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Entrepreneurial Service Capabilities, Sustainable Tourism Management, and Economic Value Creation in Senior Health Tourism Service Systems

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Abstract. This research is a study of the impact of health tourism entrepreneur competency on sustainable tourism management and economic value added in the senior health tourism service business. The research used a quantitative approach and collected data from health tourism entrepreneurs in the elderly age group, who operate businesses in Bangkok and the central region. A questionnaire was collected from a sample of 400 people. The data was analyzed by partial least squares structural equation modeling (PLS-SEM) to study the relationship between variables. The results of the analysis showed that health tourism entrepreneur competency had a direct impact on sustainable tourism management and economic value added, while sustainable tourism management had a direct impact on economic value added and acted as a mediating variable between health tourism entrepreneur competency and economic value added. The results of this research highlight the importance of developing the competencies of health tourism entrepreneurs in promoting sustainable management and adding economic value, which has important implications for policy formulation, training program development and business strategies. Promoting the use of environmentally friendly technologies and approaches can help healthy tourism businesses grow sustainably and become internationally competitive.

Keywords: health tourism entrepreneur competency, sustainable tourism management, economic value added, senior health tourism service business

1. Introduction

The rapid expansion of the global aging population has significantly transformed both the tourism and healthcare industries (Simasathiansophon et al., 2020; Hu et al., 2023; Burinskienė et al., 2024). As life expectancy increases and older adults actively pursue wellness, preventive care, and quality-of-life enhancement, senior health tourism has emerged as a strategically important and growing service sector (Faraji & Onputtha, 2025). Unlike conventional leisure tourism, senior health tourism operates as a complex service system that integrates healthcare provision, accommodation, transportation, accessibility arrangements, and continuous service coordination across multiple stakeholders (Wernz et al., 2014; Karadayi-Usta, 2025). The delivery of such services requires not only high standards of care but also efficient logistics management, reliable scheduling, and transparent information exchange to ensure safety and service continuity for elderly travelers. In this context, sustainability extends beyond environmental considerations to include operational efficiency, resource optimization, and long-term service reliability (Hassan, 2000). Therefore, the competitiveness and resilience of senior health tourism enterprises depend on their capacity to manage integrated service operations that balance quality, accessibility, and economic viability within increasingly complex service environments.

Within integrated service systems, entrepreneurial competence represents a critical strategic resource that shapes organizational performance and adaptability (Ghimire, 2024; Stockhaus et al., 2026). From a resource-based and service capability perspective, firm-specific competencies enable the effective configuration and orchestration of resources to create superior value (Komppula, 2014). In the context of senior health tourism, entrepreneurial competence extends beyond general managerial expertise to encompass service design capability tailored to elderly needs, logistics coordination capability ensuring accessibility and safety, and digital or informatics capability that supports routing, scheduling, and real-time information sharing (Ganguli & Ebrahim, 2017). These capabilities are particularly important for elderly tourists, who often require specialized accommodation, nutritional planning, mobility assistance, and clear communication to minimize risks and enhance overall experience quality. When strategically deployed, such competencies facilitate sustainable tourism management practices, including efficient resource utilization, risk reduction, stakeholder collaboration, and service reliability (Sotomayor, & Guillén, 2022). Through these mechanisms, entrepreneurial competence functions as a dynamic capability that not only enhances service quality but also strengthens long-term competitiveness and operational sustainability within senior-oriented health tourism systems.

Although prior studies have examined sustainable tourism management, resource efficiency, and economic performance within tourism contexts (Hassan, 2000; Peters et al., 2019), limited research has explicitly investigated the mechanism through which entrepreneurial service capabilities translate into economic value creation via sustainable management practices, particularly in senior health tourism services. Existing literature frequently emphasizes technological adoption or general sustainability initiatives (Kimbu et al., 2020), yet the transformation of entrepreneurial competencies into structured service management processes remains under-theorized. In particular, the mediating role of sustainable tourism management in linking competence and economic value creation has not been sufficiently conceptualized or empirically validated. This limitation restricts a comprehensive understanding of how logistics coordination, digital integration, and service design capabilities collectively influence integrated service system performance. Consequently, there is a need for a theoretically grounded and empirically tested model that clarifies the structural relationships among entrepreneurial competence, sustainable tourism management, and economic value outcomes in aging-focused tourism markets (Patterson, & Balderas-Cejudo, 2023; Teruel-Sanchez et al., 2025).

To address this gap, the present study develops and tests a structural model examining the relationships among entrepreneurial competence, sustainable tourism management, and economic value creation in the senior health tourism service sector. By conceptualizing entrepreneurial competence as a multidimensional service capability and positioning sustainable tourism management as a mediating

mechanism, this study provides a structured explanation of how capabilities are transformed into measurable value outcomes. The research contributes to the literature in three primary ways. First, it extends capability-based and service system perspectives to the domain of senior health tourism. Second, it highlights the role of logistics coordination and informatics-enabled service integration in enhancing sustainable performance and economic value. Third, it offers empirically grounded implications for practitioners and policymakers seeking to strengthen operational efficiency, accessibility, and long-term competitiveness in aging-oriented tourism markets. Through this integrated framework, the study advances understanding of how entrepreneurial capabilities shape sustainable value creation within complex health tourism service systems.

