

Analyzing Visitor Experiences at Dark Tourism Sites: The Moderating Role of Flow

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다크투어리즘 장소에서 방문객 경험 분석: 몰입의 조절 효과

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Abstract

Exploring visitor experiences at dark tourism sites in Busan, South Korea, this study aims to uncover the interplay of perceived value dimensions within the framework of the experience economy and flow theory. Dark tourism, characterized by visits to sites associated with death, tragedy, and historical trauma, offers unique emotional and cognitive challenges that remain underexplored in tourism research. Building on Pine and Gilmore's experience economy model, the research investigates how education, entertainment, aesthetics, and escapism influence emotional and cognitive values, satisfaction, place attachment, and behavioral intentions in a dark tourism context. Furthermore, the study examines the moderating role of flow, emphasizing the significance of immersion and optimal experience in shaping tourist perceptions. The survey was conducted both online and on-site, collecting valid responses from 300 participants who visited dark tourism sites in Busan. Structural equation modeling (SEM) results revealed that all four experience economy elements positively influenced emotional value, while only educational and entertainment experiences significantly enhanced cognitive value. In addition, the analysis demonstrated a significant moderating effect of flow on the relationship between emotional value and satisfaction, highlighting that deeper immersion strengthens positive evaluations of the experience. This study provides theoretical contributions by extending the application of experience economy and flow theory to dark tourism research, offering a more nuanced understanding of visitor engagement. Practically, the findings suggest strategies for site managers and destination marketers to design interpretive programs, immersive storytelling, and participatory activities that enhance visitor satisfaction and foster sustainable dark tourism development.

Key Words : dark tourism, visitor experience, experience economy, 4E, flow theory, perceived value, place attachment, satisfaction, behavioral intention

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I. Introduction

Deaths, disasters, and atrocities have become increasingly significant themes within modern tourism, giving rise to what is known as dark tourism. This form of tourism allows visitors to engage in spiritual and reflective journeys centered on suffering and remembrance (Stone, 2006). Dark tourism has been recognized as a specialized area of study from both demand and supply perspectives (White & Frew, 2013), though its complexities remain insufficiently explored (Farmaki, 2013). Visitors' experiences at dark tourism sites extend beyond exposure to death and suffering, encompassing emotional, educational, and entertainment dimensions (Strange & Kempa, 2003).

Dark tourism is rapidly growing, with global revenues projected to reach USD 40.2 billion by 2033 (Grand View Research, 2024). Busan, shaped by the Korean War and Japanese colonization, holds strong potential as a dark tourism destination. Linking sites with themed stays, historical menus (e.g., 국밥, 밀면), and local festivals can enhance visitor immersion and contribute to broader tourism development (Ahn & Kim, 2023). Flow, defined as complete absorption in an activity, can transform such experiences and amplify the influence of experience-economy elements on perceived value, satisfaction, and behavioral intentions (Lin et al., 2024; Pine & Gilmore, 1998), yet it remains largely overlooked in dark tourism research. Although prior studies have examined dark tourism's concepts, motivations, and ethics, few have systematically explored how visitors' multidimensional experiences influence perceived values, satisfaction, place attachment, and behavioral intentions. In particular, the experience economy framework has rarely been applied in dark tourism, and the moderating role of flow in these experiences remains underexplored, creating a significant gap in understanding visitor engagement at sites of death and tragedy.

Addressing this gap, the present study employs structural equation modeling to test the interrelationships among experience economy dimensions, perceived values, satisfaction, place attachment, and behavioral intentions, incorporating flow as a moderator. This approach provides both theoretical insights and practical guidance for destination managers and policy makers seeking to design immersive, meaningful experiences that support sustainable tourism development.

II. Literature Review

1. The 4Es of the experience economy

The experience economy is recognized as the fourth economic offering following commodities, goods production, and service distribution (Pine & Gilmore, 1998). Modern consumers seek experiences that go beyond quality alone, prompting companies to create unique and memorable offerings (Hwang & Lee, 2019). The experience economy (4Es) framework, introduced by Pine and Gilmore (1998), describes the shift from a commodity-based society to an economy focused on experiences.

