Proceedings of CONF-BPS 2026 Symposium: Innovation, Finance, and Governance for Sustainable Global Growth
DOI: 10.54254/2754-1169/2026.BJ31170

The Benefit Management Mechanism of Elderly-Friendly Products Based on Multiple Case Comparisons

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Abstract. China has entered a moderately aging society, indicating that the silver economy has broad market prospects, but there is a serious mismatch between supply and demand in elderly-friendly products on the market. Existing research mainly focuses on the macro-strategic level or the micro-level of consumer characteristics, lacking studies on revenue management mechanisms that connect the two. To fill this gap, this study adopts a consumer segmentation perspective and employs a multiple-case comparative research method, selecting the Yuwell blood pressure monitor and Xiaomi Mi Band as representatives of "specialized elderly products" and "elderly-adaptive products," respectively The study finds that the "value deepening" model is suitable for specialized elderly products with inelastic demand, maximizing profits through price discrimination and product value-added services, whereas the "ecosystem coverage" model fits elderly-adaptive products with elastic demand, expanding market share through penetration pricing and ecosystem linkage. Furthermore, an integrated revenue management model is constructed, providing a theoretical framework for enterprises to select market strategies and offering theoretical implications for promoting the high-quality development of the silver economy.

Keywords: multiple case analysis, revenue management, elderly-adaptive products, silver economy.

1. Introduction

According to data from the National Bureau of Statistics of China, by the end of 2024, the elderly population aged 60 and above has exceeded 300 million, accounting for more than 22% of the total population, indicating that China has officially entered a moderately aging society [1,2]. This phenomenon indicates a broad prospect for the silver economy market. Moreover, the market size of the silver economy is rapidly growing worldwide, and research interests are expanding from traditional fields to areas such as innovation, technology, and digital inclusion [3].

However, current age-friendly products face serious structural problems. International studies also encounter challenges of supply-demand mismatch, highlighting the urgent need to develop new models that optimize products while creating social value [4]. Specifically, age-friendly products face severe homogeneity issues on the supply side, with product varieties being limited and largely concentrated in basic medical care and elderly care [5]. On the demand side, consumers show high heterogeneity; the senior population exhibits significant differences in spending capacity, health

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needs, and digital literacy [6]. Many companies still adhere to the concept of one-time product sales and lack a deep exploration of the product's full lifecycle value. Effective revenue cycles have not been established in aspects such as pricing, sales channels, services, and monetization of data. These issues reflect that traditional revenue management mechanisms are still inadequate in a complex consumer market.

Existing research on the silver economy mainly focuses on macro-level strategies and micro-level consumer characteristics, leaving a research gap regarding how enterprises can build revenue management mechanisms that account for the heterogeneity of consumer demand from the perspective of the silver economy [6,7]. Based on this, this paper approaches the issue from the perspective of seniors, addressing demand-side differentiation through a multiple-case analysis method, comparing and analyzing the cases of Yuwell blood pressure monitors and Xiaomi smart bands [8]. This study aims to provide enterprises with a framework for revenue management mechanisms and promote the high-quality development of the silver economy.

2. Literature review

Constructing a revenue management mechanism for elderly-friendly products requires combining consumer segmentation and revenue management theory. Peng Xizhe divides the elderly population into 'survival-oriented,' 'development-oriented' and 'pleasure-oriented' groups, revealing the inherent heterogeneity in payment willingness and demand among the silver-haired demographic, providing a basis for market segmentation [7]. Song further proposes a cyclical logic of 'demand recognition—supply response—consumption realization—re-recognition,' deepening the connotation of consumer segmentation theory [8].

In terms of revenue management, pricing strategy theories of modern internet companies present issues of price discrimination [9]. Existing research lacks an in-depth exploration of the micro-level mechanisms of pricing and requires effective integration with consumer segmentation theory. This gap is also evident in international studies. Bogataj and Rogelj point out the need to develop new models that support the optimization of services for the elderly and the measurement of social value; Marcucci et al. suggest that research on the silver economy has shifted its focus to 'innovation' and 'digital inclusion' [4,5]. However, these studies remain detached from research on micro-level revenue management.

