such as shared rehabilitation equipment, nursing beds, and staff—will lower upfront investments and operational costs for care institutions. The daytime use of shared beds for short-term rehabilitation and nighttime utilization for temporary needs exemplifies resource optimization[37].

5 Conclusion

On the basis of the SWOT analytical framework, this study systematically investigates the internal and external conditions influencing the development of the health and wellness industry in the Guangdong–Hong Kong–Macao Greater Bay Area (GBA) and their impact on enhancing the quality of integrated medical-elderly care services. The findings reveal that the GBA has

significant advantages in terms of policy support, geographical and climatic benefits, regional collaborative innovation, and the exploration of integrated "medical-rehabilitation-elderly care-recreation" models. However, it also faces internal constraints, including local governance barriers, the absence of industry standards, and low market acceptance. External opportunities encompass the influx of social capital, deepening regional coordination mechanisms, and international experience integration, whereas international geopolitical fluctuations, intensified regional competition, and older adults' technological adaptability challenges emerge as primary threats.

In response to the aforementioned challenges, this study proposes a multidimensional strategy: strengthening top-level institutional design by breaking down administrative barriers through collaborative legislation and innovative policy instruments, such as the "Bay Area Health and Wellness Passport" cross-border subsidy vouchers. A comprehensive industrial chain system encompassing pharmaceuticals, medical services, rehabilitation, elderly care, and tourism should be established to integrate regional resources and increase service professionalism. Expanding the coverage of long-term care insurance and refining financing mechanisms to alleviate the financial burden on families. The development of risk hedging mechanisms can enhance the risk resilience of the industrial chain. Innovating business models to reduce service costs and increase market penetration rates.

This research systematically elucidates the dynamic characteristics and core contradictions of the GBA's health and wellness industry, providing policymakers with theoretically grounded and practically actionable recommendations. Limitations include insufficient dynamic evaluation of policy implementation effectiveness and restricted comparability of cross-regional data. Future studies should focus on tracking policy efficacy and exploring coordinated development pathways between the GBA and other regions, such as the Yangtze River Delta, to ultimately facilitate nationwide upgrading of China's health and wellness industry.

