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Analysis of the Relationships Among the Value, Benefit, and Activities of Forest Culture in Korea: An Application of Means-Chain Value Theory

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Abstract: This study explores the relationship between forest culture (FC) and sustainable consumption by applying the means-end chain (MEC) theory. Compared with general products, FC products are consumed from a value consumption perspective, and their benefits have varying impacts on individuals and society. This study uses MEC theory to link the preferred attributes of FC with the expected benefits and pursued values (PVs) of FC. We (1) identified the indicators of the expected benefits of PVs and preferred activities (PAs) of FC through factor analysis, (2) examined the relationships between these factors using MEC theory, and (3) validated the factors through structural equation modeling (SEM). We surveyed 1700 Koreans to explore how FC benefits, values, and activities relate to consumer behavior. Factor analysis divided PVs into symbolic, social, and consumption values and PAs into tourism–exploration, cultural–artistic, and living–leisure activities of FC. According to SEM analysis, the contributing characteristics of FC affect the PVs and, in turn, the PAs of FC, yielding an acceptable model fit (GFI > 0.9). Thus, the concrete attitudes of consumers toward FC were categorized via abstract concepts, which influenced their practical and behavioral attitudes. In conclusion, FC products should be developed with a focus on value consumption.

Keywords: means-end chain theory; forest culture; pursued value; consumption value; expected benefits; preferred activities; sustainable consumption

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1. Introduction

As the roles of forests have diversified, research has expanded beyond the traditional focus on sustainable development and protection to include contributions to revitalizing local economies and improving individual quality of life [1–4]. Although forest culture (FC) is deeply connected to both individuals and local communities, it has not been extensively studied. However, related areas such as forest healing, ecotourism, and forest recreation have gradually attracted increased research attention.

Forests have maintained long-standing, sustainable relationships with humans, providing products and services through their cultural, social, and ecological functions [5–7]. FC, which consists of products and services, provides humans with individual and social values globally—these comprise Western values, such as ecological, economic, and sociocultural values [8], and Eastern values, such as physical and mental values [9–13]. Identifying these values can contribute to the sustainable development of society [4,14,15].

The United Nations promotes sustainable development globally through its Sustainable Development Goals (SDGs), with sustainable consumption and production specifically outlined in SDG 12 [2,16–18]. Notably, according to the sub-targets of SDG 12, forests are closely related to sustainable tourism development, which can contribute to local economies, environmental protection, and community empowerment and education [2,19–22].

Covering 63% of the land area of South Korea, forests have been the foundation of the spirit and culture of the country. The definition of FC provided in Article 2 of Korea's Forest Recreation Act refers to the totality of mental and material products derived from the interaction between forests and humans, including traditions, heritage, and forest-related lifestyles, as well as all activities that utilize, view, enjoy, experience, and create forests [23]. Despite the importance and significance of the cultural value of Korean forests, public awareness of FC is low, at 37.7%, whereas interest in FC is high, at 81.9% [24]. This is because few studies have investigated how the cultural value of forests can be directly or indirectly consumed as products by individuals or communities.

Recently, Korean cultural content (e.g., K-pop, K-food) has been spreading globally, and its economic and social impact has been rapidly increasing. In addition, the importance of the cultural content industry, which is based on high technology and creativity, is gaining even more importance and is contributing significantly to the country's status. Forests have high value for conservation and utilization, and FC also has high value for utilization as a unique content [24]. To enhance the value expression and utilization of FC resources as cultural products, it is necessary to identify how FC is converted into products based on the pursued values (PVs) of Koreans in FC. While FC plays an essential role in South Korea, similar cultural ecosystems exist in other regions, making this study relevant for developing global strategies in forest-related cultural productization and sustainable policy making.

The means-end chain (MEC) theory by Gutman [25] explains consumer decision-making as a cognitive process that links product attributes to personal consequences, which ultimately lead to desired values. According to this theory, consumers select products not only based on their functional attributes but also because these attributes help them achieve personal goals and fulfill deeper values. Recently, MEC theory was advanced to analyze the deep values and motivations of consumers and proposed methods to incorporate them into marketing and advertising strategies [26]. Furthermore, MEC theory has been extensively applied across various sectors, including tourism, culture, and the arts, to understand how products and experiences resonate with consumer values [27–29].

Previous research suggests that the reverse application of MEC theory emphasizes the significance of emotional and abstract values in consumer decision-making, particularly in the context of cultural and artistic products [27]. It also demonstrated that when selecting cultural and artistic products, consumers prioritized emotional, abstract, and ideological attributes over physical attributes. MEC theory has been established as an important tool for understanding consumer behavior, and its value has been recognized not only in academic research but also in practical applications [25,26]. The theory is particularly useful in marketing, brand strategy, consumer engagement, and behavioral analysis and can contribute to understanding the deep values and motivations of consumers, which can lead to the development of effective marketing strategies. It also underlines the multidimensional nature of consumer behavior and can provide critical insights for future research and practice [30–34]. However, in the forestry sector, this approach remains underexplored.

Previous studies have qualitatively assessed consumer values using MEC theory. However, quantitative research on FC products and consumer values based on MEC theory is lacking. Thus, to explore how FC values impact consumption behavior, we employed MEC theory, linking product attributes to personal values and outcomes. MEC theory

provides a framework for analyzing how FC benefits translate into consumer preferences and activities.