2. Literature Reviews

2.1. Health Tourism Entrepreneur Competency

Health tourism entrepreneur competency can be conceptualized as a multidimensional service capability that enables firms to effectively design, coordinate, and deliver integrated health tourism services, particularly within aging-oriented markets (Yusrita, & Efendi, 2024; Kumsri et al., 2022). Rather than being limited to individual knowledge, skills, and attitudes, such competency represents a strategic resource that supports service system orchestration and long-term competitiveness (Komppula, 2014). In the context of senior health tourism, this capability encompasses service design knowledge related to elderly health factors such as nutrition, exercise, mental well-being, and age-friendly facilities (Purnomo et al., 2020; Chongsitjiphol & Wongmonta, 2021), logistics coordination capability ensuring accessibility, environmental management, and compliance with tourism regulations, and digital or informatics capability including the use of navigation systems and travel management technologies to enhance operational efficiency and service reliability (Rodrigues et al., 2015; Szromek & Puciato, 2023; Cuong et al., 2025). Effective communication and professional service attitudes further strengthen trust, satisfaction, and long-term relationships with elderly tourists (Ganguli & Ebrahim, 2017; Kimbu et al., 2020). Through these integrated capabilities, health tourism entrepreneurs are better positioned to align service quality with sustainability objectives and economic performance outcomes.

2.2. Sustainable Tourism Management

Sustainable tourism management in the context of senior health tourism extends beyond environmental protection to encompass the systematic coordination of economic, social, and operational processes that ensure long-term service viability (Muhanna, 2006; Karadayi-Usta, 2025). Rather than being treated solely as a normative principle, sustainable tourism management can be conceptualized as a service orchestration mechanism through which entrepreneurial capabilities are transformed into measurable performance outcomes. It involves efficient resource utilization, waste and energy reduction, and the development of environmentally responsible products and services (Altinay & Sigala, 2016; Hasibuan et al., 2024). In senior-oriented health tourism, sustainability also requires the coordination of accessibility logistics, health and safety standards, stakeholder collaboration, and community engagement to preserve local cultural and natural assets (Hassan, 2000; Lordkipanidze et al., 2005). Effective management enhances community participation, strengthens local supply chains, and supports service reliability and quality (Komppula, 2014; Kimbu et al., 2020). By integrating environmental stewardship with operational efficiency and stakeholder alignment, sustainable tourism management functions as a structured process that mediates the relationship between entrepreneurial service capabilities and long-term economic value creation.

2.3. Economic Value Added

Economic value added in senior health tourism should be understood not merely as accounting profit, but as the net economic benefit generated after the effective deployment of organizational resources and capabilities (Buckley, 2023). While traditional EVA emphasizes financial surplus beyond the cost

of capital, in service-intensive sectors such as health tourism, value creation is closely linked to operational efficiency, service quality, stakeholder satisfaction, and long-term sustainability (Peters et al., 2019). In the context of senior-oriented services, economic value emerges when firms optimize resource utilization, enhance service reliability, and generate memorable and safe experiences for elderly tourists, thereby strengthening competitiveness and repeat visitation (Szromek & Puciato, 2023; Rodrigues et al., 2015). Moreover, value creation extends to local economic development through employment generation, SME growth, and responsible use of environmental resources (Altinay & Sigala, 2016). By integrating financial performance with operational sustainability and stakeholder benefits, economic value-added functions as a multidimensional performance outcome that reflects the effectiveness of sustainable tourism management and entrepreneurial service capabilities within health tourism systems.

2.4. Conceptual Framework and Hypothesis Development

Building upon the capability-based perspective, entrepreneurial competence in senior health tourism is expected to influence sustainable tourism management by enabling the effective configuration and coordination of service resources. Competencies related to service design, logistics coordination, and digital capability provide the operational foundation for implementing environmentally responsible practices, accessibility arrangements, and stakeholder collaboration within integrated service systems (Komppula, 2014; Ganguli & Ebrahim, 2017; Rodrigues et al., 2015). Entrepreneurs who possess regulatory knowledge, environmental awareness, and operational expertise are better positioned to integrate eco-friendly practices and efficient resource utilization into daily operations (Hassan, 2000; Purnomo et al., 2020). Such capabilities facilitate structured management processes that balance economic viability with social and environmental considerations. Therefore, entrepreneurial competence is expected to positively influence sustainable tourism management.

H1: Health tourism entrepreneur competency positively influences sustainable tourism management.

From a capability-performance standpoint, entrepreneurial competence may directly contribute to economic value creation, as firm-specific service capabilities enhance resource configuration and competitive positioning (Komppula, 2014; Buckley, 2023). Knowledge of elderly needs, service customization, regulatory compliance, and digital coordination improves operational efficiency and service quality, thereby strengthening competitiveness and financial performance (Muhanna, 2006; Ganguli & Ebrahim, 2017; Peters et al., 2019). Moreover, professional communication and customer-oriented attitudes foster trust, satisfaction, and repeat visitation, which are closely associated with revenue stability and long-term value generation in service industries (Szromek & Puciato, 2023). Accordingly, entrepreneurial competence is expected to have a direct positive effect on economic value added.

H2: Health tourism entrepreneur competency positively influences economic value added.