According to Pine and Gilmore (1999), the experience-economy framework comprises two orthogonal dimensions, namely customer participation (passive to active) and the customer-environment connection (absorption to immersion). The intersection of the two dimensions results in four realms that are entertainment, education, aesthetics, and escapism. Entertainment is the most common form, involving passive absorption (Şeker & Kamil, 2022). Education requires active participation and absorption to enhance knowledge (Hwang & Han, 2018). Escapism represents active immersion, with participants fully engaged and influencing the experience (Şeker & Kamil, 2022). Aesthetics involves passive participation through observation, creating deep immersion (Oh et al., 2007).

Tourism is regarded as a business that relies upon experience (Song et al., 2015), has widely applied the 4Es framework in various sectors, including wine tourism (Brennan & Koo, 2019), special events (Pullman & Gross, 2004), museums (Radder & Han, 2015), wellness tourism (Luo et al., 2018), and accommodations (Oh et al., 2007; Song et al., 2015). Similarly, dark tourism sites, where visitors engage with themes of death, tragedy, and historical trauma, offer rich opportunities to apply the 4Es framework, as these sites provide educational, aesthetic, entertaining, and immersive experiences that shape perceived value, satisfaction, and behavioral intentions. Therefore, this study seeks to explore how tourists' experiences at dark tourism sites, structured around the 4Es, contribute to perceived value, including both emotional and cognitive dimensions, and how these values influence satisfaction, place attachment, and behavioral intentions.

2. Perceived value

Perceived value refers to visitors' overall evaluation of an experience and is shaped by both cognitive and emotional values. Cognitive value involves assessing the tangible and functional benefits relative to costs, while emotional values reflect the feelings, affect, and enjoyment associated with the experience (Sweeney & Soutar, 2001). In the context of dark tourism, both cognitive and emotional values are particularly important, as visitors not only gain knowledge about historical events, tragedies, or cultural narratives (cognitive value) but also experience strong emotional responses such as empathy, reflection, or awe (emotional values). These experiences combine to create a deeper, more meaningful engagement with the site, shaping how visitors perceive the overall value of their visit. By capturing these dimensions, perceived value provides a comprehensive understanding of how tourists interpret and derive meaning from their visits, which in turn plays a crucial role in determining their satisfaction and post-visit behaviors.

3. Satisfaction and behavior intentions

Satisfaction emerges as a complex psychological state influenced by emotions, knowledge, and prior experiences with products or services (Oliver, 1997). Customer satisfaction is a significant predictor and direct antecedent (Petrick & Backman, 2002) of both service consumption (Cronin Jr et al., 2000; Olorunniwo et al., 2006; Petrick & Backman, 2002) and post-purchase behavior intentions (Williams & Soutar, 2009). Behavior intentions reflect visitors' intended future behavior and are intimately related to their perception of the service quality provided by the destination (Qiu et al., 2018). Consumer decisions regarding service products have a direct and indirect effect on behavioral intentions (Cronin Jr et al., 2000). Satisfaction positively influences "visitors' intentions to revisit the destination, their willingness to recommend the destination to others" (Del Bosque & Martín, 2008), loyalty, complaint behavior, and price sensitivity (Olorunniwo et al., 2006; Zeithaml et al., 1996). Thus, the tourists' willingness to restore the goal of the journey is to go back, comment positively, and tell their friends and family about the destination (Zhao et al., 2023).

4. Place attachment and flow

Place attachment denotes the profound emotional bonds visitors form with a destination, encompassing cognitive and affective dimensions such as place identity, dependence, social bonding, and emotional attachment (Ramkissoon et al., 2014; Prayag & Ryan, 2012). This place attachment influences revisit intentions and loyalty, conjunctively shaping tourist satisfaction with the socio-physical environment (Chen & Rahman, 2018). Recent studies highlight the fluid and plural nature of place attachment, influenced by evolving experiences and social interactions, particularly relevant in diverse tourism contexts like dark, adventure, and heritage tourism.