The study aims are as follows:

(1) To empirically investigate the perceived value, pursued benefits, and product attributes of FC and identify their respective components.
(2) To investigate the impact of the perceived value of FC on pursued benefits and product attributes.

2. Materials and Methods

2.1. Research Process

In the first step of our research methodology, we performed a literature review, which led to the selection of 11 pursued forest values, 4 expected forest benefits (positive functions), and 19 FC activity indicators. In the second step, an online survey was conducted with 1700 participants nationwide to assess their perceptions on a five-point Likert scale for each variable. In the third step, we analyzed the collected data. The study methods and analysis framework are shown in Figure 1. The study model was structured as shown in Figure 1 to identify the subdimensions of the PV of FC, expected benefits, and preferred activities (PAs). By applying MEC theory and the laddering method [25] in reverse, their relationships and the consumption structure of FC were determined.

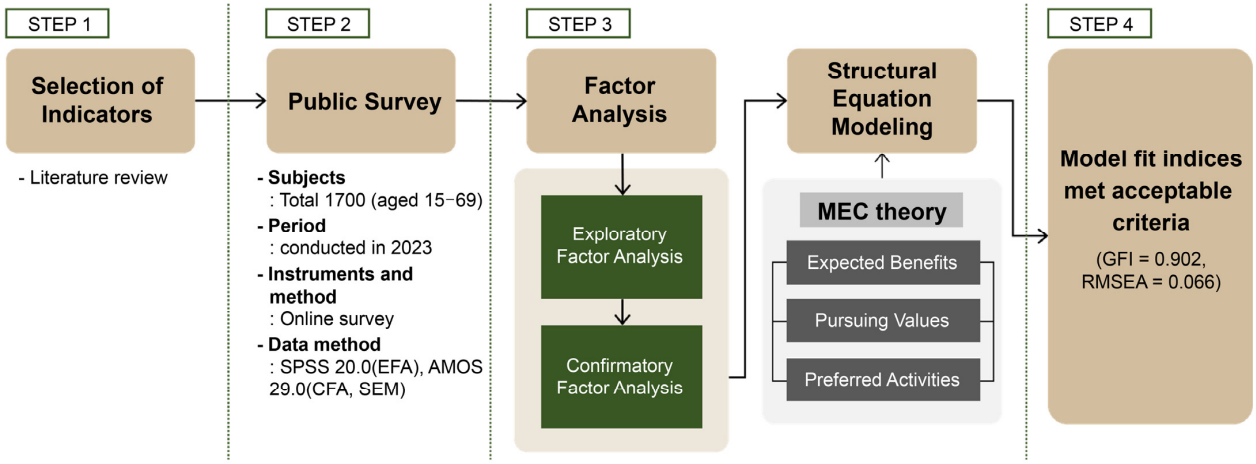

Figure 1. Overview of the research process.

Considering the approaches presented in previous studies, we applied MEC theory in reverse in the current study to consider the unique characteristics of FC products. FC products can never be fully explained by simple physical attributes because they create a deeper consumer experience by providing consumers with environmental, coexistence, and life values. These values are directly connected to the consequential values that consumers expect and thus serve as an important factor in determining the PAs of these products.

2.2. Model Development

As shown in Figure 2 below, we reversed the application of MEC theory to highlight the contributing characteristics of FC products in the following order: contributing characteristics → values → PAs. This emphasizes that the depth of value and experience provided by FC products holds more significance for consumers than the physical attributes when selecting FC products. For example, the environmental value provided by FC products influences consumers to select activities such as appreciating natural scenery or exploring forests.

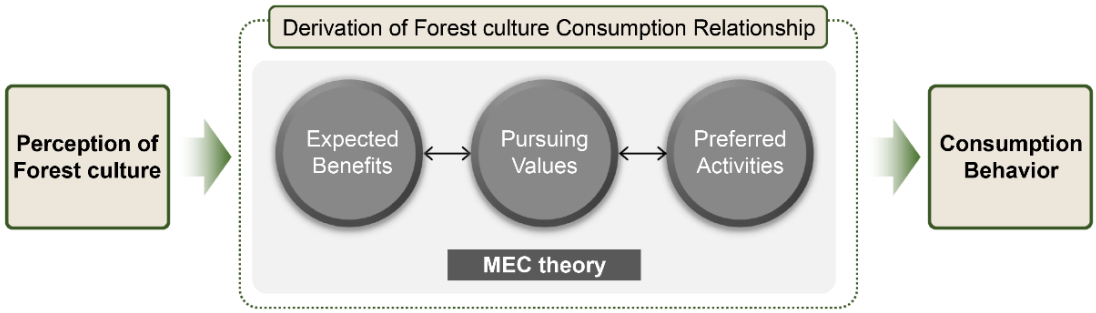

Figure 2. Analytical framework of the study.

2.3. Selection of Indicators

To derive the subdimensions of the values, benefits, and activities of consumers regarding FC and to reveal the relationship among these three variables, indicators were identified as shown in Table 1 based on the literature and legal evidence.

Table 1. Selection of variables.