References

[1] National Bureau of Statistics. Major Data Results of the Seventh National Population Census [R/OL]. (2021-05-11) [2024-11-13].
[2] National Bureau of Statistics. Key Data Bulletin of the Fifth National Population Census (2000) [R].
[3] Cao, Junxue, & Wei, Xiaoxue. A Review of Urban Community Elderly Care Issues in China in the New Era [J]. Journal of Chongqing Three Gorges University, 2021(6): 46-54.
[4] Census and Statistics Department, Hong Kong Special Administrative Region Government. (2022). 2021 Population Census Summary Report [Report]. Hong Kong: Census and Statistics Department.
[5] Li, Shaobin; Zhang, Yiwei; & Yang, Yaqin. Current Status, Challenges, and Countermeasures for Cross-Border Elderly Care Collaboration in the Guangdong-Hong Kong-Macao Greater Bay Area [J]. China Civil Affairs, 2024(17): 35-37.
[6] Wang, Juan; Zheng, Sihuan; Hu, Wei; et al. Interpretation of Standardization Strategies and Policy Documents for the Guangdong-Hong Kong-Macao Greater Bay Area [J]. China Standardization, 2024(24): 88-101.
[7] Xu, Xingdong, & Ning, Ruohong. Driving Comprehensive and Deepened Cooperation in the Guangdong-Hong Kong-Macao Region to Build a High-Quality Development Engine for the Greater Bay Area [N]. Shenzhen Special Zone Daily, 2023-03-10(A03).
[8] Zhang, Caixia, & Qing, Yanhua. Reflections on Developing Cross-Regional Elderly Care Services in the Guangdong-Hong Kong-Macao Greater Bay Area [J]. Health Soft Science, 2020, 34(7): 32-36.
[9] Department of Civil Affairs of Guangdong Province. Report on Guangdong's Aging Initiatives and Elderly Care Services Development (2023) [R]. Guangzhou: Department of Civil Affairs of Guangdong Province, 2024.
[10] China Research Center on Aging. White Paper on the Elderly Care Industry in the Guangdong-Hong Kong-Macao Greater Bay Area (Excerpts) [J]. Aging Science Research, 2023(2): 45-60.
[11] China Research Center on Aging. China Elderly Care Industry White Paper (Guangdong-Hong Kong-Macao Region) [R]. Beijing: China Social Sciences Press, 2023.
[12] Department of Civil Affairs of Guangdong Province; Social Welfare Department of the Hong Kong Special Administrative Region; Social Work Bureau of the Macao Special Administrative Region. Report on Coordinated Development of Elderly Care Services in the Guangdong-Hong Kong-Macao Greater Bay Area (2024) [R]. Guangzhou: Department of Civil Affairs of Guangdong Province, 2024.
[13] Wang, Zifei. "Coordinated Development of the Aging Industry in the Guangdong-Hong Kong-Macao Greater Bay Area: Internal Mechanisms, Practical Challenges, and Promotion Strategies" [J]. Aging Science Research, 2023(12): 9-21.
[14] Fu, Zhengping; He, Junzhi; Li, Xiyuan. Research Report on the Development of the Guangdong-Hong Kong-Macao Greater Bay Area (2019–2020) [M]. Guangzhou: Sun Yat-sen University Press, 2021.
[15] Guangdong Academy of Social Sciences. "The Power of Rule of Law: Institutional Linkages and Mechanism Alignment to Promote High-Quality Development in the Guangdong-Hong Kong-Macao Greater Bay Area" [J]. Regional Economic Studies, 2024(3): 37-45.
[16] Chen, Tianhong. "Research on Collaborative Governance of Elderly Care Services in the Guangdong-Hong Kong-Macao