Furthermore, Zhang Xinyue and Huang Yue study cognitive biases and the role of technological empowerment in smart elderly care product marketing, while Chen Haifeng highlights 'age bias' in algorithms [3,10,11]. These studies provide references for understanding market practices for elderly-friendly products but have not yet formed a systematic revenue management framework.

Based on the above literature review, this study will construct a revenue management analysis framework that integrates consumer segmentation and incorporates social value creation into the evaluation system. By comparing the Yuwell blood pressure monitor (specialized for the elderly) and the Xiaomi Smart Band (elder-friendly), it will analyze customer identification, revenue management actions, and differences in economic and social benefits, and integrate multi-source evidence, including e-commerce data, corporate financial reports, user reviews, and policy documents, to provide a theoretical basis for the revenue management mechanism of elderly-friendly products.

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3. Case selection

This study, based on the principle of theoretical sampling, selects the Yuwell Voice Electronic Blood Pressure Monitor and the Xiaomi Band 10 as research cases. These two cases respectively represent two product positioning strategies in the market for elderly-friendly products. The yuwell blood pressure monitor is classified as an "elderly-specific" product and characterized by rigid demand on the consumer side, with its design, functionality, and marketing strategies focused on the elderly population.On the other hand, the Xiaomi Mi Band is categorized as an "elder-adaptive" product, featuring flexible demand and positioning the more intergenerational. Its health monitoring functions are suitable for people of all ages. The distinction between "elderly-specific" and "elderly-adaptive" product positioning provides an effective research framework, reflecting the differences in revenue management mechanisms that enterprises employ when facing varying demand characteristics.

yuwell Intelligent Voice Blood Pressure Monitor—"Value Deepening" Model

4. Yuwell smart Voice Blood Pressure Monitor — the 'Value Deepening' model

4.1. Status recognition

The yuwell Intelligent Voice Blood Pressure Monitor is a typical "elderly-specific" product, with its design and positioning focusing on the rigid health needs of the elderly group. As a Class II national medical device, the product meets the daily medical-grade monitoring needs of patients with chronic diseases such as hypertension, and possesses indispensability. Its target users are mainly "survival-oriented" and "development-oriented" elderly people with limited digital literacy but high health awareness, and the user profile is highly consistent with the product positioning.

In terms of channels, yuwell adopts an online-offline integration strategy. Offline pharmacies provide professional consulting services to build trust, while online platforms serve as the main scenario for children to express filial piety, jointly constructing a complete reach network.

4.2. Analysis of revenue management actions

Yuwell has established a price discrimination system matching its "elderly-specific" products. The daily price is maintained at 109–119 yuan to shape the perception of professional value; during the national subsidy period, the price is reduced to 69–89 yuan, achieving market segmentation through price discrimination. This strategy targets customer groups with different consumption habits under the same rigid demand, aiming to maximize consumer surplus through screening based on willingness to pay.

In the non-price dimension, the product realizes value deepening through functional innovation. It uses the voice broadcast function to address the pain point of age-related vision loss in the elderly; creates emotional value through remote monitoring and cloud-based data synchronization; and the 360° cuff design enhances operational simplicity. These functions together construct the product's differentiated competitiveness.

4.3. Benefit evaluation

Yuwell's "Value Deepening" strategy has achieved remarkable results. Thanks to its precise "elderly-specific" product positioning, it has formed a complete closed loop from demand satisfaction to value realization.

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At the economic level, the sales volume of all models of the product on the single platform of Taobao has exceeded 200,000 units, proving the feasibility of its business model. At the social value level, among approximately 95% of positive reviews, "easy to operate" and "accurate measurement" have become high-frequency keywords, which reflects the product's high functional reliability. More importantly, by enhancing the health autonomy of elderly users and constructing emotional scenarios of intergenerational care, the product has added social value beyond its inherent functions.