Division	Variables	Variable Names	Previous Studies
Values: values sought for forest culture	Public interest value	V1	[11,13,35–38] Cultural Heritage Protection Act World Heritage Convention Cultural Heritage Conservation Principles U.S. Forest Service
	Economic value	V2	
	Environmental value	V3	
	Moral value	V4	
	Historical value	V5	
	Artistic value	V6	
	Academic value	V7	
	Life value	V8	
	Coexistential value	V9	
	Community value	V10	
	Emotional value	V11	
Benefits: positive functions of forest culture	Improvement of the quality of life among the public	B1	Framework Act on Forestry, Forest Welfare Act, Forest Recreation Act, Framework Act on Culture
	Revitalizing the local economy	B2	
	Relevance to real life	B3	
	Accessibility of enjoyment to the public	B4	
Activities: products and services for enjoying the forest culture	Visiting a museum exhibition in the forest	A1	Out of 25 forest recreation activities, 19 activities related to forest recreational and leisure functions are designated as indicators.
	Attending a musical performance in the forest	A2	
	Participating in a literary event in the forest	A3	
	Participating in an artistic activity in the forest	A4	
	Participating in a forest-based handicraft activity	A5	
	Experiencing afforestation	A6	
	Experiencing forest product harvesting	A7	
	Observing and learning about plants and animals	A8	
	Participating in forest leisure activities	A9	
	Participating in valley leisure activities	A10	
	Participation in health promotion activities	A11	
	Exploration of forests	A12	
	Exploration of natural scenic spots of forest cultural resources	A13	
	Appreciation of natural scenery	A14	
	Experiencing forest life	A15	
	Playing games related to forests (mountains, trees, and forests)	A16	
	Reading books related to forests (mountains, trees, and forests)	A17	
	Self-development and learning in forestry	A18	
	Social service activities related to forests	A19	

PVs were selected based on the types and attributes of FC values, including the value of forests, FC, and cultural heritage (Table 1). Values refer to the values that people pursue through FC. Eleven corresponding indicators were identified, including V1—public interest, V2—economic, V3—environmental, V4—moral, V5—historical, V6—artistic, V7—academic, V8—life, V9—coexistence, V10—community, and V11—emotional values (Table 1).

Contributed benefits were selected by considering the contribution characteristics presented in laws and systems (Table 1). Benefits refer to the positive functions that can be expected from FC. The following four indicators were selected: B1—improvement of the quality of life among the public, B2—revitalizing the local economy, B3—relevance to real life, and B4—accessibility of enjoyment by the public.

PAs were selected by considering the FC attributes from 25 types of forest welfare activities in Korea, referencing the regulations (Table 1). The attributes represent tangible and intangible products and services for enjoying FC. The following 19 indicators were selected: A1—visiting a museum exhibition in the forest, A2—attending a musical performance in the forest, A3—participating in a literary event in the forest, A4—participating in an artistic activity in the forest, A5—participating in a forest-based handicraft activity, A6—experiencing afforestation, A7—experiencing forest product harvesting, A8—observing and learning about plants and animals, A9—participating in forest leisure activities, A10—participating in valley leisure activities, A11—participation in health promotion activities, A12—forest exploration, A13—exploration of natural scenic spots of FC resources, A14—appreciation of natural scenery, A15—experiencing forest life, A16—playing games related to forests (mountains, trees, and forests), A17—reading books related to forests (mountains, trees, and forests), A18—self-development and learning in forestry, and A19—social service activities related to forests.

2.4. Data Collection

Based on the 2023 National Forest Culture Awareness, Attitude, and Enjoyment Survey, a representative population of FC product consumers was established. The sample was chosen to reflect the demographic diversity of FC consumers in Korea. Individuals aged 15–69 were selected to capture a broad range of consumer behaviors and attitudes, ensuring that the results represent the general population. The entire survey was conducted online and commissioned by a professional survey company. The following analyses were performed to identify the subdimensions of the contributing characteristics, PV, and PAs of the consumers of FC products. Exploratory factor and reliability analyses were conducted using SPSS 20.0. (SPSS Inc., Chicago, IL, USA). To validate the factors, confirmatory factor analysis and a structural equation model were applied using AMOS 29.0 (IBM, Armonk, NY, USA). Confirmatory factor analysis of PVs was conducted using a sample size of 1639 out of 1700 after removing outliers or missing values through data preprocessing. We removed missing values and items in this analysis that gave the same score for all items and excluded two items with low factor loadings (“observing and learning about plants and animals” and “attending performances and music concerts in the forest”), resulting in a sample size of 1084 out of 1700. Structural equation modeling (SEM) was used to analyze the relationship between the subdimensions of each variable and how contributing characteristics influence PAs via PVs.

2.5. Analytical Methods

To analyze the relationship between the variables, we conducted a survey focusing on quantitative data. Confirmatory factor analysis and exploratory factor analysis were conducted to analyze the validity of the variables derived from previous studies. SEM is a

complex statistical technique that allows for the analysis of relationships between multiple variables. In this study, latent variables—values, benefits, and activities—were used for the analysis. These latent variables were estimated through their respective measured variables, where values reflect individual beliefs or goals, benefits denote the positive outcomes gained from participation, and activities represent the specific behaviors people prefer to engage in.

Through SEM, we examined how contributing characteristics (e.g., demographic factors) directly influence PVs (e.g., environmental conservation and health improvement) and further tested the mediation effects of these values on PAs (e.g., recreational activities in forests). Mediation effects are the pathways through which characteristics affect values, which then influence activities. This analytical approach enabled us to analyze both direct and indirect interactions between the variables.