Closely intertwined with place attachment is the flow experience, defined as a state of complete immersion and focused engagement with an activity (Csikszentmihalyi, 1990; Zhang et al., 2021). Flow fosters heightened satisfaction and loyalty through intense concentration, reduced self-awareness, and a sense of control (Lin et al., 2024). In dark tourism, where encounters with death and suffering evoke deep emotional responses, flow may facilitate more intense and transformative experiences than typical tourism forms. Emerging literature suggests flow acts as a critical moderator between perceived value and satisfaction, enhancing visitor engagement and emotional resonance (Wu & Ling, 2011). Exploring this relationship within dark tourism expands understanding of how immersive experiences contribute to satisfaction and behavioral intentions.

5. Research Site

Busan provides a distinctive context for examining dark tourism experiences. The city's layered history of war and colonial occupation has been integrated into tourism development through preservation, interpretation, and strategic promotion. Municipal initiatives emphasize transforming historical adversity into cultural assets, engaging the public, and linking these efforts with hospitality and food industries to enhance visitor immersion and economic outcomes. Hotel packages inspired by Korean War heritage or dining experiences themed around colonial-era history illustrate how F&B offerings can complement memorial visits. Within this landscape, the Provisional Capital Memorial Hall, once the wartime presidential residence, the Seokdang Museum, formerly the provisional government building, and Ami-dong

Tombstone Culture Village, a refugee settlement built on Japanese cemeteries, highlight survival and adaptation. The National Memorial Museum of Forced Mobilization under Japanese Occupation and the United Nations Peace Memorial Hall further commemorate sacrifice and resilience, underscoring Busan's role as both a wartime refuge and a place marked by colonial oppression. Together, these sites embody the city's historical depth, making Busan an important setting for investigating visitor experiences in dark tourism (Visit Busan, 2025).

III. Methodology

1. Hypothesis development

1) Relationship between 4E and Perceived Value

4Es was proposed by Pine and Gilmore in 1998 (Pine & Gilmore, 1998; Pine & Gilmore, 1999) and describes the transformation of a commodity-based society into an experience economy (Kaur & Kaur, 2020). The authors of the concept suggested that “businesses need to shift their paradigm from the “delivery-focused” service economy that emphasizes high-quality offerings to the “staged” experience economy that creates a memorable consumption” (Pine & Gilmore, 1999). In the context of dark tourism, the 4Es framework can help explain how sites of death, tragedy, and historical trauma provide educational, entertaining, aesthetic, and escapist experiences that create meaningful and memorable visitor engagements.

H1: Dark tourism experience will have a significant positive effect on emotional value.

H1(a)~(d): (a)Educational, (b)Aesthetic, (c)Entertainment, and (d)Escapist experience will have a significant positive effect on emotional value.

H2: Dark tourism experience will have a significant positive effect on cognitive value.

H2(a)~(d): (a)Educational, (b)Aesthetic, (c)Entertainment, and (d)Escapist experience will have a significant positive effect on cognitive value.

2) Relationship between perceived value and satisfaction

The perceived value refers to the relationship between the customer and the

product and is influenced by both cognitive and affective aspects, including the benefits the customer receives from the purchase (Aulia et al., 2016). In the context of dark tourism, visitors' perceived value—both emotional and cognitive—shapes their overall satisfaction with the visit. Emotional value reflects affective responses, while cognitive value reflects knowledge or understanding gained from the experience. Accordingly, we propose:

H3: The perceived value of dark tourism will have a significant positive effect on satisfaction.

H3(a)&(b): (a)Emotional, and (b)Cognitive value will have a significant positive effect on satisfaction.

3) Relationship between satisfaction and place attachment

The term place attachment refers to the emotional connection and affective bond that develops between a person and their socio-physical environment (Ramkissoon, 2014). In the context of dark tourism, visitors who experience higher satisfaction are more likely to develop a stronger emotional place attachment to the site, as positive experiences reinforce their sense of connection and belonging. Prior studies have consistently demonstrated that satisfaction significantly predicts place attachment (Hosany et al., 2017). These findings highlight that when visitors' needs and expectations are met, they tend to form emotional bonds with the destination:

H4: Satisfaction with dark tourism will have a significant positive effect on place attachment.

