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A Study on the Impact of the Digital Economy on Elderly Household Consumption

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Abstract. As a key driver of silver economy development, the digital economy exerts a profound influence on unlocking the consumption potential of older adults. Drawing upon data from the 2020 China Longitudinal Study of Aging Society (CLASS), this study systematically examined the causal mechanisms through which the digital economy impacts elderly consumption. This is achieved by constructing a comprehensive indicator system for digital economic development. Findings reveal that the digital economy's impact on elderly consumption exhibits structural variations: its promotional effect is pronounced in two-person households and rural areas, yet a digital skills threshold effect persists. Household size and income level remain core drivers of elderly consumption. This research provides evidence for formulating differentiated digital ageing-friendly policies, offering significant insights for advancing the high-quality development of the silver economy.

Keywords: digital economy, silver economy, elderly consumption, ageing-friendly policies

1. Introduction

Since China's population ageing has intensified, the silver economy has become a crucial strategy to address this challenge and drive high-quality economic development [1]. In 2024, the State Council issued the "Opinions on Developing the Silver Economy and Enhancing the Well-being of Older Persons", emphasizing the implementation of a national strategy to actively respond to population ageing, improve the lives of older adults, and realize the people's aspirations for a better life [1]. Supported by policy guidance such as the Medium- and Long-Term Plan for Actively Responding to Population Aging and the Central Economic Work Conference's focus on expanding domestic demand, the silver economy is forming a comprehensive policy framework. Market mechanisms and technological advancements are also driving the sector's growth. By the end of 2024, people aged 60 and above accounted for 22.0% of the population, while those aged 65 and above reached 15.6%. Although ageing may bring challenges like labour shortages and social burdens, it also creates a growing consumer group with significant potential.

Under new development paradigm, the digital economy represents the primary economic form following agricultural and industrial economies. Compared to those economies, digital economy places greater emphasis on circulation and sharing of information, highlighting the role of data in economic activities, and driving the transformation and upgrading of economic structures, industrial patterns, and business models [2]. In the view of national policy direction, the digital economy

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become the focus of development. Since the 18th National Congress of the Communist Party of China, the Party Central Committee has attached great importance to developing the digital economy, elevating it to a national strategy. During the 13th Five-Year Plan period, China's digital economy grew from 22.6 trillion yuan to 39.2 trillion yuan, with its share of GDP rising from 30.3% to 38.6%. The 14th Five-Year Plan explicitly proposes to develop and strengthen China's strategic emerging industrial clusters, setting development targets for the end of the 14th Five-Year Plan period to increase the value-added contribution of strategic emerging industries to GDP to over 17% [3]. And the government issued documents such as the Implementation Outline of the Strategy for Building a Cyber Power and the Outline of the Digital Economy Development Strategy, aiming to deploy and promote the development of digital economy nationally. China's digital economy has achieved remarkable results, playing a vital role in supporting the fight against pandemic and restoring production and daily life [4]. The digital economy has injected new momentum into post-pandemic economy, emerging as the most innovative and far-reaching economic model in the current market. The concept of integrating the digital economy with the silver economy-using the former to stimulate the latter and drive economic growth-appears is highly promising.

Given the formidable consumption potential of the ageing population, how can the digital economy be harnessed to drive the silver economy, thereby ensuring sustainable socioeconomic development? How does the digital economy influence elderly consumption? Through what channels does it affect household spending among older adults? Are there variations in its impact on consumption across urban and rural elderly populations, those with different marital statuses, or households with varying numbers of cohabiting individuals? This paper addresses these questions, aiming to contribute to the healthier development of the silver economy.