SEM was employed to examine the relationships among the subdimensions of each variable. The SEM analyzed how contributing characteristics influence PAs by mediating PV. All indicators in this analysis met the criteria, with the goodness of fit index (GFI = 0.902), adjusted goodness of fit index (AGFI = 0.874), and comparative fit index (CFI = 0.882) approaching or exceeding 0.9. Additionally, the RMSEA value was 0.066, which falls within the acceptable range; therefore, the measurement model was considered adequate. In this way, we analyzed the contributing characteristics, PVs, and PAs of FC product consumers and derived policy implications for the sustainable management and development of FC based on these findings.

3. Results

3.1. Participants

Frequency analysis was conducted to determine the demographic characteristics of the participants. The participants comprised 50.9% males and 49.1% females. The age distribution was as follows: 50s (21.8%), 40s (20.5%), 60 or older (18.9%), 20s (18.7%), 30s (16.7%), and 10s (3.4%). The educational level was as follows: college graduate (60.9%), high school graduate (22.1%), and postgraduate degree (6.8%). The occupations of FC product consumers included office workers (29.5%), housewives (15.2%), technical workers (8.5%), and others (7.8%). The regions of residence were Gyeonggi (26.8%), Seoul (18.9%), Busan (6.4%), and Gyeongnam (6.2%) (Table 2).

3.2. Exploratory and Confirmatory Factor Analyses of PVs

3.2.1. Factor Analysis of PVs

A factor analysis of the 11 items associated with the PVs of FC revealed three factors with an explanatory power of 59.71% of the total variance: symbolic, social, and consumption value. All items fulfilled the factor loadings; therefore, no items were removed. The results of the confirmatory factor analysis were df = 41, p = 0.000, GFI = 0.974, AGFI = 0.958, RMR = 0.024, NFI = 0.956, CFI = 0.967, and RMSEA = 0.05, indicating that all factors met the standards, and thus, the measurement model was considered valid (Table 3). Since the exogenous variables of the three factors were distinguishable from each other, the conceptual validity was verified. Cronbach's alpha values were above 0.89, indicating that each factor had internal consistency, reliability, and focus validity across all items. The results of the exploratory and confirmatory factor analyses are presented in Table 3.

Table 2. Characteristics of the participants.

Division		*n*	Percentage	Division		*n*	Percentage
Sex	Male	865	50.9%	Education	Elementary school graduation (Including no schooling)	6	0.4%
	Female	835	49.1%		Attending middle school	7	0.4%
Age	10s	57	3.4%		Middle school graduate	26	1.5%
	20s	318	18.7%		Attending high school	29	1.7%
	30s	284	16.7%		High school graduate	375	22.1%
	40s	349	20.5%		Attending college	84	4.9%
	50s	370	21.8%		College graduate	1036	60.9%
	60s or older	322	18.9%		Attending graduate school (master's or doctorate course)	21	1.2%
Residential region	Seoul	321	18.9%		Postgraduate degree (master's or doctorate degrees)	116	6.8%
	Busan	109	6.4%	Occupation	Forestry workers	4	0.2%
	Daegu	78	4.6%		Office workers	502	29.5%
	Incheon	100	5.9%		Service workers	126	7.4%
	Gwangju	48	2.8%		Sales workers	54	3.2%
	Daejeon	49	2.9%		Technical workers	144	8.5%
	Ulsan	38	2.2%		Manual laborers	69	4.1%
	Sejong	13	0.8%		Specialists (including professors)	53	3.1%
	Gyeonggi	456	26.8%		Managerial workers	37	2.2%
	Gangwon	49	2.9%		Self-employed (individual business owner)	117	6.9%
	Chungbuk	52	3.1%		Government employees (including teachers)	74	4.4%
	Chungnam	68	4.0%		Students (including graduate students)	128	7.5%
	Jeonbuk	56	3.3%		Housewives	259	15.2%
	Jeonnam	54	3.2%		Others	133	7.8%
	Gyeongbuk	82	4.8%				
	Gyeongnam	105	6.2%				
	Jeju	22	1.3%				
Total		1700	100.0%	Total		1700	100.0%

Table 3. Confirmatory factor analysis results of PVs.

Fit Index	Criteria	Results
Degrees of Freedom (df)	-	41
p-value	<0.05	0.000
GFI (Goodness-of-Fit Index)	≥0.90	0.974
AGFI (Adjusted Goodness-of-Fit Index)	≥0.90	0.958
RMR (Root Mean Residual)	≤0.05	0.024
NFI (Normed Fit Index)	≥0.90	0.956
CFI (Comparative Fit Index)	≥0.90	0.967
RMSEA (Root Mean Square Error of Approximation)	≤0.05 to ≤0.08	0.05

Factor 1, labeled as Symbolic Value, included community, moral, and historical values, with a total explained variance of 41.95%. Factor 2, labeled as Social Value, included environmental, coexistential, and public interest values, explaining 10.69% of the variance. Factor 3, labeled as Consumption Value, included economic, academic, and artistic values, explaining 7.07% of the variance (Table 4).

Table 4. Exploratory factor analysis of PVs.