Sustainable tourism management, in turn, contributes to economic value creation by improving resource efficiency, reducing operational waste, enhancing stakeholder engagement, and strengthening community-based economic activities (Altinay & Sigala, 2016; Lordkipanidze et al., 2005). Effective sustainability practices not only lower long-term operational costs but also enhance destination competitiveness and reputation through responsible resource management and stakeholder collaboration (Kimbu et al., 2020; Hassan, 2000). In senior health tourism, high standards of safety, environmental responsibility, and service reliability further enhance tourist satisfaction and long-term loyalty, thereby supporting sustained economic performance (Szromek & Puciato, 2023; Peters et al., 2019). Thus, sustainable tourism management is expected to positively influence economic value added.

H3: Sustainable tourism management positively influences economic value added.

Finally, sustainable tourism management is proposed to mediate the relationship between entrepreneurial competence and economic value creation. Entrepreneurial capabilities provide the necessary resources and coordination mechanisms, yet their economic impact becomes more substantial when embedded within structured sustainability-oriented management practices (Komppula, 2014; Kimbu et al., 2020). Through sustainable tourism management, entrepreneurial competencies are translated into operational efficiencies, enhanced service reliability, and long-term stakeholder value creation (Altinay & Sigala, 2016; Hassan, 2000). Therefore, sustainable tourism management is expected to serve as a mediating mechanism linking entrepreneurial competence to economic value added.

H4: Sustainable tourism management mediates the relationship between health tourism entrepreneur competency and economic value added.

Consequently, the conceptual framework can be written and shown in Figure 1 as follows.

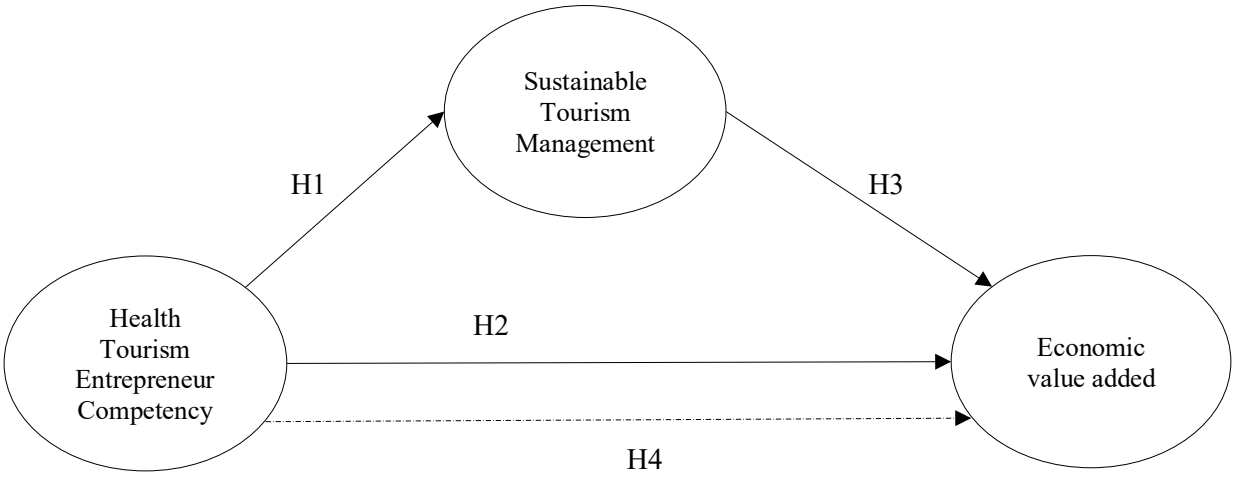


Fig. 1: Conceptual framework.

3. Research Methodology

This study employed a quantitative research design to examine health tourism entrepreneurs who provide services to elderly tourists in the Bangkok Metropolitan Area and the central region of Thailand, including Ratchaburi, Nakhon Pathom, Phetchaburi, and Prachuap Khiri Khan provinces. A total of 400 valid responses were collected using convenience sampling due to the accessibility of the target population and the absence of a comprehensive sampling frame. The sample size was considered adequate for partial least squares structural equation modeling (PLS-SEM), which is suitable for predictive and mediation-oriented research models and does not impose strict distributional assumptions (Bentler, & Yuan, 1999; Hair et al., 2012; Kline, 2023). Data was collected through a structured questionnaire consisting of four sections: (1) demographic information, including gender, age, education level, role in tourism management, and monthly income; (2) health tourism entrepreneur competency; (3) sustainable tourism management; and (4) economic value added. All items were measured using a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree).

The measurement items employed in this study were adapted from multiple established sources. Health tourism entrepreneur competency was operationalized across three dimensions: knowledge, skills, and attitude. The knowledge dimension was assessed through areas including health knowledge, facility knowledge, tourism law knowledge, travel technology knowledge, Internet literacy, and service