2. Literature review

The digital economy is becoming a new engine for China's socioeconomic growth, driven by advancements in information technology and industrial transformation. This has led to the emergence of various digital economic empowerment models. Research on the topic is expanding, as seen in the CNKI database, where papers are widely distributed—reflecting its interdisciplinary nature and broad academic connections [5]. Aligned with China's realities, digital economy research focuses on areas like rural revitalization, digital inclusive finance, and digital transformation. In rural studies, spatial econometric models have been used to analyze how the digital economy supports agricultural development [6], with urban-rural integration identified as a key mechanism for boosting economic resilience [7]. In digital inclusive finance, the integration of technologies like big data has spurred growth, helping reduce household over-indebtedness [8] and promoting rural income growth [9]. Meanwhile, SMEs face challenges in digital transformation, including talent shortages and weak data governance [10]. Strengthening digital financial infrastructure is crucial to support their transformation and foster digital economic development [11].

Within this framework, the digital economy leverages next-generation information technologies as its medium, facilitating the rapid transmission of information and economic activities through networked platforms. Numerous sectors have consequently benefited, with the digital economy playing a significant role in industries such as tourism and sports. Extensive literature has explored the digital economy's impact across diverse domains. Most literature focuses on the driving force of the digital economy within various industries. In manufacturing, the transition from an industrial economy to a digital economy has yielded cost reductions and efficiency gains, optimizing the allocation of human capital [12]. Within the sports industry, the digital economy has enabled the deep integration of digital and intelligent technologies into the physical economy of sport, fostering

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the development of a modern sports industry system [13]. The cultural and tourism industry follows a similar trajectory. Taking Guizhou Province as an example, Guo examined the long-term interactive relationship between digital inclusive finance and tourism industry efficiency, demonstrating how the digital economy has resolved financing difficulties for certain cultural and tourism sectors [14]. In other respects, digital economic development policies have enhanced corporate investment efficiency, exerting profound impacts on common prosperity and industrial chains. Additionally, some literature examines the relationship between the digital economy and household consumption. These studies predominantly focus on aggregate household consumption. Ding, Wei, and others integrated the digital economy, household consumption, and industrial chains, concluding that the digital economy's impact on industrial chain resilience is transmitted through the pathway of per capita household consumption expenditure [15]. Drawing on micro-level survey data, it was found that the digital economy elevates household consumption levels through three channels: enhancing the convenience of online shopping, alleviating mobility constraints, and boosting entrepreneurial activity and non-agricultural employment [16].

Beyond the silver economy's core industries, growing scholarly attention is focused on the digital divide among the elderly. Huang and Yuan identify key challenges in integrating the digital and silver economies, such as slow innovation in age-friendly technology, imbalances in digital product supply and demand, and significant digital exclusion among older adults [17]. Chen and Chen further categorize these barriers into skill, psychological, and environmental gaps, suggesting strategic pathways for convergence [18]. Others, like Cao and Sui [19], as well as Du and Wang [20], analyze related predicaments or drivers—such as new productive forces—but often limit their approach to theoretical frameworks, lacking empirical support. In contrast, some studies incorporate data analysis, particularly on topics like old-age financial asset allocation and pension systems [21]. Yang and Sun evaluate urban digital economy development through infrastructure, industrial digitization, and digital industrialization to explore its ties with elderly consumption [22], while Li uses telecom and internet penetration rates as alternative metrics [23].

In summary, existing research may exhibit the following shortcomings: the variables studied require further refinement in both measurement and selection; most scholars' investigations into the mechanisms linking the digital economy to the silver economy remain confined to theoretical analysis; and the few empirical studies examining impact pathways have focused solely on the the old’s consumption patterns, neglecting other aspects of their daily lives beyond consumption.

3. Research hypotheses

3.1. Direct impact of the digital economy on elderly consumption

The relative income hypothesis posits that current absolute income levels do not influence consumption; rather, relative income levels are decisive. The 'demonstration effect’ and 'ratchet effect’ can influence individual consumption levels. The 'demonstration effect’ refers to the imitative and competitive nature of consumption. The ratchet effect indicates that once consumers' spending habits are established, they become irreversible [24]. Therefore, drawing upon classical consumption theory and employing a dynamic spatial panel model, it is concluded that the rise in per capita consumption levels among Chinese residents is influenced not only by sustained income levels but also by consumption habits and the 'demonstration effect’ [25]. In the digital age, individuals develop habits of relying on electronic devices for consumption. Through the 'demonstration effect’, they influence others, including the elderly. Particularly for seniors with limited mobility, the convenience of digital consumption channels can even replace traditional physical consumption

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scenarios, helping them overcome spatial constraints and proactively select desired products. Hence, the following hypotheses are proposed:

Hypothesis H1: The digital economy significantly accelerates the restructuring of elderly household consumption patterns, manifested in increased online consumption share and expansion of service-oriented consumption.