Factor	Items	Factor Loading	Standard Loading	Standard Error	T-Value
Symbolic Value	V4-Moral value	1	0.612		
	V5-Historical value	0.955	0.602	0.063	15.082 ***
	V10-Community value	0.999	0.632	0.064	15.595 ***
Social Value	V3-Environmental value	1	0.692		
	V9-Coexistential value	1.007	0.734	0.048	20.825 ***
	V1-Public interest value	0.943	0.675	0.049	19.405 ***
	V8-Life value	0.973	0.7	0.049	20.024 ***
	V11-Emotional value	0.917	0.689	0.046	19.739 ***
Consumption Value	V2-Economic value	1	0.554		
	V6-Artistic value	1.052	0.621	0.073	14.387 ***
	V7-Academic value	1.062	0.609	0.075	14.227 ***

***: $p < 0.001$.

3.2.2. Factor Analysis of PAs

To investigate the subdimensions of the PAs of FC, an exploratory factor analysis was performed on the 19 PA items, resulting in the extraction of three factors with an explanatory power of 56.56% of the total variance.

All factors were initially retained without removing any items. However, during the confirmatory factor analysis, seven items (A5, A6, A7, A8, A15, A17, and A19) from the PA category were removed due to low factor loadings, which fell below the threshold of 0.45.

The analysis yielded the following results: df = 32, $p = 0.000$, GFI = 0.948, AGFI = 0.911, RMR = 0.068, NFI = 0.928, CFI = 0.936, and RMSEA = 0.087. While RMR failed to meet the standard criteria, the other indicators did, including NFI = 0.928 and CFI = 0.936, indicating that the measurement model was valid. Conceptual validity was verified because the exogenous variables of the three factors were clearly distinguishable from each other, and Cronbach's alpha values were all above 0.91, indicating that each factor demonstrated internal consistency, reliability, and focused validity among all items. The results of exploratory and confirmatory factor analyses are presented in Tables 5 and 6.

Table 5. Confirmatory factor analysis results of PAs.

Fit Index	Criteria	Results
Degrees of Freedom (df)	-	32
p-value	<0.05	0.000
GFI (Goodness-of-Fit Index)	≥0.90	0.948
AGFI (Adjusted Goodness-of-Fit Index)	≥0.90	0.911
RMR (Root Mean Residual)	≤0.05	0.068
NFI (Normed Fit Index)	≥0.90	0.928
CFI (Comparative Fit Index)	≥0.90	0.936
RMSEA (Root Mean Square Error of Approximation)	≤0.05 to ≤0.08	0.087

Factor 1, labeled as Tourism–Exploration Activity, included "exploration of forests", "participation in health promotion activities", "appreciation of natural scenery", and "exploration of natural scenic spots", explaining 37.31% of the total variance. Factor 2, labeled as Cultural–Artistic Activity, included "participating in an artistic activity", "attending a musical performance", "participating in a literary event", and "visiting a museum exhibition", explaining 11.99% of the variance. Factor 3, labeled as Living–Leisure Activity, included "participating in forest leisure activities", "participating in valley leisure activities", "playing games related to forests", and "self-development and learning in forestry", explaining 7.27% of the variance.

Table 6. Exploratory factor analysis of PAs.

Factor	Items	Factor Loading	Standard Loading	Standard Error	*t*-Value
Tourism–exploration activity	A12-Exploration of forests	1	0.818		
	A11-Participation in health promotion activities	0.984	0.777	0.038	26.13 ***
	A14-Appreciation of natural scenery	0.915	0.755	0.036	25.35 ***
	A13-Exploration of natural scenic spots of forest cultural resources	0.983	0.734	0.04	24.581 ***
Cultural–artistic activity	A4-Participating in an artistic activity in the forest	1	0.828		
	A2-Attending a musical performance in the forest	0.669	0.592	0.042	15.942 ***
	A3-Participating in a literary event in the forest	0.778	0.642	0.046	16.766 ***
	A1-Visiting a museum exhibition in the forest	0.786	0.583	0.045	17.320 ***
Living–leisure activity	A9-Participating in forest leisure activities	1	0.852		
	A10-Participating in valley leisure activities	0.968	0.798	0.045	21.498 ***
	A16-Playing games related to forests (mountains, trees, and forests)	0.636	0.547	0.038	16.651 ***
	A18-Self-development and learning in forestry	0.718	0.611	0.036	16.867 ***

***: $p < 0.001$.

3.3. Comparative Analysis of Means of PVs, PAs, and Contributing Characteristics

Based on Figure 3, the environmental value (M = 4.01) and appreciation of natural scenery (M = 4.12) emerged as the highest-ranking factors among PVs and product attributes, respectively, indicating a strong preference for ecological and scenic elements of FC. In contrast, artistic value (M = 3.44) and self-development activities (M = 3.06) had the lowest means, indicating less importance placed on cultural and personal growth within forest experiences.