4) Relationship satisfaction and behavioral intention

Customer satisfaction is a significant predictor and direct antecedent of both service consumption and post-purchase behavioral intentions (Petrick & Backman, 2002; Williams & Soutar, 2009). Previous studies also confirm that satisfaction influences positive behavioral intentions, including word-of-mouth recommendations and revisit intentions (김주진 & 신우진, 2020 김주진, & 신우진). In the context of dark tourism, visitors' satisfaction with their experiences is therefore expected to enhance their willingness to

return and to recommend the destination to others (Qiu et al., 2018):

H5: Satisfaction with dark tourism will have a significant positive effect on behavioral intention.

H5(a)&(b): Satisfaction with dark tourism will have a significant positive effect on the intention to (a)revisit, and (b)recommend.

5) The Moderating role of flow in perceived value and customer satisfaction

Flow refers to complete immersion and intense concentration in an activity (Csikszentmihalyi, 1990; Zhang et al., 2021) and has been linked to positive outcomes such as satisfaction and loyalty (Wu & Ling, 2011). In dark tourism, which involves death and suffering, visitors may experience deeper immersion, making flow especially relevant. Flow may enhance satisfaction and strengthen the effect of perceived value, yet it has rarely been studied in this context.

H6: There will be a significant positive moderating effect of flow in the influence of perceived value (emotional value and cognitive value) on satisfaction.

H6(a)&(b): Flow will have a significant positive moderating effect on the relationship between (a)emotional, and (b)cognitive value and satisfaction.

6) Relationship between place attachment and behavioral intention

Prior studies consistently show that place attachment enhances loyalty, revisit, and recommendation behaviors across various tourism contexts, including theme tourism, temple stays, and even virtual settings (고주희, 2024; 이위성, 이승구, & 이경아, 2025; Prayag & Ryan, 2012). In the context of dark tourism, where visitors engage with emotionally intense experiences of death, tragedy, and trauma, such place attachment may be even stronger, further motivating intentions to revisit or recommend these sites:

H7: Place attachment in dark tourism will have a significant positive effect on behavioral intention.

H7(a), (b): Place attachment in dark tourism will have a significant positive effect on the intention to (a)revisit, and (b)recommend.

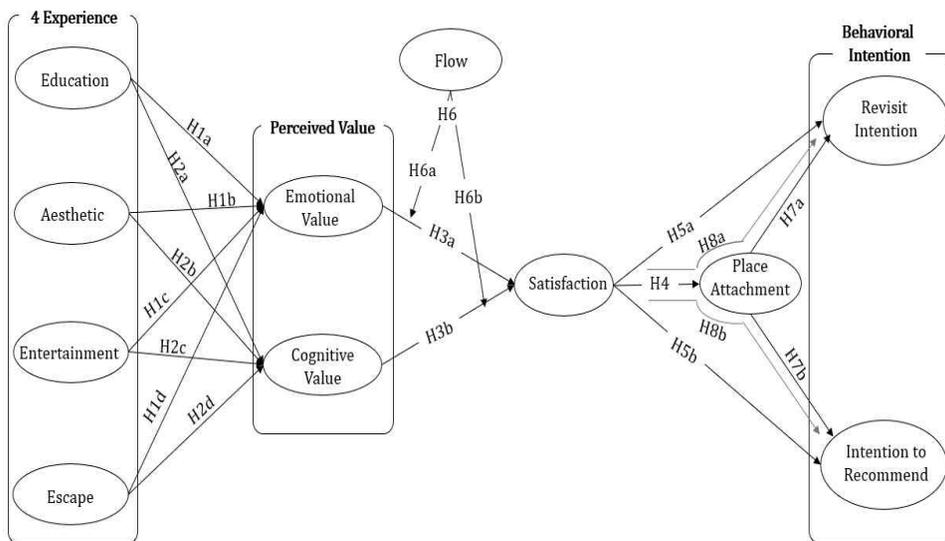
7) The Mediating role of place attachment in the relationship between satisfaction and behavioral intention

