Enhancing Service Value for Senior Consumers: A Path Analysis of Social Engagement and Sensory Experience in Beauty Care

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ABSTRACT

As the aging population grows, the role of beauty services extends beyond aesthetics, potentially contributing to the holistic well-being of older adults. However, the psychological and physiological mechanisms underlying the perceived value of these services remain underexplored. This study aims to construct and validate a structural model elucidating how mental health, social involvement, and physiological perception influence the perceived helpfulness of beauty services among older adults. The present work contributes to the literature by proposing and empirically validating an integrative framework that explains how social and physiological pathways shape older adults' evaluations of beauty services. Specifically, it identifies a serial mediation mechanism in which mental health influences perceived helpfulness indirectly through social involvement and physiological perception, thereby extending current understanding of service value in the context of aging.

A quantitative research design was employed, with a sample of 89 older adult participants participants in Taiwan who regularly used beauty services. Partial least squares structural equation modeling (PLS-SEM) was performed using SmartPLS to test the hypothesized relationships. between mental health, social involvement, physiological perception, and the perceived helpfulness of the service. The path analysis revealed that the effect of mental health on beauty service helpfulness was not direct, but operated through a social–physiological pathway. Specifically, while Mental Health did not directly predict Beauty Service Helpfulness (H2, β = -.013, ns) or Physiological Perception (H3, β = .047, ns), it significantly influenced Social Involvement (H1, β = -.392, $p < .01$). Crucially, Social Involvement served as a strong predictor of Physiological Perception (H5, β = .535, $p < .001$), which in turn acted as the most robust determinant of Beauty Service Helpfulness (H4, β = .677, $p < .001$). The model explained a substantial variance in the outcome variable (R^2 = .539), indicating high explanatory power.

The findings suggest that for older adult consumers, the value of beauty services is not derived directly from mental health status but is rather mediated through a social-physiological pathway. These results carry both theoretical and practical implications by highlighting that the helpfulness of beauty services for older adults depends largely on social engagement and sensory comfort rather than on mental health status alone. Accordingly, beauty service providers serving older populations should emphasize social interaction and sensory comfort to maximize the therapeutic value of their services.

Keywords: Elderly beauty service, Physiological perception, Social involvement, Serial mediation, Mental health

1. Introduction

The global demographic shift toward an aging population has fundamentally transformed the service landscape, giving rise to the "Silver Economy." In rapidly aging societies such as Taiwan, the consumption patterns of older adults are shifting from basic survival needs toward services that enhance quality of life and subjective well-being [1]. Among these, the beauty and personal care sector has emerged as a vital, yet frequently overlooked, domain of geriatric service. While conventionally associated with aesthetics and youthfulness, beauty care for the elderly serves a far more complex function, potentially acting as a conduit for psychological comfort, social connection, and physiological regulation [2]. Yet, most existing studies on beauty and personal care have concentrated on younger or general consumers, with relatively few investigations explicitly targeting older adults as a distinct service group.

However, the academic understanding of why older adults value these services remains limited. Prevailing literature often focuses on the outcome of "looking good" (aesthetic improvement) rather than the process of "feeling good" (embodied experience). This gap is significant because the perceived value of a service for senior consumers is likely driven by different mechanisms than those for younger demographics. Specifically, the interplay between an individual's baseline mental health, their level of social engagement during the service, and their sensory (physiological) experience remains under-explored. Prior research has tended to examine these dimensions separately (e.g., mental health, social participation, or sensory stimulation), rather than integrating them into a single framework that explains how they jointly shape service value for older adults. Understanding these pathways is essential for service providers aiming to design care models that truly resonate with the needs of the elderly. Accordingly, this study addresses this research gap by shifting attention from purely aesthetic outcomes to the psychological, social, and physiological mechanisms through which beauty services generate perceived helpfulness for older adults.

Theoretical Background and Hypothesis Development

This study posits that the helpfulness of beauty services is not a direct product of mental health status, but rather the result of a serial process involving social and sensory mechanisms.

First, Mental Health serves as the antecedent context. Research in health psychology suggests that an individual's psychological state significantly influences their motivation to engage with the outside world [3]. For older adults, beauty salons and barbershops often function as "third places"—community hubs that facilitate Social Engagement (operationalized in this study as Social Involvement). It is hypothesized that mental health status dictates the degree to which seniors utilize these spaces for social interaction.

Second, the role of Sensory Experience (Physiological Perception) is critical in high-touch services. Unlike remote or digital services, beauty care is inherently tactile. Recent studies in gerontology indicate that social interaction can heighten physiological awareness and sensory receptivity [4]. Consequently, this study proposes a novel pathway: that the social engagement inherent in the service environment enhances the senior's physiological perception of comfort and relaxation.