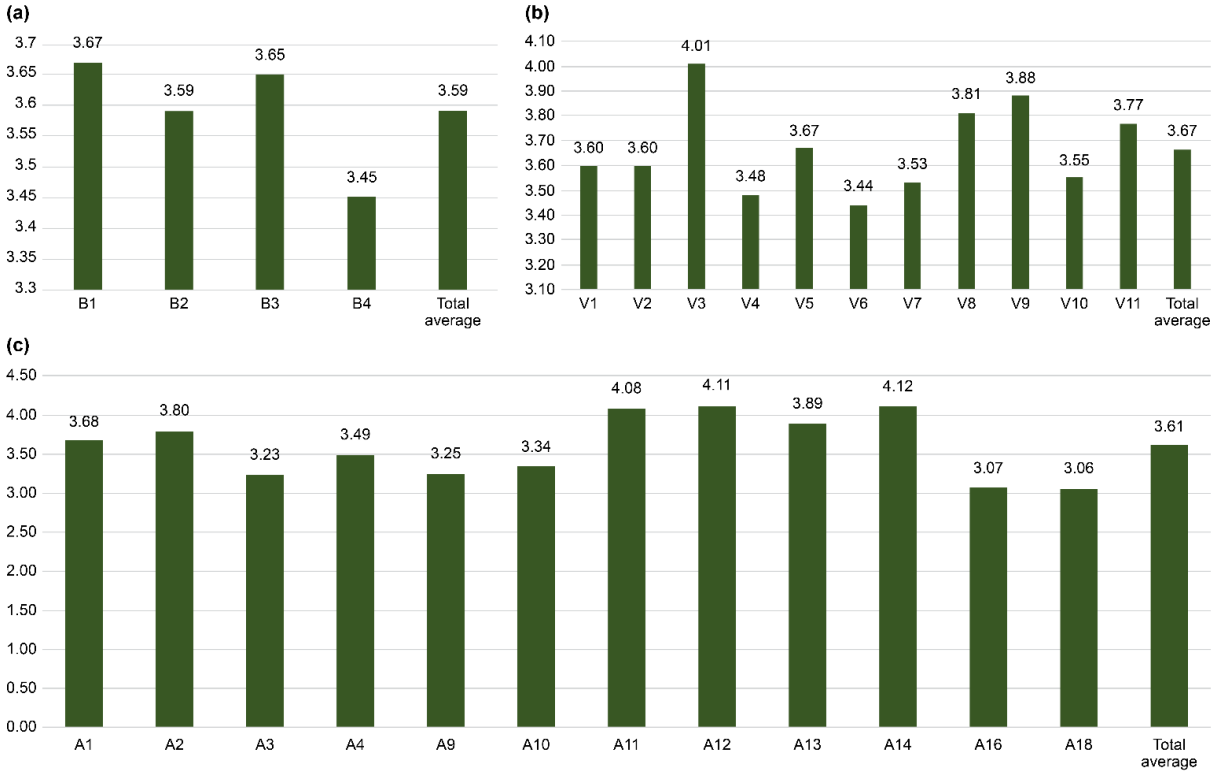

Figure 3. Analysis of the mean for each variable of forest culture: (**a**) contributed benefits, (**b**) pursued value, and (**c**) preferred activities.

When considering the values above the overall mean of 3.67, coexistential value (M = 3.88) and life value (M = 3.81) stood out, showing that participants placed high value on the interconnectedness of life and coexistence within forest environments. Similarly, product attributes such as exploration of forests (M = 4.11) and participation in health promotion activities (M = 4.08) were rated above the average of 3.61, suggesting that participants were particularly drawn to engaging with nature for both exploration and health benefits.

In terms of expected benefits, the overall mean was 3.59. The improvement of the quality of life among the public (B1, M = 3.67) had the highest score, followed by relevance to real life (B3, M = 3.65) and revitalizing the local economy (B2, M = 3.59). However, accessibility of enjoyment to the public (B4, M = 3.45) was rated the lowest, suggesting that while forests play a significant role in improving public quality of life, there is a relatively negative perception regarding the accessibility of cultural enjoyment within forest settings.

Overall, the analysis indicated a strong preference for the ecological and health-promoting aspects of FC, with low emphasis on artistic and self-development activities, as well as concerns about accessibility to cultural experiences in forests.

3.4. SEM of PVs, Contributing Characteristics, and PAs

SEM analysis revealed significant pathways between the subdimensions of expected benefits, PVs, and product attributes of FC products (Figure 4). Specifically, expected benefits significantly influenced PVs, which in turn affected product attributes. The analysis indicated that the mediating factors of Symbolic Value and Consumption Value influenced all activities, while Social Value influenced only tourism–exploration activities. The subdimensions B1-improvement of the quality of life among the public, B2-revitalizing the local economy, and B3-relevance to real life had the greatest effect on tourism–exploration activities through the mediation of Social Value, while enjoyment by the public had the largest impact on living–leisure activities through the mediation of Symbolic Value. Additionally, the SEM analysis yielded acceptable model fit indices: GFI = 0.902, AGFI = 0.874, CFI = 0.882, and RMSEA = 0.066. These results suggest that the model fit the data well (Table 7).