Place attachment is expected to mediate the relationship between satisfaction and visitors’ behavioral intentions. In dark tourism, higher satisfaction with a site can strengthen place attachment, which in turn increases the likelihood of positive post-visit behaviors, such as revisiting the site or recommending it to others (Hosany et al., 2017). This highlights the important role of place attachment in converting satisfaction into actionable intentions. Accordingly, we propose:

H8: Place attachment in dark tourism will have a significant positive effect between satisfaction and behavioral intention.

H8(a), (b): Place attachment in dark tourism will have a significant positive effect between satisfaction and intention to (a)revisit, and (b)recommend.

The structured hypotheses (H1~H8) and conceptual model visually represent these proposed relationships (see Figure 1), providing a rigorous framework to systematically examine visitor experiences within Busan’s dark tourism context.



<Figure 1> Proposed Research Framework

2. Measurements

The proposed model in this study consisted of four key components: 4Es, perceived value, flow, satisfaction, place attachment, and behavioral intention. The measurement items for each component were adapted from established scales in previous research. The 4Es construct was divided into 4 factors originating from Pine & Gilmore (1998), with each factor comprising 4 items. Perceived value was operationalized into emotional value and functional value, drawing from Sweeney & Soutar (2001) and Wang et al. (2004), with each factor consisting of five items. Flow was conceptualized based on Csikszentmihalyi (1988), and the measurements were adapted from the scales developed by Karasakal and Albayrak (2022). Place attachment was assessed using four items derived from Prayag and Ryan (2012), while satisfaction was measured with five items based on Lee, Yoon & Lee (2007) and Qiu et al. (2018). Finally, behavior intention was evaluated using four items for revisit intention from Su, Hsu, and Swanson (2017), and three items for intention to recommend from Chen & Rahman (2018). These measurement items gauged participants' agreement levels on a 5-point Likert-type scale. Additionally, the survey included socio-demographic questions and was originally composed in Korean, then back-translated into English. Socio-demographic information was also collected. Detailed demographics are presented in Table 1.

3. Data collection

Data collection occurred from April to June 2021 through two complementary methods, in-person surveys and online distribution. For on-site collection, researchers administered printed questionnaires randomly to 200 visitors across five dark tourism sites. The online survey link was shared via Direct Message with 100 Instagram users who posted location-tagged content related to these sites, identified using the five site names as keywords. To avoid duplication, individuals who had already completed the printed survey were not permitted to participate in the online version. Combining both methods yielded 300 responses. After removing 82 incomplete or unreliable questionnaires, 218 valid responses remained for analysis. It should be noted that data collection occurred during the COVID-19 pandemic, when visitor numbers were relatively low, which may have influenced tourists' perceived value and satisfaction levels.

IV. Results

1. Profile of respondents

Table 1 summarizes the demographic profile of the 218 valid respondents. The gender distribution was relatively balanced, with 44% male and 56% female participants. Most respondents were in their 20s (38.5%) and 40s (24.3%), followed by smaller proportions in their 30s and 50s. Regarding marital status, 43% were married, while 57% were single. Annual income was predominantly below 20 million KRW (49.5%), with fewer respondents in higher income brackets. Travel companions varied, with 43.1% traveling with family or friends and 17% traveling alone. The majority of trips were self-planned (55%). Further demographic details are provided in Table 1.