provision knowledge (Lordkipanidze & Brezet, 2005; Ganguli & Ebrahim, 2017; Purnomo et al., 2020; Traskevich & Fontanari, 2023; Chongsitjiphol & Wongmonta, 2021). Sample items included statements such as "I possess sufficient knowledge of health and life support systems" and "I understand facilities and tourism resources suitable for elderly travelers". The skills dimension reflects operational and interpersonal capabilities required for health tourism entrepreneurship, including communication ability, destination recommendation, use of travel technologies, time management, problem-solving, adaptability, and relationship-building skills (Altinay & Sigala, 2016; Ganguli & Ebrahim, 2017; Purnomo et al., 2020). Representative items included "I can recommend tourism destinations that match tourists' needs" and "I am able to effectively use travel-related technologies such as GPS systems". Finally, the attitude dimension refers to entrepreneurs' service orientation and psychological readiness in managing tourism services. This dimension includes positive service attitudes, proactive problem-solving orientation, openness to change, stress management, and concern for tourists' health and well-being (Altinay & Sigala, 2016; Ganguli & Ebrahim, 2017; Purnomo et al., 2020; Ritchie & Crouch, 2003; Szromek & Puciato, 2023; Traskevich & Fontanari, 2023). Sample items included "I maintain a positive attitude toward working in health tourism services" and "I am willing to adapt to changing situations and service environments."

For the sustainable management of tourism, it was conceptualized as practices that balance economic development with resource conservation and responsible tourism operations. The construct encompasses efficient resource utilization, environmental impact reduction, maintenance of health and safety standards, promotion of sustainability-oriented products, multi-sectoral planning, utilization of local sustainable products, and the development of a sustainable tourism culture (Altinay & Sigala, 2016; Lordkipanidze & Brezet, 2005; Ganguli & Ebrahim, 2017; Hassan, 2000; Kimbu et al., 2020; Komppula, 2014; Mohamad & Nasir, 2019; Rodrigues et al., 2015; Szromek & Puciato, 2023; Chongsitjiphol & Wongmonta, 2021). Sample measurement items included statements such as "Our tourism operations promote economic development while preserving local resources and culture" and "Resources are utilized efficiently to minimize environmental impacts". For economic value added, it was defined as the economic and social benefits generated from health tourism activities, including increased profitability, expanded income opportunities for local communities, industry growth, efficient resource utilization, environmental responsibility, service continuity, improved living conditions for elderly tourists, and enhanced tourist satisfaction (Ganguli & Ebrahim, 2017; Hassan, 2000; Kimbu et al., 2020; Mohamad & Nasir, 2019). Representative items included "Health tourism activities contribute to increased revenue generation" and "Health tourism development creates additional income opportunities for local communities".

The reliability and validity of the measurement model were evaluated using established criteria for partial least squares structural equation modeling (PLS-SEM). Convergent validity was assessed by examining outer loadings, composite reliability (CR), and average variance extracted (AVE). Outer loadings above 0.70 were considered acceptable, while CR values exceeding 0.70 and AVE values above 0.50 indicated adequate internal consistency and convergent validity (Hair et al., 2012). Discriminant validity was assessed using the Fornell–Larcker criterion, which requires that the square root of the AVE for each construct exceed its correlations with other constructs (Fornell & Larcker, 1981). This ensures that each latent variable shares more variance with its own indicators than with other constructs in the model. After confirming the adequacy of the measurement model, the structural relationships among health tourism entrepreneur competency, sustainable tourism management, and economic value added were examined using PLS-SEM with bootstrapping procedures to assess the significance of path coefficients.

4. Results

4.1. Profile of Respondents

The researchers studied the personal data of the respondents, including information on gender, age,

education level, roles in tourism management, and monthly income, which are set out as follows:

Table 1. Profile of Respondents

Profile	Person (s)	%	Profile	Person (s)	%
Gender			**Roles in Tourism Management**		
Male	154	38.5	Entrepreneur/trader	315	78.75
Female	246	61.5	Staff/operational-level officer	63	15.75
Age			Managerial officer/director	22	5.5
Age 60-69	324	81.0	**Monthly Income**		
Age 70-79	61	15.25	Less than 25,001 baht	253	63.2
Age 80+	15	3.75	25,001- 50,000 baht	119	29.8
Education Level			50,001-75,000 baht	16	4.0
Lower than bachelor's degree	326	81.5	More than 75,000 baht	12	3.0
Bachelor's degree	62	15.5			
Higher than bachelor's degree	12	3.0			

From Table 1, it was found that many respondents were female (61.5%), while 38.5% were male. In terms of age, most respondents were in the age range of 60-69 years (81.0%), followed by those in the age range of 70-79 years (15.25%), then those aged 80 and over (3.75%). The majority had lower education levels than a bachelor's degree (81.5%), while 15.5% had a bachelor's degree and only 3.0% had a higher degree. In the role of tourism management, most of the respondents worked as entrepreneurs or traders (78.75%), followed by operational staff (15.75%) and senior executives (5.5%). In terms of monthly income, the majority of the sample group had an income of less than 25,001 baht (63.2%), followed by those with an income between 25,001, then 50,000 baht (29.8%), while the groups with incomes of 50,001-75,000 baht and more than 75,000 baht accounted for only 4.0% and 3.0%, respectively.

4.2. Descriptive Statistics and Measurement Validation

In the descriptive analysis of the three groups of variables, namely health tourism entrepreneur competency, sustainable tourism management, and economic value added, the researcher used the mean, standard deviation (S.D.), CV, Kurtosis, and Skewness. In addition, in the model development, the researcher assessed the reliability of the analytical variables by considering various indices, such as Loading, which indicates the relationship between the observed variables and the latent variables, rho_c (composite reliability) and rho_a (reliability of average variance extracted) to measure the internal consistency of the variables, AVE (average variance extracted), which reflects the amount of variance in the variables explained by the latent variables, and α (Cronbach's Alpha), which is an indicator of reliability in terms of consistency within the group of variables, as shown in Table 2 and 3. In addition, the discriminant validity was assessed separately using the Fornell-Larcker Criterion, which considers that the square root of the AVE in each variable must be higher than the correlation value with other variables. If this criterion is met, it will confirm that each dimension of measurement is clearly different and not too correlated, as shown in Table 4.