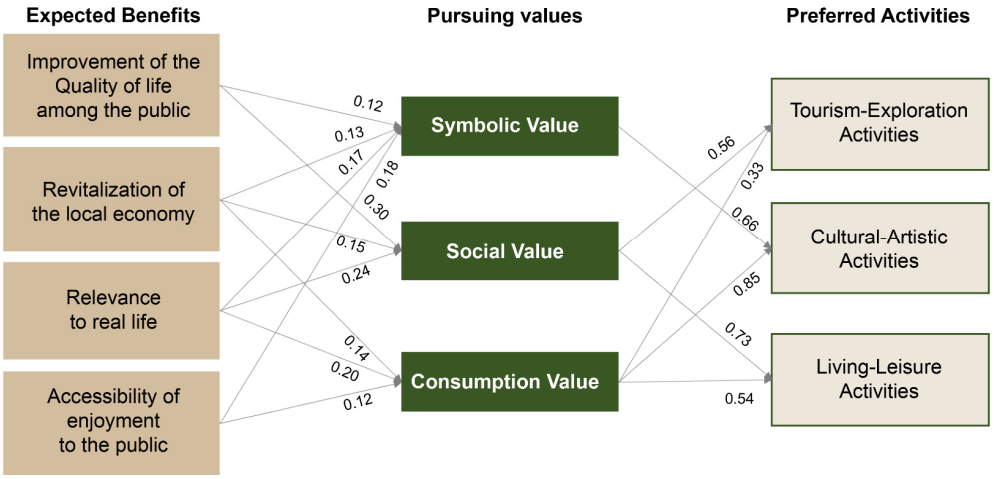

Figure 4. Structural equation modeling results.

Table 7. Structural equation modeling (SEM) results.

Fit Index	Criteria	Results
GFI (Goodness-of-Fit Index)	≥0.90	0.902
AGFI (Adjusted Goodness-of-Fit Index)	≥0.90	0.874
CFI (Comparative Fit Index)	≥0.90	0.882
RMSEA (Root Mean Square Error of Approximation)	≤0.08	0.066

Although some indices fell slightly below the recommended threshold (e.g., AGFI = 0.874 and CFI = 0.882), the overall model fit was considered acceptable. According to Hu and Bentler [39], models with fit indices close to the recommended thresholds (e.g., GFI $\geq$ 0.90 and RMSEA $\leq$ 0.08) can be considered reasonable, particularly in the presence of complex models or large sample sizes. Furthermore, Marsh, Hau, and Wen [40] emphasized that absolute adherence to strict cutoff values may not always be realistic, particularly when using real-world data where slight deviations from the criteria typically occur without compromising the interpretive validity of the model.

In this study, all major fit indices, including GFI = 0.902 and RMSEA = 0.066, fell within ranges that are generally considered acceptable in the SEM literature. Thus, the model fit the data sufficiently well, allowing for meaningful interpretations of the relationships among the latent constructs.

4. Discussion

4.1. Classification Characteristics of the Values and Attributes of FC

Factor analysis identified three key factors for both PVs and PAs in FC. The first factor, Symbolic Value, reflects temporal characteristics such as history, morality, and community values, indicating that FC functions as a symbolic good. The second factor, Social Value, highlights collective values based on ecological characteristics, showing that FC serves as a social good. The third factor, Consumption Value, includes academic, artistic, and emotional values, aligning with Bourdieu's [41] concept of high-end cultural capital and characterizing FC as a consumer good. The product attributes of FC were divided into three categories. The first, tourism and exploration activities, involves appreciating nature's beauty and understanding ecosystem diversity. The second, cultural–artistic activities, integrates the enjoyment of both nature and cultural elements of FC. The third, living–leisure activities, includes recreational and sports activities that contribute to community development. Among these, Consumption Value closely ties to Bourdieu's [41] theory of cultural capital, where artistic and academic activities are key components of social capital formation. FC, through events like artistic performances or academic activities, operates as a form of high cultural capital. These activities demonstrate that FC is not merely a natural resource but also a cultural asset. Eagleton [42] further emphasized the importance of cultural capital, arguing that participation in cultural activities can enhance an individual's social status. In the context of SDG 12, which focuses on responsible consumption and production, FC plays a crucial role in promoting sustainable consumption patterns. Specifically, SDG 12 encourages practices that reduce environmental impact and promote the efficient use of resources. FC, through its emphasis on activities such as tourism, cultural experiences, and community-based leisure, aligns with these principles by offering ways to engage with natural resources without depleting them. The factor of tourism and exploration activities highlights the value of nature-based tourism, which directly supports SDG 12.b, focusing on sustainable tourism. These activities, such as exploring natural scenic spots and participating in health-promoting forest activities, are designed to enhance environmental appreciation while ensuring the responsible use of forest resources. By promoting tourism that fosters a deeper connection to nature, FC contributes to both environmental protection and the local economy, fulfilling SDG 12's objectives of sustainable consumption and production. Similarly, the cultural–artistic activities related to FC encourage the sustainable consumption of cultural resources. These activities—such as art performances and educational events in forests—are not only culturally enriching but also help reinforce community empowerment by encouraging locals to engage with and take pride in their forested environments. This aligns with SDG 12's focus on the efficient use of resources, ensuring that cultural capital is built without harming

ecological systems. Finally, the factor of living–leisure activities underscores the importance of fostering recreational activities that are in harmony with environmental sustainability. Activities such as forest-based sports or community-building efforts are directly connected to responsible consumption of the environment. By promoting forest leisure in a way that respects ecological balance, these activities help reduce the negative environmental impacts associated with overconsumption and contribute to SDG 12's overarching goals of creating sustainable consumption patterns.