〈Table 1〉 Profile of Respondents

Category	Frequency	Percentage	Category	Frequency	Percentage
Gender			Age		
Male	95	43.6	20s	84	38.5
Female	123	56.4	30s	35	16.1
Marital status			40s	53	24.3
Married	94	43.1	50s	15	6.9
Single	124	56.9	Other	31	14.2
Educational level			Income		
High school	78	35.8	< 20Million(M)	108	49.5
College	20	9.2	20M ~ 39.9M	52	23.9
University	80	36.7	40M ~ 59.9M	29	13.3
Graduate school	28	12.8	60M ~ 79.9M	15	6.9
Other	12	5.5	80M ≥	14	6.4
Companion			Trip planner		
Family/Relatives	94	43.1	Myself	120	55
Close friend	33	15.1	Family/Relatives	47	21.6
Romantic partner	22	10.1	Close friend	16	7.3
Colleague	27	12.4	Romantic partner	7	3.2
Alone	37	17	Colleague	19	8.7
Other	5	2.3	Other	9	4.1

2. Evaluation of the measurement model

Smart PLS was used to estimate the reliability and validity of the proposed theoretical model before testing. Prior to testing the model, Confirmatory Composite Analysis (CCA) was performed to assess the measurement model (Hair et al., 2017). First, the standardized factor loading of each measurement item and its t-value were assessed. The standardized factor loading and t-values were all above the minimum threshold, as shown in Table 2. Second, Cronbach's Alpha and Composite Reliability (CR) tests were performed to verify reliability. With Cronbach's Alpha value of 0.726, the questionnaire distributed by researchers exceeded the threshold of 0.6, indicating its reliability. All CR values in Table 2 were above the minimum criteria (0.70). Third, convergent validity was confirmed as the average variance extracted (AVE) values for all latent variables exceeding the minimum criteria (0.50 or higher).

<Table 2> Reliability and Convergent Validity of the Measurement Model

Variables	Cronbach's alpha	Composite reliability (rho_a)	Composite reliability (rho_c)	Average variance extracted (AVE)
Education	0.781	0.782	0.859	0.604
Aesthetic	0.752	0.756	0.843	0.574
Entertainment	0.781	0.782	0.859	0.604
Escape	0.751	0.756	0.843	0.575
Emotional Value	0.777	0.796	0.856	0.599
Cognitive Value	0.792	0.806	0.866	0.619
Flow	0.793	0.793	0.866	0.617
Satisfaction	0.901	0.905	0.926	0.716
Place Attachment	0.826	0.834	0.883	0.655
Revisit Intention	0.726	0.734	0.845	0.645
Intention to Recommend	0.853	0.853	0.911	0.774

The Fornell-Larcker criterion and Heterotrait-monotrait ratio of correlations (HTMT) were used to assess discriminant validity. While the former is confirmed when the correlations between two constructs are lower than the square roots of the AVE value of the same constructs, the latter requires all the HTMT values for constructs to be below 0.9 (Henseler et al., 2015). Taken together, the results of the

CCA guarantee that our research framework and study samples showed a satisfactory level of reliability and validity for further empirical analysis (Table 3).

<Table 3> Measurement Model Discriminant Validity

Fornell-Larcker Criterion	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Aesthetic	0.758											
Place Attachment	0.266	0.809										
Education	0.532	0.305	0.746									
Entertainment	0.629	0.301	0.425	0.777								
Escape	0.637	0.342	0.401	0.538	0.758							
Flow	0.465	0.431	0.5	0.55	0.455	0.785						
Intention to Recommend	0.513	0.394	0.468	0.458	0.434	0.574	0.88					
Revisit Intention	0.393	0.585	0.484	0.502	0.396	0.537	0.693	0.803				
Satisfaction	0.625	0.4	0.55	0.562	0.574	0.627	0.705	0.608	0.846			
Cognitive Value	0.484	0.394	0.522	0.556	0.432	0.602	0.657	0.616	0.695	0.787		
Emotional Value	0.632	0.453	0.542	0.572	0.68	0.551	0.623	0.586	0.767	0.668	0.774	
HTMT	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Aesthetic												
Place Attachment	0.326											
Education	0.716	0.386										
Entertainment	0.819	0.361	0.557									
Escape	0.844	0.429	0.541	0.702								
Flow	0.606	0.525	0.654	0.706	0.591							
Intention to Recommend	0.644	0.453	0.591	0.562	0.536	0.696						
Revisit Intention	0.539	0.726	0.675	0.669	0.531	0.706	0.886					
Satisfaction	0.759	0.442	0.668	0.665	0.696	0.741	0.799	0.754				
Cognitive Value	0.621	0.477	0.659	0.705	0.553	0.764	0.800	0.818	0.818			
Emotional Value	0.817	0.558	0.694	0.725	0.879	0.692	0.745	0.766	0.897	0.850		

* Numbers in diagonal represent the squared root of the AVE value.