5. Xiaomi Mi Band — 'ecosystem coverage' model

5.1. Status recognition

Xiaomi Band 10 is a typical "elderly-adaptive" product. Its target market covers multiple generational groups, with elderly users being part of the broad user base. Essentially a consumer electronic product, its health monitoring functions are indeed suitable for the elderly. However, as a non-medical-grade product, it is a non-essential item. Phrases in user reviews such as "bought it for parents by the way" and "purchased it when seeing promotions" reflect the randomness of purchasing decisions and users' price sensitivity. The product exhibits obvious substitutability and shareability during use, embodying the non-rigid nature of demand, which forms a sharp contrast with "elderly-specific" products.

5.2. Revenue management actions analysis

Xiaomi has established a multi-level pricing system under its ecological coverage strategy. It maintains a benchmark price of 269 yuan on its official website to anchor value; e-commerce platforms such as JD.com and Taobao control the transaction price at 200–230 yuan through subsidies; and the emerging channel of Douyin E-commerce further lowers the price to around 207 yuan. This cross-channel price difference aims to reach consumer groups with different price sensitivities through various price points, ultimately attracting users to the Xiaomi ecosystem.

In the non-price dimension, the band is deeply integrated with Xiaomi mobile phones, the Xiaomi App, and cloud services to form a synergistic effect. After purchasing the band, users become active App users. The long-term accumulated health data and usage habits constitute switching costs, transforming the hardware product into an entry point connecting users with services. The cross-generational design meets both the sports monitoring needs of young groups and the health monitoring needs of the silver-haired group, realizing the maximum expansion of the user base.

5.3. Revenue evaluation

Xiaomi's ecological coverage strategy has shown obvious results in both market share occupation and user ecosystem construction. The product achieves stable sales of hundreds of thousands of units on major e-commerce platforms, and hardware penetration will create sustainable value for subsequent internet services. However, this broad-based strategy has limitations in the depth of elderly-friendliness. The core design of the product is still oriented towards young groups, reflecting a compromise on the in-depth needs of specific groups in the pursuit of market scale and ecological effects. This model forms a complete closed loop based on elastic demand, realizing the long-term value mining of products through penetration pricing and ecological linkage.

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6. Comparative case analysis

Through the case comparison of Yuwell Blood Pressure Monitor and Xiaomi Band 10, this study demonstrates the differentiated paths of revenue management for elderly-friendly products. These two models show differences in multiple aspects such as product positioning, demand characteristics, and value creation, which essentially stems from the differences in product attributes and target customer groups.

In terms of demand characteristics, Yuwell Blood Pressure Monitor meets the rigid demand with medical necessity, and its use is closely bound to the daily monitoring of chronic diseases. In contrast, Xiaomi Band 10 is based on the elastic demand market, and its health monitoring functions are optional for users. This finding confirms the demand conversion theory, that is, demands of different natures will follow different paths in the conversion process from "demand recognition" to "consumption realization" [7].

In the core logic of revenue management, Yuwell adopts the "Value Deepening" model, which screens customer groups with different payment capabilities through precise price discrimination. This practice reflects the necessity of enterprises and social policies in the collaborative design of price tools. Xiaomi follows the "Ecological Coverage" model, and the core goal of its pricing strategy is to gain a large market share, which echoes the trend of the silver economy expanding towards "innovation and digital inclusion" [3,12].

In terms of value creation, Yuwell has successfully established competitive barriers in the vertical field through professional functional design and the construction of emotional scenarios, practicing the concept of "senior innovation" [13]. Xiaomi, on the other hand, has built obvious scale advantages relying on its cross-generational design and ecological synergistic effect, but may also face the risk of "age bias" [11]. The differences between the two paths further confirm that the silver economy must seek a balance between social value and economic benefits [4].

In summary, this study holds that the revenue management of elderly-friendly products must adopt differentiated strategic choices based on their specific product positioning and demand characteristics. Enterprises need to make a clear strategic choice between in-depth professional cultivation and ecological extensive coverage. This finding provides a new analytical perspective for understanding the inherent complexity of the silver economy market.