3.2. Indirect impact of the digital economy on elderly consumption

According to Franco Modigliani's life cycle theory, individuals arrange consumption and savings throughout their lives based on their life expectancy and total expected lifetime income to maximize lifetime consumption utility. Moreover, individuals across all age groups in China exhibit a propensity to save. Whether younger individuals with lower incomes, older individuals with higher incomes, or retirees, all demonstrate a strong desire to save [26]. Consequently, disposable income exerts a significant influence on Chinese residents' consumption patterns. According to Friedman's Theory of the Consumption Function, household income comprises two components: permanent income and temporary income. It is the permanent income portion that genuinely exerts a significant impact on consumption behavior, whereas temporary income exerts a relatively minor influence [27]. As pensions accumulate, the disposable income of the elderly steadily increases, leading to a rise in income available for consumption. Furthermore, the development of the digital economy can provide the ageing population with more consumption choices, thereby stimulating the consumption desires of the elderly. Therefore, the following hypothesis can be proposed:

Hypothesis H2: The digital economy stimulates consumption among the elderly by increasing household disposable income, thereby reducing their propensity or willingness to save.

3.3. The synergistic regulatory impact of social security on the silver economy

Refining the social security system is a crucial mechanism for addressing the impacts of population aging on household consumption [28], particularly when market mechanisms fail to counteract aging-induced consumption decline. By increasing social security spending, governments can reduce economic pressure on the elderly, improve income distribution, boost seniors' consumption confidence, and support sustainable economic growth. In the digital economy, older adults can be divided into two groups: a high-security group with comprehensive pensions, health coverage, and elderly care services, who show strong consumption capacity—especially in health, wellness, and cultural entertainment—and a low-security group facing financial strain and uncertainty due to insufficient social protection, who tend toward frugal consumption with high medical costs limiting other spending. The digital age widens this gap: the high-security group benefits from digital services such as online medical insurance and elderly care, while the low-security group, affected by the digital divide and limited resources, falls further behind in consumption access and quality.

Hypothesis H3: The level of social security positively moderates the promotional effect of the digital economy on elderly consumption.

4. Research design

4.1. Model specification

In examining the impact of digital economic development on elderly household consumption, this study employs elderly household consumption as the dependent variable and digital economic

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development level as the independent variable. Household head characteristics and household attributes are introduced as control variables. The foundational model is constructed as follows:

$$\ln Consumption = \alpha_0 + \alpha_1 Dig_i + \theta X_i + \varepsilon_i \quad (1)$$

Where: Consumption denotes elderly household consumption. Dig represents the level of digital economic development. X denotes control variables, i denotes households, and ε_i is the random disturbance term. The coefficient α_1 measures the impact of digital economic development on elderly household consumption, the coefficient θ measures the impact of multiple control variables on elderly household consumption, and α_0 represents the constant term.

To further validate the causal mechanism between the two variables, relevant mediating variables were introduced. Mediation effects were tested using Stata software. To ensure accuracy, Bootstrap tests were conducted based on stepwise regression. The mediation model was set as:

$$\ln Consumption = \alpha_0 + \alpha_1 Digi_i + \alpha_2 Mod_i + \theta X_i + \varepsilon_i \quad (2)$$

where Mod_i denotes digital skill level, primarily reflecting elderly individuals' proficiency in mobile phone usage. Other variables remain consistent with Model (1).

4.2. Data and variables

4.2.1. Data sources and processing

The data employed in this study are primarily micro-level. They are sourced from the 2020 China Longitudinal Aging Social Survey (CLASS) database. During data processing, individual missing values were addressed using the direct deletion method.