Finally, these factors culminate in Service Value (Beauty Service Helpfulness). We argue that for the elderly, the "helpfulness" of a service is predominantly determined by immediate physiological and sensory gratification, which is, in turn, facilitated by a supportive social environment. By articulating these links, this study develops a structural model that clarifies how mental health, social involvement, and physiological perception jointly contribute to the perceived helpfulness of beauty services among older adults.

Research Objectives

Despite the growing market demand, there is a lack of empirical evidence modeling these structural relationships. To address this, this study employs path analysis to examine the behavioral and physiological determinants of service value among elderly consumers in Taiwan. Specifically, this research aims to:

1. Analyze the influence of mental health on social engagement.
2. Investigate the serial mediating role of social engagement and sensory experience.
3. Demonstrate how these embodied experiences drive the perceived helpfulness of beauty care.

By validating these pathways, this study seeks to provide a theoretical basis for repositioning beauty services from mere aesthetic maintenance to a holistic care practice that integrates social support and sensory therapy. In doing so, it highlights beauty services as a potential form of geriatric care that simultaneously addresses psychological, social, and physiological needs.

2. Literature Review

2.1 Mental Health

In the context of gerontology, mental health is defined not merely by the absence of disorder, but by the presence of psychological well-being, emotional stability, and the capacity to cope with the aging process [5]. As individuals age, mental health becomes a critical determinant of lifestyle choices and behavioral activation. Recent large-scale studies have further demonstrated that higher levels of mental well-being are associated with more frequent participation in social and leisure activities among older adults, which in turn supports better psychological outcomes (Gao et al.,

2024).According to Socioemotional Selectivity Theory [6], older adults prioritize emotionally meaningful goals. Consequently, an individual's baseline mental health status—encompassing their mood, self-esteem, and cognitive outlook—serves as the primary antecedent for how they engage with their environment. High levels of mental well-being are associated with a proactive approach to life, including the maintenance of personal appearance and the pursuit of leisure activities [7]. Conversely, poor mental health often manifests as apathy or withdrawal, limiting the individual's capacity to perceive value in external services.

2.2 Physiological Perception

Physiological perception refers to an individual's somatic awareness—the ability to sense and interpret bodily signals, such as comfort, relaxation, vitality, or pain [8]. In the elderly population, the "mind-body connection" is particularly pronounced. Research in psychosomatic medicine suggests that psychological states can alter sensory thresholds; positive mental states often enhance one's receptivity to positive physical sensations, while negative states may amplify pain or discomfort [9]. Therefore, a senior with robust mental health is likely to possess a more attuned and positive connection to their physical body, allowing them to better appreciate sensory inputs.

Based on this theoretical connection between psychological state and somatic awareness, we propose:

H3. Mental health will impact physiological perception positively.

2.3 Social Involvement

Social involvement encompasses the degree to which an individual participates in community activities, interacts with peers, and maintains interpersonal networks. Yet, the relationship between mental health and social behavior is well-documented. Psychological well-being acts as a motivational resource; individuals who feel mentally healthy are more likely to seek out social interactions and overcome the barriers to leaving their homes [3]. Empirical evidence indicates that engagement in social activities can alleviate depressive symptoms and improve overall mental health among older adults, underscoring the reciprocal relationship between psychosocial well-being and social participation[10]. Depression and anxiety, conversely, are strong predictors of social isolation. Thus, mental health is a necessary precursor to active social engagement.

H1. Mental health will impact social involvement positively.

Further, social involvement is an embodied experience. Participating in social activities—such as visiting a beauty salon or chatting with service providers—stimulates physiological arousal through movement, laughter, and proximity [11]. Furthermore, the "buffering hypothesis" suggests that social support reduces physiological stress responses [12]. When elderly individuals are socially active, they often report higher levels of physical vitality and sensory alertness. The social environment essentially "wakes up" the senses, enhancing physiological perception.

H5. Social involvement will impact physiological perception positively.

2.4 Beauty Service Helpfulness

In this study, "Beauty Service Helpfulness" is defined as the consumer's evaluation of the service's utility in enhancing their overall quality of life. This evaluation is multidimensional, stemming from psychological, physical, and social benefits.

Indeed, individuals with better mental health are generally more likely to perceive value in self-care activities. They view beauty services not as a chore, but as a constructive tool for self-presentation and identity maintenance [2]. Consistent with this perspective, a recent intervention study in rural Taiwan found that participation in a structured beauty program significantly improved older adults' self-perceptions of aging and reduced depressive symptoms, suggesting that beauty-related services can function as a meaningful psychosocial resource in later life[13]. A positive psychological mindset predisposes the consumer to evaluate the service outcome favorably.

H2. Mental health will impact beauty service helpfulness positively.