Table 2. Descriptive Statistics and First-order Confirmatory Factor Analysis

Measure	Mean	S.D.	CV	Kur	Skew	Loading	t-value	rho_c	rho_a	AVE	α
COMK1	4.183	0.790	0.189	-0.001	-0.672	0.754	25.445	0.922	0.899	0.662	0.898
COMK2	4.067	0.838	0.206	0.194	-0.639	0.827	42.016				
COMK3	4.103	0.873	0.213	0.519	-0.834	0.827	41.379				
COMK4	3.980	0.880	0.221	-0.394	-0.469	0.817	45.374				
COMK5	4.100	0.857	0.209	0.834	-0.863	0.831	43.099				
COMK6	4.080	0.859	0.211	0.185	-0.700	0.823	36.417				
COMS1	4.080	0.774	0.190	-0.069	-0.497	0.800	35.450	0.925	0.925	0.657	0.925
COMS2	4.105	0.880	0.214	0.441	-0.825	0.799	38.440				
COMS3	4.045	0.879	0.217	0.150	-0.708	0.769	28.369				
COMS4	4.025	0.821	0.204	-0.264	-0.481	0.806	39.107				
COMS5	4.080	0.874	0.214	-0.201	-0.630	0.800	42.481				
COMS6	4.010	0.869	0.217	0.161	-0.662	0.840	46.439				
COMS7	4.130	0.817	0.198	0.264	-0.713	0.834	41.763				
COMS8	4.003	0.942	0.235	0.054	-0.689	0.830	44.636				
COMA1	4.112	0.848	0.206	-0.055	-0.660	0.824	43.513	0.930	0.909	0.687	0.909
COMA2	4.112	0.869	0.211	-0.364	-0.633	0.814	42.610				
COMA3	4.117	0.848	0.206	0.709	-0.844	0.836	41.604				
COMA4	4.147	0.843	0.203	0.258	-0.788	0.831	45.279				
COMA5	4.122	0.847	0.205	0.325	-0.756	0.826	37.379				
COMA6	4.138	0.859	0.208	-0.241	-0.648	0.841	50.094				
TOUS1	4.230	0.804	0.190	-0.371	-0.701	0.805	38.488	0.935	0.919	0.672	0.918
TOUS2	4.190	0.748	0.179	-0.888	-0.397	0.780	36.013				
TOUS3	4.110	0.829	0.202	0.039	-0.604	0.817	41.444				
TOUS4	4.103	0.870	0.212	0.833	-0.863	0.848	50.525				
TOUS5	4.060	0.878	0.216	-0.079	-0.628	0.840	51.439				
TOUS6	4.098	0.832	0.203	-0.504	-0.498	0.789	34.970				
TOUS7	4.090	0.769	0.188	-0.306	-0.420	0.855	47.419				
EVA1	3.990	0.834	0.209	-0.579	-0.397	0.828	42.314	0.944	0.934	0.654	0.934

Measure	Mean	S.D.	CV	Kur	Skew	Loading	t-value	rho_c	rho_a	AVE	α
EVA2	3.913	0.916	0.234	-0.221	-0.550	0.767	33.562				
EVA3	3.993	0.847	0.212	-0.212	-0.481	0.807	37.492				
EVA4	3.998	0.820	0.205	0.290	-0.569	0.790	32.693				
EVA5	4.015	0.905	0.225	-0.302	-0.598	0.814	43.338				
EVA6	3.995	0.834	0.209	-0.069	-0.510	0.803	35.987				
EVA7	4.050	0.838	0.207	0.025	-0.606	0.809	30.608				
EVA8	3.982	0.904	0.227	0.077	-0.618	0.804	34.333				
EVA9	4.015	0.848	0.211	-0.589	-0.448	0.852	54.138				

Note: COMK 1-6 = Knowledge, COMS 1-8 = Skills, COMA 1-6 = Attitudes, TOUS 1-7 = Sustainable Tourism Management, EVA1-9 = Economic value added

From Table 2, it was found that knowledge, skills, attitudes, sustainable tourism management, and economic value added had mean scores in the range of 3.913-4.230 and standard deviations (S.D.) in the range of 0.748-0.942, indicating consistency in the answers of the questionnaire respondents. In addition, the CV, Kur and Skew values were at an appropriate level, confirming the reliability of the data. The loading values of all variables were higher than 0.75 and the reliability values of the model, such as rho_c (0.922-0.944), rho_a (0.899-0.934), and AVE (0.654-0.687), were at an acceptable level, especially the α value (0.898-0.934) which indicated the internal reliability of the measurement tool. In addition, it was found that "sustainable tourism management" had the highest mean score (4.230). The results of this study indicate that all five factors are important for developing and adding value in the tourism industry.