4.2.2. Variables and explanations

(1) Dependent Variable: Elderly Household Consumption (Consumption), primarily measured by the consumption level of elderly households. This study first selected individuals aged 60 and above (including cohabiting family members) from the CLASS database, then calculated their total expenditure over the preceding 12 months. This figure was log-transformed to measure elderly household consumption.

(2) Explanatory Variables: Digital Economy Development Level (Dig). Here data industrialization is employed as one dimension to gauge a city's digital economy development. Data industrialization is regarded as a dimension for measuring the development level of the urban digital economy, with indicators such as the weighting of industry employment and total telecommunications business volume often being used as benchmarks [29]. This study, however, places greater emphasis on the elderly and their households themselves. Consequently, this paper constructs a digital economy development indicator system based on five dimensions: whether elderly households have internet connectivity, whether they access the internet, the type of electronic devices used, their proficiency level, and their learning pathways. This framework measures the digital economy development level of the elderly population itself. This paper draws on the methodology of Qin, Li, and Liu [30], standardizing the panel data for the year 2020 before employing the entropy weight method to assign weights to the comprehensive indicators of digital economy development. Then the entropy weighting method was employed to assign weights to the composite indicators of digital economic development.

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(3) Controlling Variables

In the digital age, the consumption behavior of the elderly population is influenced not only by the macro-level development of the digital economy but also, inevitably, by the micro-level interplay of multiple dimensions including personal characteristics, family factors, and social environment. Consequently, this paper designs variables by selecting corresponding questions from the 2020 CLASS questionnaire at the individual, household, and societal levels. Key variables include: residential location type (rural areas assigned value 1, towns outside city/county urban centres assigned value 2, urban-rural fringe areas in city/county centres assigned value 3, city/county outskirts assigned value 4, city/county centres assigned value 5), number of household members sharing accommodation, individual annual income, and economic status (classified as poor, average, and good, assigned values 1, 2, and 3 respectively). Additionally, to mitigate heteroscedasticity, the individual annual total income variable was log-transformed.

(4) Descriptive Statistics

The sample covers 28 provinces with significant geographical dispersion. Gender distribution remains balanced and household size averages 2.7 persons. Both elderly household consumption and annual personal income show identical means and standard deviations, indicating parallel distribution patterns, though these two variables contain only 4,639 observations, suggesting substantial missing data. The digital economy development index exhibits substantial variation, revealing pronounced regional disparities, and mobile phone proficiency averages 3.63, suggesting moderate digital literacy among respondents. The data structure provides adequate variation for subsequent regression analysis, though missing values require appropriate handling in empirical testing.

Table 1. Key variables and descriptive statistics

Variable	Total	Mean	SD	Min	Max
Province	11,398	14.12	7.895	1	28
Household Consumption	4,639	9.161	1.776	4.615	16.12
Digital Economy Development Index (Dig)	11,398	0.107	0.0819	0.00861	0.666
Residence Type	11,398	2.849	1.816	1	5
Gender	11,398	0.504	0.500	0	1
Number of Persons Living in Household	11,398	2.701	1.320	1	10
Annual Total Personal Income	4,639	9.161	1.776	4.615	16.12
Financial Condition	11,398	2.065	0.541	1	3
Marital Condition	11,398	1.754	0.431	1	2
Household Registration Type	11,398	1.423	0.494	1	2
Proficiency in Mobile Phone Use	3,118	3.633	0.870	1	5
Digital Economy Development Level	11,398	0.107	0.0819	0.00861	0.666

5. Empirical results analysis

5.1. Benchmark regression results

A benchmark regression model was established using the least squares method, with the regression results presented in Table 1. Benchmark regression analysis was conducted via a fixed-effects model, with the regression results shown in Table 3. Column (1) in Table 3 indicates that at the 10%

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significance level, the coefficient for the degree of digital economic development is significantly negative. This suggests that digital economic development exerts a restraining effect on elderly consumption. This result diverges from expectations and may reflect the particular challenges faced by the elderly in adapting to digital consumption patterns. Regarding control variables, the coefficient for annual personal income is significantly positive at the 1% significance level, indicating that income level is a core driver of elderly consumption. Household cohabiting population size also passes the 1% significance test with a positive coefficient , suggesting larger household size contributes to higher elderly consumption levels.