Moreover, beauty services are high-contact, sensory experiences involving touch, grooming, and physical relaxation. Field [14] argues that touch therapy releases oxytocin and reduces cortisol, creating a direct physiological benefit. If a consumer perceives a strong positive physiological change (e.g., feeling relaxed, refreshed, or physically comfortable) during the service, they are highly likely to rate the service as helpful. The somatic experience is often the most tangible evidence of the service's value.

H4. Physiological perception will impact beauty service helpfulness positively.

In addition, for many older adults, beauty salons function as "third places"—informal gathering grounds distinct from home and work [15]. Recent scoping review findings similarly highlight that accessible local businesses and community facilities can serve as important third places that foster older adults' social interaction and network building[18]. The helpfulness of the service is often attributed to the social support received during the visit. If the service facilitates conversation, companionship, and a sense of belonging, the consumer attributes higher utility to the service, viewing it as a remedy for loneliness as much as a grooming procedure.

H6. Social involvement will impact beauty service helpfulness positively.

3. Research Design

3.1 Framework

The framework (see Figure 1) posits that Beauty Service Helpfulness (the ultimate dependent variable) is not merely a result of the service quality itself, but is deeply rooted in the consumer's internal Mental Health, their external Social Involvement, and their Physiological Perception (body image/self-perception). The model suggests a "Holistic Beauty" approach, integrating the mind (Mental), the community (Social), and the body (Physiological) to explain consumer behavior in the beauty sector.

This framework is significant because it challenges the notion that beauty consumption is purely

vanity-driven. By placing Mental Health at the origin, the study argues that beauty service consumption is a coping mechanism or a maintenance strategy for overall well-being.

For practitioners, this study implies that beauty therapists are not just treating the skin or body; they are engaging with a client's mental and social reality. To maximize "Service Helpfulness," the industry must foster environments that support mental wellness and positive body image, rather than just focusing on aesthetic correction.

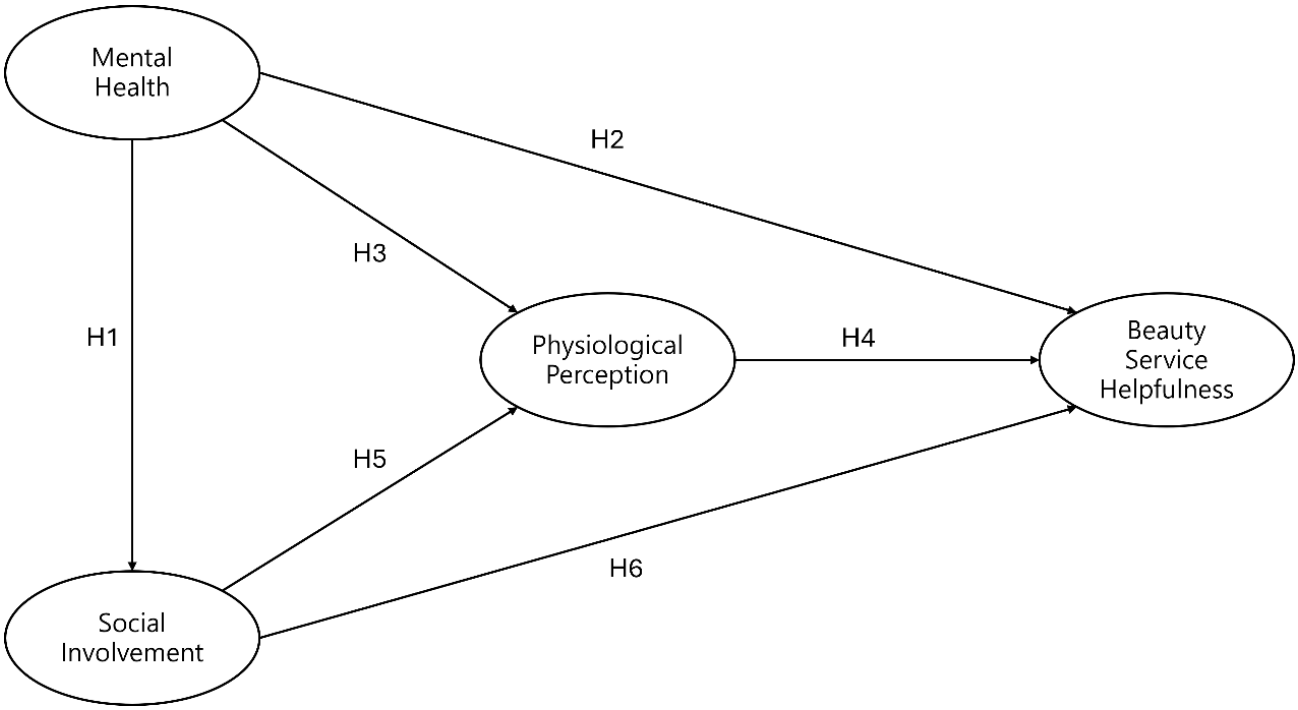

Figure 1. The hypothesized research model

Source: By authors.