3. Structural Model Assessment and Results

The structural model and hypotheses were evaluated using SmartPLS 4.0 with path weighting and 10,000 bootstrap sub-samples. Model fit assessment showed a

satisfactory SRMR below the threshold of 0.09, while the NFI was below the suggested cutoff of 0.90. Two items exhibiting collinearity issues (Variance Inflation Score>3) were removed. As summarized in Table 4, the model demonstrated substantial explanatory power, with R² values ranging from moderate to strong across endogenous constructs, and all exceeding the recommended threshold for meaningful variance explanation. Effect size (f²) analysis indicated varied contributions of predictors, from negligible to large impacts. Predictive relevance was confirmed by positive Q² values for all endogenous variables (c.f., Hair et al., 2013).

〈Table 4〉 Explanatory and Predictive Power of the Structural Model

Predictor(s)	Outcome(s)	R2	R2adjusted	f2	Q2
Education Aesthetic Entertainment Escape	Emotional Value	0.588	0.581	0.091 0.023 0.036 0.224	0.560
Education Aesthetic Entertainment Escape	Cognitive Value	0.417	0.406	0.120 0.001 0.117 0.009	0.377
Emotional Value Cognitive Value	Satisfaction	0.696	0.689	0.446 0.059	0.545
Satisfaction	Place Attachment	0.160	0.156	0.191	0.155
Satisfaction Place Attachment	Revisit Intention	0.508	0.503	0.338	0.318
Satisfaction Place Attachment	Intention to Recommend	0.512	0.508	0.731	0.370
Flow	Satisfaction			0.090	
Flow x Emotional values	Satisfaction			0.066	
Flow x Cognitive values	Satisfaction			0.023	

Detailed results of the path analysis are presented in Table 5. Significant positive relationships were observed between all four experience economy dimensions that education ($\beta=0.232$, $t=4.019$, $p<0.001$), aesthetic ($\beta=0.148$, $t=2.000$, $p<0.05$), entertainment ($\beta=0.163$, $t=2.962$, $p<0.01$), escape ($\beta=0.406$, $t=5.678$, $p<0.001$) variables and emotional value at the $p<0.05$ and t-value greater than 1.96 supporting H1a, H1b, H1c, and H1d. Similarly, education ($\beta=0.316$, $t=4.266$, $p<0.001$)

and entertainment ($\beta=0.347$, $t=4.946$, $p<0.001$) had a significant positive influence on cognitive value, confirming H2a and H2c. However, aesthetic ($\beta=0.038$, $t=0.398$, $p>0.05$) and escape ($\beta=0.095$, $t=1.274$, $p>0.05$) showed no significant effects, leading to the rejection of H2b and H2d.