Table 2. Basic regression results

	Household Consumption of the Elderly
Digital Economy Development Level	-0.623*(-1.683)*
Gender	0.105(1.429)
Type of Residence	0.019(0.345)
Number of Persons Living in Household	0.209***(4.593)
Annual Total Personal Income	0.378***(6.101)
Financial Condition	-0.002(-0.048)
_cons	5.015***(11.376)
N	4639

Note: Figures in parentheses denote t-statistics; ** and *** indicate significance at the 5% and 1% levels respectively.

5.2. Robustness tests

To further validate the stability of the conclusions, this paper adopts the methodology employed by Li, Zhang, and Zhao [31] by applying truncated data processing. In the benchmark regression analysis, to eliminate the impact of outliers on the robustness of the theoretical framework, all continuous variables were truncated at the 1% percentile.

Robustness tests further validated the relationship between digital economic development and elderly consumption, with regression results presented in Table 3. The core explanatory variable, degree of digital economic development, exhibited a negative impact at the 1% significance level, consistent with the benchmark regression conclusion. This confirms the robustness of the finding that digital economic development may exert a suppressing effect on elderly consumption.

Table 3. Robustness test results

	Robustness Test 1	Robustness Test 2
Variable	Household Consumption of the Elderly	Household Consumption of the Elderly
Digital Economy Development Level	-0.626***(0.220)	-0.474**(0.226)
Constant	5.012***(0.171)	5.445***(0.217)
Observations	4,639	4639
R-squared	0.338	0.342

As for tail trimming, this paper draws upon the methodology employed by Long, Liu, and Zhang in their investigation of the impact of corporate collaborative R&D models on innovation quality [32], we further incorporate additional control variables to conduct robustness tests. Although the

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benchmark regression model in this paper rigorously controls for variables such as gender and financial condition, the number of control variables employed remains relatively limited compared to other literature and studies. Consequently, this paper incorporates additional control variables based on the work of Li and Li [33] and Zhou [34] by further incorporating control variables for marital condition, household registration type, and health condition among the elderly cohort into the baseline regression model.

In Table 3, the second robustness test result indicates that, after controlling for a series of demographic and economic characteristics, the level of digital economic development exerts a significant negative impact on household consumption of the elderly. This suggests that for every one-unit increase in the level of digital economic development, elderly household consumption decreases by 0.474 units. This finding aligns with the benchmark regression results, supporting the robustness of the conclusion. With $R^2 = 0.342$, the model exhibits satisfactory overall fit, and the sample size of 4,639 indicates robust statistical validity. This robustness test, by controlling for multiple potential confounding variables, enhances the reliability of the conclusion regarding the negative relationship between digital economic development and elderly household consumption.

6. Heterogeneity analysis

This study conducted a heterogeneity analysis examining the relationship between the digital economy and elderly consumption based on marital condition differences in Table 4. Results indicate a pronounced disparity in this relationship across marital conditions. For elderly individuals with spouses, the level of digital economic development exhibits a positive, statistically significant promoting effect at the 10% significance level, whereas no significant impact is observed among elderly individuals without spouses. This divergence may stem from mutual support in digital skills between spouses and shared consumption decision-making mechanisms. Notably, regardless of marital conditions, household size and annual total personal income exerted significant positive effects on elderly consumption, both passing the 1% significance test. Among married individuals, type of residence and gender also exerted significant effects.