3.2 Instrument and Analysis

To comprehensively assess the impact of beauty services on well-being, a structured questionnaire was developed. It incorporated self-assessment scales covering mental health, physiological perception, and social involvement. These measures were adapted from established domestic and international scales to balance psychometric rigor with ease of administration [17,18]. The study employed quantitative methods—including descriptive statistics, correlation analysis, and group difference testing—to elucidate the empirical value of beauty interventions and provide a solid foundation for health promotion policies targeting the aging population.

3.3 Samples and sampling

3.3.1 Participants and sampling strategy

The study targeted middle-aged and older adults (aged 45 and above) who possess functional independence and have prior or current experience with beauty services, including scalp care, aromatherapy, body massage, nail care, and eyelash services. A purposive sampling strategy was

employed to recruit a representative sample of experienced users. Digital questionnaires were distributed across diverse settings, such as community colleges, beauty salons, and senior learning centers. This sampling method was selected for its ability to precisely target individuals with specific service experiences, thereby enhancing the relevance and utility of the data [19,20]. This approach aligns with prior research on senior services, which has demonstrated the efficacy of recruiting from community care points and beauty venues to ensure representativeness [17,21].

3.3.2 Data collection and sample

Electronic questionnaires were utilized for their efficiency, cost-effectiveness, and convenience. This method is increasingly recognized as a standard tool for assessing health behaviors in older populations, particularly in the post-pandemic context [22,23]. A total of 89 valid questionnaires were collected. This sample size was deemed sufficient to support robust statistical analyses, including group comparisons, thereby ensuring the reliability and validity of the findings.

4. Results and Discussions

4.1 The Background Of Participants

Descriptive statistical analysis was conducted on a valid sample of 89 middle-aged and older adults. The demographic profile was categorized by gender, age, marital status, education level, occupational status, monthly income, and living arrangement. The analysis revealed a predominantly female sample (78.7%). In terms of age distribution, the majority of participants fell within the 50–59 age bracket. Regarding socioeconomic status, most respondents were married, held a high school or associate degree, and reported a monthly income between NT20,000 and NT40,000. Occupational data indicated that the majority were either retired or homemakers. Finally, the predominant living arrangement was co-residence with a spouse or children.

4.2 Reliability and Validity

4.2.1 Reliability test

The assessment of the reflective measurement model was conducted to evaluate the internal consistency reliability and convergent validity of the constructs. As presented in Table 1, all constructs—Mental Health, Social Involvement, Physiological Perception, and Beauty Service Helpfulness—demonstrated satisfactory levels of reliability and validity based on established thresholds [24].

Internal consistency was assessed using three metrics: Cronbach's alpha (α), Dijkstra-Henseler's rho (rho_A), and Composite Reliability (CR). First, Cronbach's alpha values for all constructs ranged from .892 to .946. Specifically, Physiological Perception demonstrated the highest consistency (α = .946), followed by Social Involvement (α = .928), Beauty Service Helpfulness (α = .904), and Mental Health (α = .892). All values well exceeded the recommended threshold of .70 [25], indicating strong reliability across the scales.

Table 1. Reliability and convergent validity (n=89)

Construct	Cronbach's α	rho_a	Composite Reliability	AVE
Mental Health	.892	.931	.918	.693
Social Involvement	.928	.948	.943	.706
Physiological Perception	.946	.951	.959	.825
Beauty Service Helpfulness	.904	.912	.926	.678

Source: By authors.

Second, rho_A values, which provide a more precise estimation of reliability in PLS-SEM, ranged from .912 to .951. Physiological Perception again showed the highest value (rho_A = .951), while Beauty Service Helpfulness reported the lowest (rho_A = .912). All rho_A values were above the conservative cutoff of .70 [26].

Third, Composite Reliability (CR) values ranged from .918 to .959. Physiological Perception exhibited the highest reliability (CR = .959), followed by Social Involvement (CR = .943), Beauty Service Helpfulness (CR = .926), and Mental Health (CR = .918). These results confirm that the constructs possess high internal consistency.

4.2.2 Convergent validity

Convergent validity was evaluated using the Average Variance Extracted (AVE). An AVE value of .50 or higher indicates that the construct explains more than 50% of the variance of its indicators [27].

As shown in Table 1, the AVE values for all constructs exceeded the .50 threshold, ranging from .678 to .825. Physiological Perception demonstrated the highest convergent validity (AVE = .825), indicating that 82.5% of the variance in its indicators is accounted for by the construct. Social Involvement (AVE = .706), Mental Health (AVE = .693), and Beauty Service Helpfulness (AVE = .678) also showed robust convergent validity. These results confirm that the measurement items converge well on their respective constructs.