Table 3. Descriptive Statistics and Second-order Confirmatory Factor Analysis of Health Tourism Entrepreneur Competency

Measure	Mean	S.D.	CV	Kurtosis	Skewness	Loading	t-value	rho_c	rho_a	AVE	α
COMK	4.085	0.693	0.170	1.229	-0.849	0.948	109.402	0.969	0.966	0.610	0.966
COMS	4.060	0.695	0.171	0.761	-0.732	0.973	256.502				
COMA	4.125	0.708	0.172	0.614	-0.776	0.943	113.446				

Note: COMK = Knowledge, COMS = Skills, COMA = Attitudes

From Table 3, it was found that health tourism entrepreneur competency consisting of knowledge (COMK), skills (COMS) and attitudes (COMA) had a mean score of 4.060-4.125 and a standard deviation (S.D.) of 0.693-0.708, with a reliability value (rho_c) of 0.969 and an AVE value of 0.610, which were at an acceptable level. In addition, the loading value of each component was in the range of 0.943-0.973 with a t-value as high as 256.502 for skills (COMS), indicating a stable relationship between the components. The results of this study confirmed that knowledge, skills and attitudes are all important in enhancing the competence of entrepreneurs in this industry.

Table 4. Discriminant validity by Fornell-Larcker Criterion

Variables	COMP	TOUS	EVA
Health Tourism Entrepreneur Competency (COMP)	**0.781**		
Sustainable Tourism Management (TOUS)	0.690	**0.819**	
Economic value added (EVA)	0.677	0.791	**0.808**

Note: Bold values in diagonal line display the square root of AVE while the others are a correlation matrix

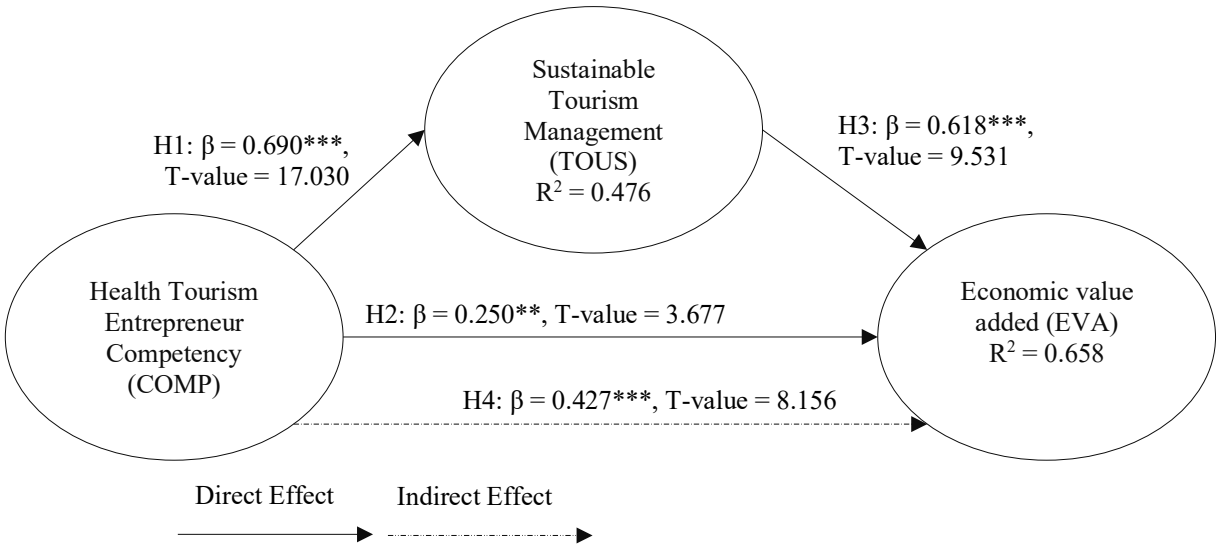
From Table 4, it was found that the value in the diagonal, representing the square root of AVE, was higher than the correlation values between other variables, which indicated the differences of each variable. For example, the competence of entrepreneurs in the health tourism industry (COMP) had a square root of AVE equal to 0.781, which was higher than the correlation values with sustainable tourism management (TOUS; 0.690) and economic value added (EVA; 0.677). The results of this study confirmed that each variable in the model was clearly different and did not overlap in meaning, reflecting the appropriateness of the analytical model used.

4.3. Finalized Model and Hypothesis Analysis

Table 5 Hypothesis Testing

Hypotheses	Standardized Estimates	t-value	P values	Result
Direct Hypotheses				
H1: COMP → TOUS	0.690	17.030	0.000	Accepted
H2: COMP → EVA	0.250	3.677	0.000	Accepted
H3: TOUS → EVA	0.618	9.531	0.000	Accepted
Mediating Hypotheses				
H4: COMP → TOUS → EVA	0.427	8.156	0.000	Accepted

Note: COMP: health tourism entrepreneur competency, TOUS: sustainable tourism management, EVA: economic value added



Note: **Significant at 0.01 based on 5000 sample bootstraps,
***Significant at 0.001 based on 5000 sample bootstraps

Fig. 2: Finalized Model.