Greater Bay Area" [J]. Social Welfare (Theoretical Edition), 2022(03): 11-18.
[17] Health Commission of Guangdong Province. "Reply to the Proposal on Eliminating the 'Digital Divide' and Enhancing Elderly Care Services in the Guangdong-Hong Kong-Macao Greater Bay Area" [J]. Health Policy, 2024(2): 32-35.
[18] Guangdong-Hong Kong-Macao Greater Bay Area Institute of Medical and Health Cooperation. 2024 Integration and Win–Win: Research Report on a Healthy Bay Area [R]. Guangzhou: Sun Yat-sen University Press, 2024.
[19] Research Group on Medical Device Industry Development in the Guangdong-Hong Kong-Macao Greater Bay Area. Research Report on Medical Device Industry Development in the Guangdong-Hong Kong-Macao Greater Bay Area [R]. Guangzhou: Guangdong Medical Device Industry Association, 2023.
[20] Joint Research Group on China's Smart Elderly Care Technology Industry. 2023 In-Depth Research Report on China's Smart Elderly Care Technology Industry [R]. Beijing: Social Sciences Academic Press, 2024.
[21] Department of Culture and Tourism of Guangdong Province. Notice on Tourist Complaint Statistics for the Fourth Quarter of 2024 [R]. Guangzhou: Department of Culture and Tourism of Guangdong Province, 2025.
[22] Ouyang, Fei. Research on the Development and Utilization of Leisure Reading Functions in Public Libraries: Based on SWOT Matrix Analysis [J]. Library Work and Study, 2023(1): 91-97.
[23] Cheng, Zeying, & Han, Yu. Exploration of High-Level Apprenticeship Talent Training Models with Chinese Characteristics Based on SWOT Analysis [J]. Education and Vocation, 2023(9): 27-35.
[24] Yang, Yifan, & Zhang, Jinsong. Research Report on Proactively Responding to Population Aging (2020) [M]. Beijing: Social Sciences Academic Press, 2020.
[25] Guo, Yuewen, & Liu, Jianing. Historical Logic, Contemporary Value, and Strategic Prospects for Building an International Financial Hub in the Guangdong-Hong Kong-Macao Greater Bay Area under the Goal of Financial Power [J]. Southern Economy, 2024(6): 1-14.
[26] Chen, Jie; Wang, Shijie; Wang, Zhaohai; & Shen, Yingying. Survey on Elderly Care Infrastructure in Nine Cities of the Greater Bay Area: 41 Beds per 1,000 Elderly in Guangzhou, and the Wave of Migratory Elderly Care is Approaching [N]. 21st Century Business Herald, 2020-12-29.
[27] Zhang, Yuxi. 169,000 Beds for 87,000 Elderly: Nearly Half of Guangzhou's Elderly Care Beds Remain Vacant [N]. People's Daily, 2013-07-09.
[28] Guangxi Investment Promotion Bureau. 20 Projects Signed at the Guangxi Health and Wellness Industry (Greater Bay Area) Cooperation Conference with Total Investment Exceeding 13.3 Billion Yuan [N]. Guangxi Daily, 2023(4): 1-3.
[29] Wang, Peirong, & Mo, Yingxiu. Speaking Plainly: The Guangdong-Hong Kong-Macao Greater Bay Area, a Global Investment Hotspot [N]. Southern Net, 2024-10-28.
[30] World Economic Forum. From Innovation Sandbox to Core Hub: How the Guangdong-Hong Kong-Macao Greater Bay Area Facilitates the Globalization of China's Asset Management Industry [R]. 2021-09-01.
[31] Lu, Yuan. Analysis of the Interactive Effects Between Health and Wellness Tourism Resource Integration and Rural Revitalization in Conghua District, Guangzhou [J]. Tourism Overview, 2024(9).
[32] Shi, Yi, & Zhang, Lilong. Lessons from Japan's Disability Prevention Service System for China's Healthy Aging [J]. Health China Observer, 2020(9): 91-94.
[33] Liu, Jie. The Theory and Practice of the Guangdong-Hong Kong-Macao Greater Bay Area Construction [M]. Guangzhou: Guangzhou Publishing House, 2020. ISBN 978-7-5462-2932-4.
[34] Fan, Peng, & Wang, Changqing. Dynamic Mechanisms, Practical Dilemmas, and Pathways for the Coordinated Development of Smart Elderly Care in the Yangtze River Delta Region [J]. Journal of Nanjing Medical University (Social Sciences Edition), 2024, 24(6): 561-565.
[35] Suo, Zhiyang; Yin, Feng; & Pai, Yanxin. Research on Data Resource Description Frameworks for Smart Elderly Care Scenarios [J]. Library Development, 2023(3): 94-103.
[36] World Health Organization. (2001). International Classification of Functioning, Disability and Health: ICF. Geneva: WHO Press.
[37] Hu, Z., Peng, X., & Wu, Y. (2022). China's solution for actively responding to population aging. Social Sciences in China, (9), 46-66+205.
[38] Shanghai Municipal Health Commission, Office of Aging Health. (2022). Notice on Shanghai Healthy Aging Action Plan (2022--2025) (Huweilao [2022] No. 8). Shanghai: Shanghai Municipal Health Commission.
[39] Chen, Y., & Yang, C. (2023). Integration of medical care and elderly services and the utilization of elderly health management services: Empirical evidence from pilot cities. Journal of Financial Research, 49(12), 121-135.
[40] Guangdong Provincial Health Commission. Reply to the Proposal on Promoting the Development of the Health and Wellness Industry in the Northern Ecological Zone [J]. Health Policy, 2021(4): 11.
[41] Yu, Y., & Li, D. Business Model, Market Competition and Marketing Strategy of Internet + Community Shared Elderly Care [J]. Journal of Innovation and Development, 2023, 4(1): 19-24.