4.2.3 Discriminate validity

(1) The Heterotrait-Monotrait Ratio of Correlations

To ensure that the constructs in the research model are empirically distinct from one another, discriminant validity was assessed using the Heterotrait-Monotrait Ratio of Correlations (HTMT). This method is recommended over the traditional Fornell-Larcker criterion, as recent methodological research indicates that HTMT offers superior sensitivity in detecting a lack of discriminant validity [28].

According to established guidelines, discriminant validity is established if the HTMT values are below the threshold of 0.85 [29] or, more liberally, below 0.90 [30]. Values exceeding these thresholds suggest that the constructs are not sufficiently distinct.

As presented in Table 2, the HTMT analysis revealed that all ratios between the constructs were well below the conservative threshold of 0.85. The values ranged from a low of 0.173 (between

Mental Health and Physiological Perception) to a high of 0.778 (between Beauty Service Helpfulness and Physiological Perception).

Table 2. Parameters of HTMT analysis result (n=89)

Constructs	Beauty_Service Helpfulness	Mental Health	Physiological Perception	Social Involvement
Beauty_Service Helpfulness				
Mental Health	0.180			
Physiological Perception	0.778	0.173		
Social Involvement	0.486	0.409	0.533	

Source: By authors.

Specifically, the relationship between Beauty Service Helpfulness and Physiological Perception yielded the highest ratio (HTMT = 0.778), yet it remains distinctively below the critical cutoff. Other key relationships, such as Social Involvement and Physiological Perception (HTMT = 0.533) and Social Involvement and Beauty Service Helpfulness (HTMT = 0.486), also demonstrated satisfactory distinctiveness.

(2) The Fornell–Larcker assessment

In addition to the HTMT ratio, discriminant validity was further assessed using the traditional Fornell-Larcker criterion (Fornell & Larcker, 1981). This method compares the square root of the Average Variance Extracted (AVE) for each construct against the correlations between that construct and all other constructs in the model.

For discriminant validity to be established, the square root of the AVE (represented on the diagonal of the matrix) must be greater than the highest correlation involving that construct (represented by the off-diagonal elements in the corresponding rows and columns).

As presented in Table 3, the bolded diagonal values represent the square root of the AVE for each latent variable. These values ranged from 0.823 to 0.908. Specifically. The Physiological Perception exhibited the highest square root of AVE (0.908). Social Involvement followed with 0.840. Mental Health showed 0.832. Beauty Service Helpfulness showed 0.823. When comparing these diagonal values to the inter-construct correlations.

Table 3. Parameters of Fornell–Larcker assessment result (n=89)

Constructs	Beauty_Service Helpfulness	Mental Health	Physiological Perception	Social Involvement

Beauty_Service Helpfulness	0.823			
Mental Health	-0.161	0.832		
Physiological Perception	0.729	-0.162	0.908	
Social Involvement	0.451	-0.392	0.516	0.84

Source: By authors.

The square root of AVE for Beauty Service Helpfulness (0.823) exceeded its strongest correlation with another construct, which was with Physiological Perception (0.729). The square root of AVE for Mental Health (0.832) was well above its highest absolute correlation, observed with Social Involvement (-0.392). The square root of AVE for Physiological Perception (0.908) was greater than its highest correlation (0.729 with Beauty Service Helpfulness). The square root of AVE for Social Involvement (0.840) exceeded its highest correlation (0.516 with Physiological Perception).

Since the square root of the AVE for every construct was consistently higher than the correlations with any other latent variable, the Fornell-Larcker criterion is satisfied. These results, combined with the HTMT analysis, provide robust evidence that the constructs in the model are statistically distinct.

4.3 Research Model Verification

The structural model was assessed to test the hypothesized relationships between Mental Health, Social Involvement, Physiological Perception, and Beauty Service Helpfulness. The results of the path analysis are presented in Figure 2.

The model explains a substantial amount of variance in the dependent variable, Beauty Service Helpfulness ($R^2 = .539$), indicating that the predictors account for 53.9% of the variance in perceived service value. Additionally, the model explains 26.9% of the variance in Physiological Perception ($R^2 = .269$) and 15.4% of the variance in Social Involvement ($R^2 = .154$).