In summary, FC encourages activities that balance ecological preservation with cultural and recreational engagement and thus offers a clear example of how SDG 12 can be implemented in practice. Through sustainable tourism, cultural enrichment, and responsible leisure activities, FC promotes the responsible consumption of natural and cultural resources.

4.2. Characteristics of FC in MEC Theory

Applying MEC theory to FC products, benefits are first recognized, then values are formed, and finally, attributes are selected. The laddering method in the traditional MEC model is a process in which consumers first recognize attributes when choosing a product, experience the benefits provided by those attributes, and ultimately reach a value [43]. Furthermore, cultural and artistic products are differentiated from general goods, such as clothes and shoes. This is because cultural and artistic products do not focus solely on functional aspects. Instead, their symbolism is reflected through individual experience and taste. Shin and Lee [28] applied MEC theory and the laddering method in a reversed manner, emphasizing that cultural and artistic products, unlike other consumer goods, are highly dependent on the perception of value by consumers.

Essentially, consumers are drawn to deeper experiences and values, such as environmental, emotional, and social benefits, rather than physical characteristics themselves [44]. Compared with general consumer goods, the benefits of FC products include individual as well as shared characteristics. However, forest consumer experiences that reflect collective interests beyond the individual level, such as community features, ecological sustainability, and environmental conservation [45], seem to have changed.

We believe this is logical because the essence of FC products is closely connected to value consumption, as argued by Sheth et al. [46]. According to the value consumption theory of Sheth et al. [46], consumers make consumption choices based on five values (e.g., functional, conditional, social, emotional, and epistemic values). From the perspective of FC, factors such as social, emotional, and conditional values have a strong influence on choices closely related to FC.

This theory also implies that FC products are not merely consumer goods but also positioned as value-based products that offer a moral, emotional, and environmental experiences [47]. This is consistent with the service-dominant logic argued by Vargo and Lusch [48], which states the importance of the value and experience provided by the product rather than the product itself.

The service-dominant logic (S-D Logic) theory of Vargo and Lusch [48] suggests that services are the core of economic activity, which shifts away from the traditional product-centered economy and emphasizes community characteristics. This is because FC is shaped by human relationships and has strong community characteristics, similar to regional products. Additionally, tourists and users gain satisfaction through interactions by visiting and experiencing forest resources and engaging with local residents. This theory emphasizes the community characteristics of value creation and explains that consumers play a crucial role as active participants in the process of value creation rather than merely receiving services. Applying this theory to FC studies provides a useful framework for

understanding the role of forest resources as a means of service provision. It also helps explain how value is co-created through interactions between consumers and suppliers.

In conclusion, the direction of benefits → value → activities in FC products reflects the values and cultural understanding of consumers, which differs from that of general consumer goods. Consumers would rather prioritize the emotional, social, and ethical benefits of the experience than the physical experience provided by forests. This demonstrates that FC products are not mere consumer goods but products that should be approached from the perspective of value consumption. Furthermore, this suggests that these products function as an important medium to realize the value that consumers seek.

4.3. Proposal and Limitations

Our analysis suggests that understanding forest tourism demand and developing strategies to expand the market, while ensuring sustainable environmental development, can potentially revitalize local economies [17,20,48]. To achieve SDG 12.b and strengthen community empowerment, it is essential to implement schemes and certifications such as the Forest Stewardship Council (FSC) and Programme for the Endorsement of Forest Certification (PEFC), which will encourage the active involvement of governments, corporations, and consumers.

Limitations of this study include the following: first, the categorization of values and PAs was limited in terms of comparative analysis of the characteristics of each type and did not identify differences between groups; second, the focus on analyzing consumer-oriented value perceptions did not fully reflect the specific economic and environmental contributions generated at each stage of the value chain. In future studies, we plan to systematically analyze the value creation and distribution process of FC by combining a value-chain model with a comparative analysis of specific data on the values and PAs of different generations and propose a sustainable consumption of FC.

5. Conclusions

Our findings are distinct from those of previous studies in that earlier MEC studies primarily focused on the general relationship between consumers' personal values and product attributes, while this study extends the application of MEC theory by specifically analyzing how the multidimensional values of FC impact consumer behavior. Forest cultural products offer consumers a wide range of social and environmental values, which are crucial for informing both policy development and productization strategies.

We aimed to propose policies and strategies from a value consumption perspective, focusing on the expected benefits of FC. We thus seek to enhance the sustainability of FC and maximize its social contributions. Our results suggest that to ensure the universal distribution of FC benefits, it is necessary to provide policy support for tourism and exploration programs within FC activities. Furthermore, expanding the market for cultural products requires active support for cultural and artistic activities, emphasizing their consumption value. This approach offers fundamental data for building an integrated marketing strategy that reflects the multidimensional values of FC and provides key insights into understanding the connections between consumers' deep values and emotions. Additionally, we found that the contributing characteristics of FC are closely tied to the values that consumers pursue, which, in turn, guide their PAs. Ultimately, this study highlights that FC is a valuable cultural resource that offers multidimensional benefits.

Therefore, it is essential to develop regional revitalization policies that connect communities and people through FC and devise strategies for productizing FC-based regional products that reflect these values, such as social and symbolic consumption. Adopting an

integrated approach that encompasses the diverse values of FC will be crucial in the future. This will not only enhance the sustainability of FC but also maximize its social impact.

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