From Table 5 and Fig. 2, it was found that there was a significant relationship between the health tourism entrepreneur competency (COMP), sustainable tourism management (TOUS), and economic value added (EVA). Hypothesis H1 that stated that COMP affects TOUS was accepted with statistical significance (standardized estimate = 0.690, t-value = 17.030, p = 0.000), as well as hypothesis H2 that stated COMP directly affects EVA (standardized estimate = 0.250, t-value = 3.677, p = 0.000). In addition, hypothesis H3 that stated that TOUS directly affects EVA was accepted (standardized estimate = 0.618, t-value = 9.531, p = 0.000), as well as the hypothesis H4 that stated COMP affects EVA through TOUS as a mediating variable was accepted (standardized estimate = 0.427, t-value = 8.156, p = 0.000). The results indicate that COMP has a direct impact on both TOUS and EVA, and TOUS plays an important role as a mediating variable between COMP and EVA.

Table 6: Explanatory Power of the Model

Predictive Variables	Outcomes Variables	R^2	f^2
Health Tourism Entrepreneur Competency	Sustainable Tourism Management	0.476	0.910
Health Tourism Entrepreneur Competency	Economic Value Added	0.658	0.096
Sustainable Tourism Management			0.585

From Table 6, it was found that health tourism entrepreneur competency demonstrates substantial explanatory power in predicting sustainable tourism management, with an R^2 value of 0.476 and a large effect size (f^2 = 0.910), indicating a strong practical contribution of entrepreneurial competency to sustainability practices. In addition, health tourism entrepreneur competency explains a considerable proportion of variance in economic value added (R^2 = 0.658), although the corresponding effect size is relatively small (f^2 = 0.096), suggesting that other contributing factors may also influence economic performance. Furthermore, sustainable tourism management itself exhibits notable explanatory relevance within the structural model, reinforcing its role as a key mediating mechanism linking entrepreneurial competency to economic value creation.

Table 7. Direct Effect, Indirect Effect, Total Effect

Variables	TOUS			EVA		
	DE	IE	TE	DE	IE	TE
COMP	0.690***	-	0.690***	0.250***	0.427***	0.677***
TOUS	-	-	-	0.618***	-	0.618***

Note: COMP: health tourism entrepreneur competency, TOUS: sustainable tourism management, EVA: economic value added

From Table 7, it was found that the competence of entrepreneurs in the health tourism industry (COMP) had a direct impact on sustainable tourism management (TOUS) equal to 0.690 and a total impact equal to 0.690, which shows the importance of COMP in supporting TOUS. In addition, COMP had a direct impact on economic value added (EVA) equal to 0.250 and an indirect impact through TOUS equal to 0.427, resulting in a total impact on EVA equal to 0.677. For TOUS, it had a direct impact on EVA equal to 0.618, which shows the important role of sustainable management in directly enhancing economic value added. The results of this study indicate that COMP is a key factor that promotes both sustainable management and economic value added, especially when considering the indirect impact through TOUS.

5. Discussion

The results indicate that H1 was statistically supported, confirming that health tourism entrepreneur competency positively influences sustainable tourism management. This finding suggests that entrepreneurial capabilities function as a foundational resource for implementing structured sustainability practices within senior health tourism services. Entrepreneurs who possess knowledge of

health standards, tourism regulations, and resource management technologies are better equipped to integrate environmentally responsible operations with service delivery (Purnomo et al., 2020; Kimbu et al., 2020; Yusrita, & Efendi, 2024). Beyond technical knowledge, skills such as problem-solving, time management, and effective communication enhance coordination among stakeholders and facilitate the adoption of eco-friendly and socially responsible practices (Komppula, 2014; Kimbu et al., 2020). In particular, communication capability strengthens collaboration with local communities, enabling culturally appropriate and environmentally sustainable tourism development (Lordkipanidze et al., 2005; Cuong et al., 2025). Furthermore, adaptive and resilient managerial orientations support effective responses to regulatory and market changes, thereby reinforcing long-term sustainability (Hassan, 2000). These findings reinforce the view that entrepreneurial competency serves as a capability-based driver of sustainable tourism management by enabling the systematic alignment of operational efficiency, stakeholder engagement, and environmental responsibility.

The findings further indicate that H2 was statistically supported, demonstrating that health tourism entrepreneur competency has a direct positive effect on economic value added. This result suggests that entrepreneurial capabilities contribute not only to sustainable management processes but also to immediate performance outcomes. Knowledge of health standards, tourism regulations, and service customization enables entrepreneurs to design offerings that effectively meet the specific needs of elderly tourists, thereby enhancing service quality and customer satisfaction (Ganguli & Ebrahim, 2017; Chongsitjiphol & Wongmonta, 2021). In addition, digital competence and effective service coordination improve operational efficiency and market responsiveness, strengthening competitiveness and revenue performance within service systems (Rodrigues et al., 2015; Peters et al., 2019). Compliance with legal standards and service quality guidelines further enhances trust and repeat visitation, contributing to stable financial performance. Soft skills such as communication, adaptability, and problem-solving improve service reliability and stakeholder relationships, reinforcing long-term economic outcomes (Komppula, 2014; Altinay & Sigala, 2016). Moreover, a sustainability-oriented mindset may reduce operational costs through efficient resource utilization and the integration of local products, thereby supporting both firm-level profitability and community-level economic benefits (Lordkipanidze et al., 2005; Peters et al., 2019). The results highlight the role of entrepreneurial competency as a capability-based driver of economic value creation within senior health tourism service systems.