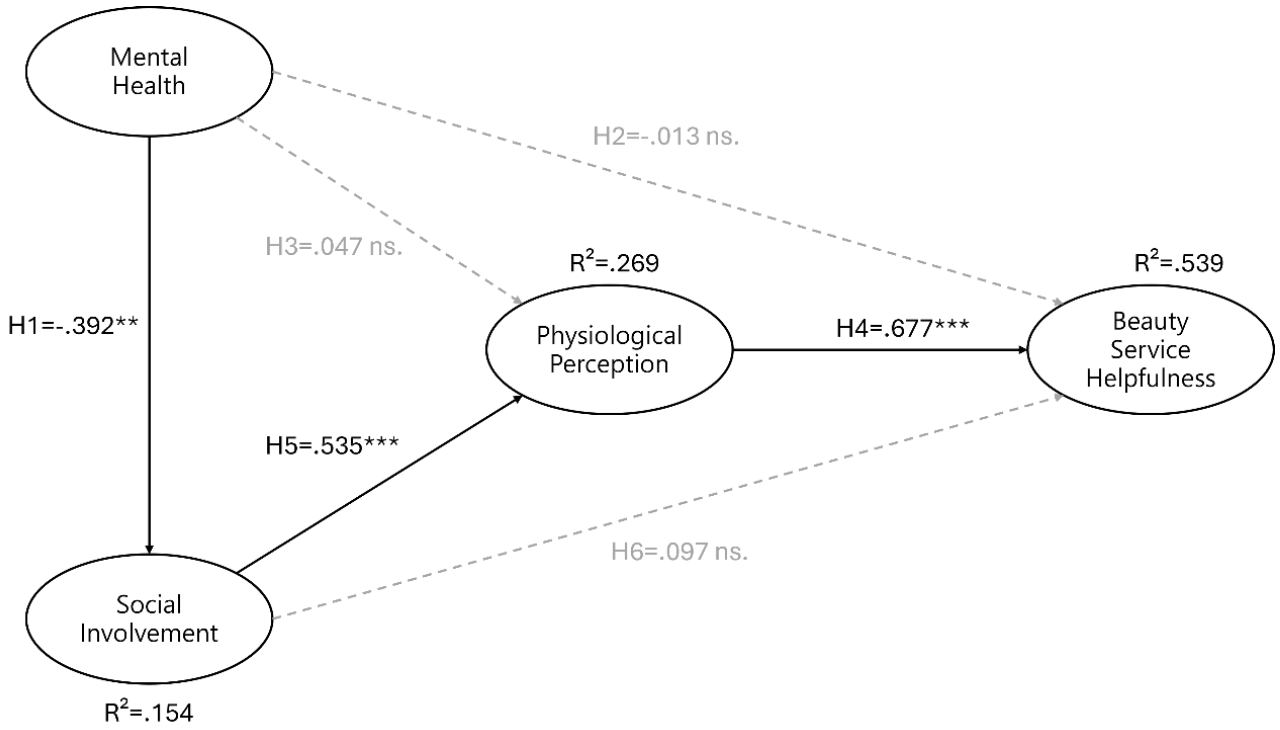

Figure 2. Standardized path coefficients of research model

*Note. The figure displays the standardized path coefficients (β) and coefficients of determination (R^2). Solid lines indicate significant paths, while dashed grey lines indicate non-significant paths (ns). ** $p < .01$; *** $p < .001$.*

Source: By authors.

4.4 Hypothesis Testing Results

Mental Health: Contrary to the positive relationship hypothesized, Mental Health had a significant negative influence on Social Involvement (β = -.392, $p < .01$), suggesting that individuals with lower mental health scores were more likely to engage in social involvement. However, Mental Health did not have a significant direct effect on Physiological Perception (β = .047, $p > .05$) or Beauty Service Helpfulness (β = -.013, $p > .05$). Thus, H2 and H3 were not supported.

Social Involvement: Social Involvement showed a strong, positive, and significant effect on Physiological Perception (β = .535, $p < .001$), supporting H5. However, its direct path to Beauty Service Helpfulness was not significant (β = .097, $p > .05$), meaning H6 was not supported.

Physiological Perception: The relationship between Physiological Perception and Beauty Service Helpfulness was positive and highly significant (β = .677, $p < .001$), providing strong support for H4. The SmartPLS analysis result graph shows as Figure 3.