Table 4. Results of heterogeneity analysis by marital condition

	(1) Unmarried	(2) Married
Variable	Household Consumption of the Elderly	Household Consumption of the Elderly
Digital Economy Development Level	-0.359(-0.570)	0.408*(1.882)
_cons	3.123***(8.543)	3.859***(23.839)
N	1014	3625

In Table 5, the impact of digital economic development level on elderly household consumption of the elderly exhibits a pronounced inverted U-shaped pattern: it exerts the strongest stimulating effect on two-person households, has no discernible influence on solitary elderly individuals, while turning inhibitory for households of four or more persons. Notably, annual total personal income significantly stimulates consumption across all household sizes, while the impact of residential location shifts from positive to negative as household size increases. These findings suggest that two-person households may develop optimal digital consumption patterns through spousal mutual support, whereas larger households face diseconomies of scale in digital technology adoption.

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Table 5. Analysis results of heterogeneity in household cohabitation

	Number of cohabiting members=1	Number of cohabiting members =2	Number of cohabiting members =3	Number of cohabiting members =4	Number of cohabiting members >4
Variable	Household Consumption of the Elderly	Household Consumption of the Elderly	Household Consumption of the Elderly	Household Consumption of the Elderly	Household Consumption of the Elderly
Digital Economy Development Level	-0.165 (-0.156)	0.974*** (4.228)	0.622 (0.712)	-1.349 (-1.402)	-0.825* (-1.740)
_cons	2.802***(5.195)	4.425*** (26.400)	4.913*** (9.349)	4.968*** (7.802)	4.811*** (6.553)
N	383	2590	504	465	697

According to Table 6, the analysis of urban-rural heterogeneity reveals significant differences in the impact of digital economic development on elderly consumption between urban and rural areas. In rural regions, it exerts a robust promotional effect, whereas in urban areas the influence is insignificant. This divergence may stem from the digital economy filling market gaps created by inadequate traditional consumption channels in rural areas, whereas urban digital consumption may have entered a plateau phase. Notably, household size and annual total personal income significantly boost consumption in both rural and urban samples. However, rural areas additionally exhibit significant effects from type of residence and gender. These findings indicate that the current consumption-boosting dividends of the digital economy are primarily concentrated in rural areas, while urban digital consumption development may face bottlenecks. Policy formulation should prioritize strengthening rural digital infrastructure development, while simultaneously promoting innovation in age-friendly digital consumption scenarios for urban areas.

Table 6. Results of urban-rural heterogeneity analysis

	(1)Rural	(2)Urban
Variable	Household Consumption of the Elderly	Household Consumption of the Elderly
Digital Economy Development Level	2.523**(2.451)	-0.012(-0.059)
_cons	2.734***(6.077)	4.078***(24.826)
N	792	3847

7. Moderating effect analysis

This study's moderating effect analysis reveals that the impact of digital economic development on elderly household consumption exhibits a pronounced threshold effect. When the moderator variable X_D (reflecting digital literacy levels) falls below the mean, the consumption-promoting effect of the digital economy is insignificant. However, once X_D exceeds the threshold, it shows a robust positive influence. This result indicates that the digital economy can only genuinely translate into a driving force for elderly consumption once foundational conditions are certain. Notably, within the high-level X_D group the moderator variable itself exhibits a significant negative impact, potentially signaling the latent risk of 'digital overload'. The study further confirms household size and personal income remain core drivers of elderly consumption regardless of moderator levels,which provide crucial evidence for formulating differentiated digital consumption promotion policies: low-level

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regions need prioritize strengthening digital infrastructure, while high-level regions must focus on mitigating digital exclusion risks while continuously consolidating traditional consumption drivers such as income and family support.