The results further indicate that H3 was statistically supported, demonstrating that sustainable tourism management positively influences economic value added. This finding highlights the role of sustainability practices as a performance-enhancing mechanism within senior health tourism service systems. Effective resource utilization—such as energy efficiency, waste reduction, and environmentally responsible operations—can lower operational costs while simultaneously strengthening destination competitiveness and stakeholder trust (Altinay & Sigala, 2016; Hassan, 2000). Beyond cost efficiency, sustainable management enhances service reliability and health and safety standards, which are critical determinants of repeat visitation and long-term revenue stability in service industries (Peters et al., 2019; Szromek & Puciato, 2023). Collaboration with local communities and the integration of locally sourced products further stimulate regional economic activity and support small and medium enterprises, contributing to broader community-level economic benefits (Lordkipanidze et al., 2005; Kimbu, 2020). In the context of senior health tourism, maintaining high health and safety standards and ensuring accessibility strengthens tourist confidence and satisfaction, reinforcing sustainable revenue generation. The findings suggest that sustainable tourism management functions as a structured mechanism through which operational efficiency, stakeholder engagement, and community integration are translated into measurable economic value.

The results further confirm that H4 was statistically supported, indicating that sustainable tourism management mediates the relationship between health tourism entrepreneur competency and economic value added. This finding suggests that entrepreneurial capabilities generate stronger and more

sustainable economic outcomes when embedded within structured sustainability-oriented management practices. While competencies such as knowledge of health regulations, legal compliance, and digital technologies directly enhance service performance, their economic impact is amplified when translated into systematic resource management, stakeholder coordination, and environmentally responsible operations (Ganguli & Ebrahim, 2017; Komppula, 2014). Through sustainable tourism management, entrepreneurial expertise is operationalized into cost efficiency, service reliability, and community integration. Efficient resource utilization and environmentally responsible operations not only reduce operational costs but also strengthen destination competitiveness and stakeholder trust (Hassan, 2000; Altinay & Sigala, 2016). Collaboration with local communities further enhances regional economic linkages and supports small enterprises, contributing to broader economic stability (Lordkipanidze et al., 2005; Peters et al., 2019). These findings highlight the central role of sustainable tourism management as a value-transformation mechanism through which entrepreneurial capabilities are converted into enduring economic value at both firm and community levels.

Based on empirical findings, three major implications can be derived. First, the significant relationship between entrepreneurial competency and sustainable tourism management suggests that health tourism operators should prioritize capability development in service design, logistics coordination, and digital integration. Practical initiatives may include structured training programs focused on elderly-centered service design, accessibility planning, and the adoption of digital tools for routing, scheduling, and service monitoring. Strengthening communication skills and adaptive problem-solving can further enhance service reliability and long-term competitiveness. Second, the mediating role of sustainable tourism management indicates that competencies generate stronger economic value when embedded within structured sustainability practices. Entrepreneurs should therefore institutionalize environmental management systems, enforce health and safety standards, and collaborate with local communities to enhance resource efficiency and stakeholder trust. These coordinated efforts can translate operational improvements into measurable economic performance. Third, policy support should concentrate on enabling capability enhancement and sustainability-oriented operations rather than offering broad financial incentives alone. Government agencies may facilitate competency-building workshops, promote digital infrastructure for tourism coordination, and encourage partnerships among entrepreneurs, communities, and healthcare providers. Infrastructure development that improves accessibility and service integration for elderly tourists would further strengthen the long-term sustainability and competitiveness of the health tourism sector.

This study has several limitations that should be acknowledged. First, the sample was limited to health tourism entrepreneurs operating in Bangkok and the central region of Thailand. As tourism structures and resource conditions may differ across other regions, such as the northern and northeastern areas, the generalizability of the findings may be constrained. In addition, the use of convenience sampling restricts the representativeness of the sample and limits broader population inference. Second, the study relied on self-reported questionnaire data collected at a single point in time, which may introduce common method bias and restrict causal interpretation. Although statistical procedures were applied to ensure reliability and validity, future research may benefit from longitudinal designs to better capture dynamic relationships among entrepreneurial competency, sustainable tourism management, and economic value creation. Third, the model focused primarily on capability and management mechanisms. Future studies may extend the framework by incorporating contextual variables such as institutional support, technological readiness, or regional tourism development differences. Employing probability sampling techniques and mixed-method approaches, including interviews or field observations, would further enhance the robustness and contextual depth of findings.

6. Conclusion

The findings of this study underscore the strategic importance of entrepreneurial competency in shaping sustainable tourism management and economic value creation within senior health tourism services.

The results demonstrate that knowledge, skills, and attitudes collectively function as capability-based resources that not only directly influence economic value added but also exert a stronger indirect effect through sustainable tourism management. This confirms the mediating role of sustainability practices as a mechanism that transforms entrepreneurial capabilities into measurable and enduring economic outcomes. By integrating structured sustainability measures into service operations, health tourism enterprises can enhance service quality, optimize resource utilization, and strengthen long-term competitiveness. These findings highlight the need for policymakers, educational institutions, and investors to prioritize competency development, sustainability-oriented training programs, and supportive infrastructure to enhance the viability and international positioning of the health tourism industry. Future research may further examine regional variations, longitudinal effects, and the expanding role of digital integration in strengthening sustainable value creation within diverse health tourism contexts.

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