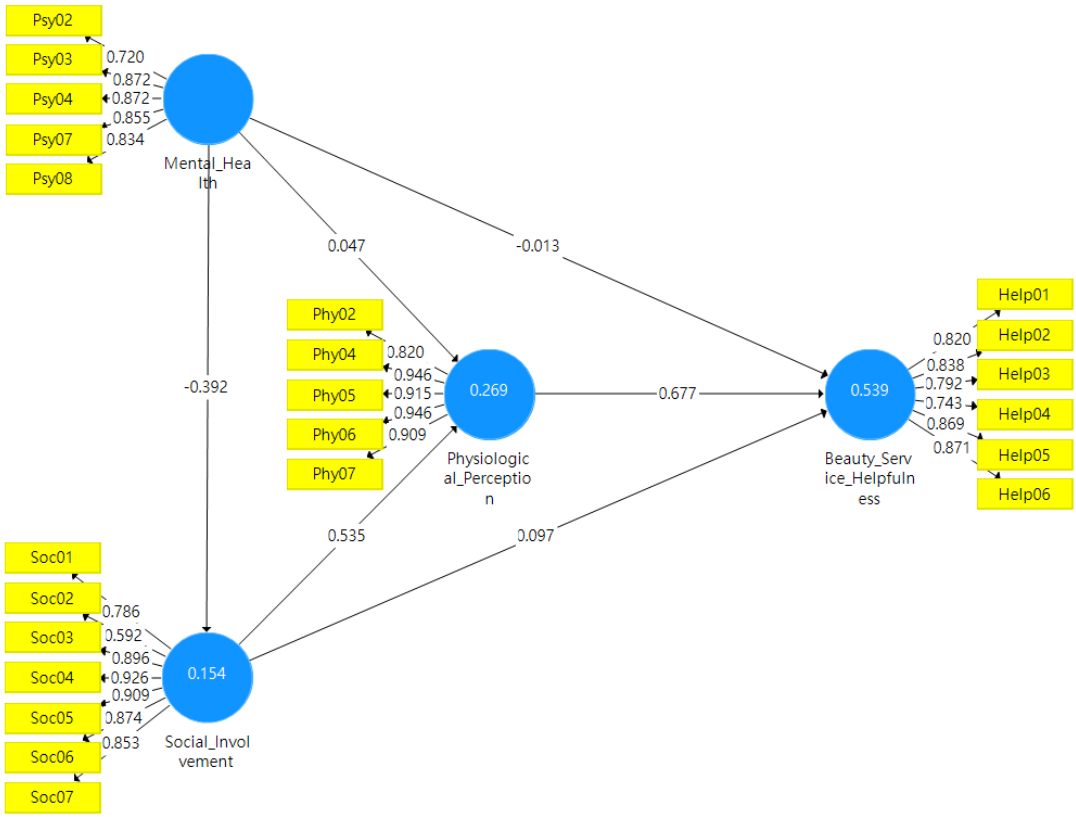

Figure 3. Smart PLS output

Source: By authors.

4.5 Summary of Mediation

The pattern of significance (solid lines versus dashed lines) indicates a full serial mediation. Mental Health influences Beauty Service Helpfulness indirectly through the specific pathway of increasing Social Involvement, which subsequently enhances Physiological Perception. Direct paths from Mental Health to the outcome were non-significant.

5. Conclusions and Suggestions

This study investigated the structural relationships between mental health, social involvement, physiological perception, and the perceived helpfulness of beauty services among middle-aged and older adults. By integrating empirical path analysis with specific service interventions (e.g., scalp care and nail services), the following key conclusions were drawn:

5.1 Conclusions

5.1.1 Validation of beauty services as a holistic health intervention

The findings confirm that beauty services offer significant positive psychological and physiological benefits, extending beyond aesthetic improvement. Participants who regularly engaged in services such as scalp care and nail art demonstrated superior outcomes in anxiety reduction, self-esteem, hand dexterity, and physiological relaxation compared to non-participants. This validates

beauty care as an empirically supported, non-pharmacological intervention suitable for geriatric health promotion. Overall, the results support the core proposition of this study that beauty services should be conceptualized not merely as appearance-enhancing activities, but as a form of holistic health intervention that integrates mental, social, and physiological benefits for older adults.

5.1.2. The pivotal role of social and physiological mechanisms

The study elucidated a critical serial mechanism: beauty services facilitate social interaction, which significantly enhances life satisfaction and physiological perception. The path analysis revealed that the value of beauty services is not derived solely from the outcome, but from the process—specifically, social engagement acts as a catalyst that heightens physiological sensory comfort. This "social-physiological" pathway is the primary driver of the service's perceived helpfulness. These findings highlight the central contribution of this research: clarifying that the perceived helpfulness of beauty services among older adults is fundamentally process-based and is driven by the dynamic interaction between social involvement and embodied sensory experience, rather than by mental health status alone.

5.1.3. Age-Related variations in service perception

A notable demographic finding is the inverse relationship between age and service receptivity. Older participants (particularly the "old-old" cohort) exhibited a declining trend in physiological comfort and willingness to engage in social interaction. This suggests that while the intervention is effective, the current delivery models may need adaptation to accommodate the declining physical resilience and social energy of advanced age groups. This age-related variation underscores the importance of tailoring beauty service programs to different stages of later life, reinforcing the study’s emphasis on person-centered and age-sensitive service design as a key direction for practice.