Table 7. Results of moderating effect analysis

	(1) Digital proficiency level below 3	(2) Digital proficiency level above 3
Variable	Household Consumption of the Elderly	Household Consumption of the Elderly
Digital Economy Development Level	0.193(0.445)	1.891***(3.274)
Interaction term X_D	0.480(0.405)	-4.086***(-3.477)
_cons	3.686***(18.819)	3.591***(15.108)
N	2768	1871

8. Research findings and policy recommendations

8.1. Research findings

Through systematic analysis of the impact mechanisms and heterogeneous characteristics of the digital economy on elderly consumption, this study draws the following key conclusions: The influence of digital economic development on elderly consumption exhibits complex multidimensional features, with its effects significantly moderated by factors such as household structure, urban-rural disparities and digital literacy levels. Benchmark regression results indicate the digital economy generally exerts a suppressing effect on elderly consumption,a phenomenon potentially attributable to the digital divide faced by the elderly. Heterogeneity analysis further reveals pronounced structural variations in the digital economy's impact: its promotional effect is strongest in two-person households, while efficacy is limited for single-person and four-person-plus households. Urban-rural comparisons indicate more pronounced benefits in rural areas. Analysis of marital condition shows individuals with spouses are more likely to reap digital consumption dividends. Notably, moderation analysis indicates the digital economy only translates into consumption momentum when digital literacy exceeds a specific threshold, with negligible effects otherwise. These findings suggest that the relationship between digital economic development and elderly consumption is not a simple linear promotion, but is instead shaped by multiple factors including individual characteristics, household environment, and social support networks.

8.2. Policy recommendations

Based on the research findings, this paper proposes the following policy recommendations:

Firstly, establish a multi-tiered digital ageing-friendly support system to lower the barriers to technology adoption. Given significant variation in digital literacy among older adults, a three-tiered digital literacy enhancement programme covering urban and rural areas need be implemented. In the foundational level, communities should offer introductory courses on smartphone operation and payment security, employing one-to-one mentoring to solve technology anxiety among isolated seniors. At the advanced level, collaborate with telecommunications providers to develop age-friendly application navigation features that simplify processes, such as voice-interactive shopping platforms. At the specialized level, implement scenario-based training in rural areas—such as 'digital market days'—integrating skill acquisition with daily consumption needs. Meanwhile enterprises are encouraged to develop 'intergenerational sharing' digital products, such as family account

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systems enabling children to remotely assist parents with online payments, compensating for individual capability gaps through household digital mutual support.

Promoting synergistic innovation between social security and digital consumption to enhance payment capability safeguards. We can promote the coordinated innovation between social security and digital consumption to boost payment capacity assurance. By advancing digital transformation of social security system, a closed-loop process of 'seamless verification–automatic disbursement–digital consumption' will be established for pension benefits, elderly subsidies, and so forth. Explore 'consumption points redeemable for medical insurance' models, permitting seniors to offset partial out-of-pocket medical costs using points accumulated through online spending. For low-income elderly, establish specialized digital consumption subsidy mechanisms offering fiscal incentives for first-time online purchase. Implement points reward systems tailored to seniors' interests, where accumulated digital consumption points can be exchanged for daily necessities.

Thirdly, cultivate new business models within the silver economy to expand growth opportunities in digital consumption. Guide market entities to develop specialized digital platforms tailored to elderly needs, focusing on three key areas: health management (remote monitoring systems for chronic conditions), social entertainment (age-friendly short-video creation platforms), and lifelong learning (online senior universities). Support traditional care homes in their digital transformation by developing OMO service models combining online booking with offline experiences. Establish innovation incubators for silver economy products, offering policy assistance and financial backing to enterprises developing age-friendly hardware such as smart walking sticks and voice-controlled appliances. Regularly host national silver economy digital consumption festivals to create a 'senior edition of Double Eleven' consumer IP, featuring marketplaces stocked with commonly used and popular goods for the elderly.

Fourth, implement differentiated regional development strategies to optimize the supply structure of digital consumption. Addressing disparities in consumption promotion stemming from urban-rural dual structures requires tailored approaches: Rural areas should prioritize enhancing digital infrastructure, strengthening county-village logistics networks, and promoting 'digital marketplace' models to resolve shortages in essential services like appliance repairs and pharmaceutical deliveries, enabling seniors to purchase goods online. Urban areas should focus on developing immersive age-friendly consumption scenarios—such as VR-enabled senior-friendly tourism experiences and smart community canteens—to counteract 'digital fatigue'.

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