7. Integrated revenue management model

Based on the aforementioned case comparison analysis and findings, this study constructs an integrated model of revenue management for elderly-friendly products (Figure 1). Derived from the analysis of the differentiated paths of Yuwell and Xiaomi, this model transforms specific case analyses into a strategic decision-making framework. Specifically, the connections between product attributes, demand characteristics, and revenue management actions presented in the cases constitute the core logic of this model.

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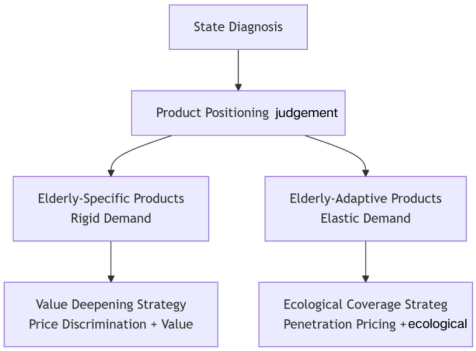

Figure 1. Revenue management integration model

The model explains the complete decision-making logic for enterprises to select revenue management strategies in the context of the silver economy. First, enterprises need to conduct accurate status diagnosis of their product attributes to clarify whether they are "elderly-specific" products meeting rigid demands or "elderly-adaptive" products targeting elastic demands. This foundational judgment will determine the subsequent revenue management path.

After completing the status diagnosis, enterprises need to select the corresponding implementation path. For "elderly-specific" products, a value deepening strategy should be adopted. Its core lies in tapping the value potential of customers with different payment capabilities through precise price discrimination, and building differentiated competitive advantages relying on value-added services, ultimately achieving the unification of profit maximization and social value. For "elderly-friendly" products, an ecological coverage strategy is more suitable. This strategy focuses on occupying the market through penetration pricing and enhancing user stickiness via ecological linkage, aiming to obtain the long-term value of the product and expand economies of scale.

The theoretical contribution of this model is that it transcends the particularity of individual cases and constructs a theoretical bridge connecting "consumption stratification" and "revenue management." This study clearly indicates that enterprises' pricing and value creation strategies are not isolated choices but are constrained by their product positioning and the demands of target customer groups. This provides an integrated analytical tool for the diversity of enterprise strategies in the silver economy market, making up for the deficiency of existing research between macro strategies and micro consumption characteristics.

8. Conclusion

Through the case comparison of Yuwell and Xiaomi, this study reveals two revenue management models for elderly-friendly products: "Value Deepening" and "Ecological Coverage." The research indicates that enterprises must select strategies based on product attributes and customer group characteristics. A one-size-fits-all pricing mindset is no longer applicable to the current complex market, and enterprises should shift to refined revenue management strategies. For elderly-specific products targeting rigid demands, enterprises should fully tap the value potential of the products' rigid demands, adopt the Value Deepening model, and achieve the unification of profits and social value through price discrimination and professional in-depth value-added services. For elderly-friendly products oriented towards elastic demands, the Ecological Coverage model is more suitable. Enterprises should optimize the layout of online channels and balance market share and product value through penetration pricing and ecological linkage.

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This study constructs an integrated revenue management model, providing enterprises with a decision-making framework from status diagnosis to path selection, while highlighting the important role of policy tools in regulating the market and promoting fairness. For policymakers, it is necessary to recognize the dual value of price tools. It is recommended to improve the precise subsidy mechanism and include more high-quality elderly-friendly products in the subsidy scope. This not only lowers the purchase threshold for the elderly group but also stimulates enterprises' enthusiasm for R&D investment. The conclusions of this study are mainly based on hardware product cases. For future research directions, further exploration can be conducted on the revenue management mechanisms of service-oriented elderly-friendly products and the disruptive impact of digital technology on traditional pricing models, so as to provide more diverse theoretical support for the high-quality development of the silver economy.

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