5.1.4. Confirmation of the integrated health model

The research model demonstrated robust logical consistency and statistical power ($R^2 = .539$ for Service Helpfulness). It successfully positions beauty services as an integrated strategy for enhancing mental health, physical function, and social participation. These results contribute significantly to theories of active aging and provide a theoretical basis for "aging-in-place" practices. Taken together, the empirical validation of this integrated model constitutes the core theoretical contribution of the study, showing that beauty services can be systematically incorporated into broader frameworks of community-based and long-term care for older adults

5.1.5 Future research directions

Building on the core finding that beauty services operate through a social–physiological pathway to support holistic well-being in later life, the present study offers a novel empirical framework for repositioning beauty care within geriatric health promotion. Nonetheless, several avenues warrant further investigation to advance both theory and practice.

First, longitudinal and experimental designs (e.g., randomized controlled trials) are recommended to verify the temporal causality of the proposed “social–physiological” pathway and

to evaluate the long-term effects of beauty service interventions on the mental, physical, and social health of older adults.

Second, future studies should incorporate objective physiological indicators—such as cortisol levels, heart rate variability (HRV), grip strength, and blood pressure—to complement self-reported measures and strengthen the validity of the model's physiological dimension.

Third, given the age-related variations identified in this study, further research should examine the differential responsiveness of distinct subgroups, including the "old-old," frail older adults, and individuals with mild cognitive impairment, in order to develop more age-sensitive and person-centered service protocols.

Fourth, cross-cultural and gender-comparative studies are encouraged to test the generalizability of the integrated health model, particularly across populations with differing cultural perceptions of beauty care and varying access to community-based long-term care services.

Fifth, future research should explore how beauty services can be systematically integrated into formal long-term care policies and community-based care frameworks, examining the feasibility, cost-effectiveness, workforce training requirements, and policy implications of positioning beauty care as a recognized component of holistic geriatric intervention.

Collectively, these directions are expected to refine the theoretical model proposed in this study, enhance its translational value, and reinforce the role of beauty services as a sustainable, evidence-based pathway toward successful aging and aging-in-place.

5.2 Suggestions

Based on the empirical evidence, this study proposes the following recommendations for policy, practice, and future research.

5.2.1. Policy implications

(1) Integration into National Health Promotion Frameworks

It is recommended that the government incorporate non-pharmacological beauty interventions—such as aromatherapy, massage, and nail care—into the policy framework of the "Strong Generation" (Zhuang Shi Dai) initiative and the Long-term Care 3.0 plan. Recognizing these services as legitimate strategies for disability prevention and mental health support will broaden the scope of senior welfare.

(2) Establishment of Community Beauty-Health Stations

Policymakers should incentivize the convergence of community care centers and local beauty industries. Subsidies could be provided to establish "Community Beauty-Health Stations" that offer accessible services. Furthermore, establishing a mechanism for regular tracking and effectiveness assessment is essential to ensure these policies deliver evidence-based health outcomes.

5.2.2 Practical and managerial implications

(1) Workforce Development for Geriatric Beauty Care

There is an urgent need to cultivate a specialized workforce. Training programs should bridge the gap between cosmetology and geriatric health, offering cross-disciplinary certifications that equip practitioners with skills in both beauty techniques and senior health management.

(2) Design of Age-Appropriate Protocols

Service providers must move away from a "one-size-fits-all" approach. Treatments should be stratified by age and physical capability. For instance, protocols for the oldest-old should prioritize sensory comfort and shorter durations to address the finding of reduced physiological tolerance in this demographic.

(3) Localization and Innovation in Service Delivery

To lower barriers to entry, services should be deeply embedded in the community—integrating with senior learning centers and health stations. Additionally, the industry should innovate through mobile services (home visits) and digital integration (remote consultation platforms). These "hybrid" models (Health + Beauty) align with the core philosophy of aging-in-place, ensuring accessibility for seniors with limited mobility.

5.2.3 Recommendations for future research

(1) Interdisciplinary and Longitudinal Designs:

Future studies should adopt an interdisciplinary approach, collaborating with public health, psychology, and social work fields. Longitudinal tracking is particularly necessary to capture the long-term impact of beauty interventions on the trajectory of physical and mental decline.

(2) Cross-Cultural and Comparative Studies:

To refine the theoretical model, future research should conduct cross-national comparisons to understand how cultural backgrounds influence the acceptance and efficacy of beauty services for the elderly. This will help in developing a localized yet globally relevant theory of health promotion.

(3) Development of Specialized Metrics:

Researchers should develop and validate assessment tools specifically tailored to the elderly population’s perception of beauty, physiological sensitivity, and social engagement. Standardized metrics will enhance the scientific rigor of future evaluations in this emerging field.

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Conflicts of Interest

The authors confirm that there are no conflicts of interest.

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