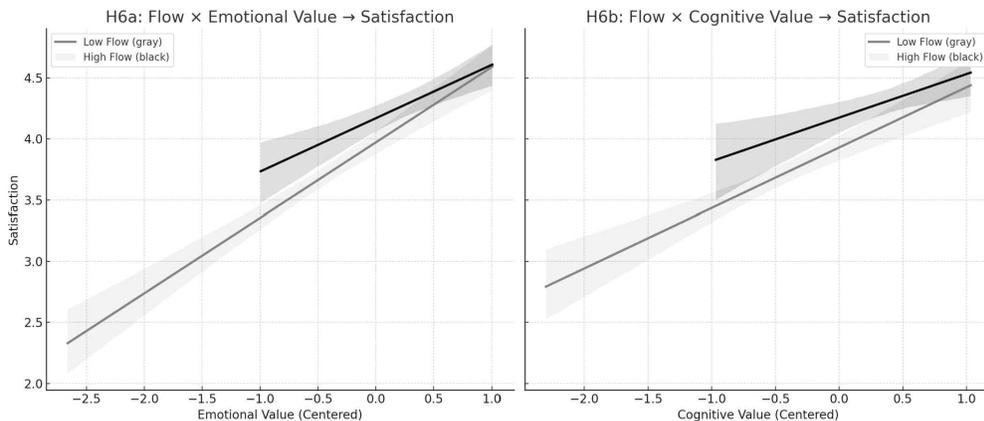
<Table 5> Results of Path Analysis

Direct Path		β	S.E.	t	p	Results	H
Education	→ Emotional Value	0.232	0.058	4.019	0.000	Supported	H1 a~d
Aesthetic	→ Emotional Value	0.148	0.074	2.000	0.046	Supported	
Entertainment	→ Emotional Value	0.163	0.055	2.962	0.003	Supported	
Escape	→ Emotional Value	0.406	0.071	5.678	0.000	Supported	
Education	→ Cognitive Value	0.316	0.074	4.266	0.000	Supported	H2 a~d
Aesthetic	→ Cognitive Value	0.038	0.095	0.398	0.691	Not supported	
Entertainment	→ Cognitive Value	0.347	0.070	4.946	0.000	Supported	
Escape	→ Cognitive Value	0.095	0.075	1.274	0.203	Not supported	
Emotional Value	→ Satisfaction	0.520	0.049	10.579	0.000	Supported	H3a
Cognitive Value	→ Satisfaction	0.199	0.066	3.020	0.003	Supported	H3b
Satisfaction	→ Place Attachment	0.400	0.067	5.993	0.000	Supported	H4
Satisfaction	→ Revisit Intention	0.445	0.062	7.218	0.000	Supported	H5a
Satisfaction	→ Intention to Recommend	0.652	0.042	15.373	0.000	Supported	H5b
Flow	→ Satisfaction	0.213	0.053	3.993	0.000	Supported	H6
Indirect Path (Moderation)	Emotional Value × Flow → Satisfaction	-0.189	0.046	-4.095	0.000	Supported	H6a
	Cognitive Value × Flow → Satisfaction	0.108	0.040	2.670	0.008	Supported	H6b
Place Attachment	→ Revisit Intention	0.407	0.064	6.348	0.000	Supported	H7a
Place Attachment	→ Intention to Recommend	0.134	0.053	2.527	0.012	Supported	H7b

Regarding satisfaction, emotional value (H3a) exhibited a significant positive effect on satisfaction ($\beta = 0.520$, $t = 10.579$, $p < 0.001$), highlighting the crucial role of

emotional experiences in shaping overall satisfaction. Likewise, cognitive value (H3b) demonstrated a significant positive effect ($\beta = 0.199$, $t = 3.020$, $p < 0.01$), indicating that both perceived value types contribute to satisfaction, thus supporting both H3a and H3b as shown in Table 5. Satisfaction was also positively associated with place attachment ($\beta=0.400$, $t=5.993$, $p<0.001$), confirming H4. Furthermore, satisfaction significantly influenced both revisit intention ($\beta=0.445$, $t=7.218$, $p<0.001$) and intention to recommend ($\beta=0.652$, $t=15.373$, $p<0.001$), thereby supporting H5a and H5b.

Furthermore, the moderating role of flow was explored to understand how it alters the relationship between perceived value and satisfaction. Flow showed a significant positive direct effect on satisfaction ($\beta=0.213$, $t=3.993$, $p<0.001$). However, when examining the interaction effects, flow negatively moderated the relationship between emotional value and satisfaction (H6a: $\beta= -0.189$, $t=4.095$, $p<0.001$), suggesting that higher flow weakens this positive association. In contrast, flow significantly moderated the relationship between cognitive value and satisfaction in a positive direction (H6b: $\beta=0.108$, $t=2.670$, $p<0.01$). These results support both H6a and H6b, as illustrated in Figure 2.



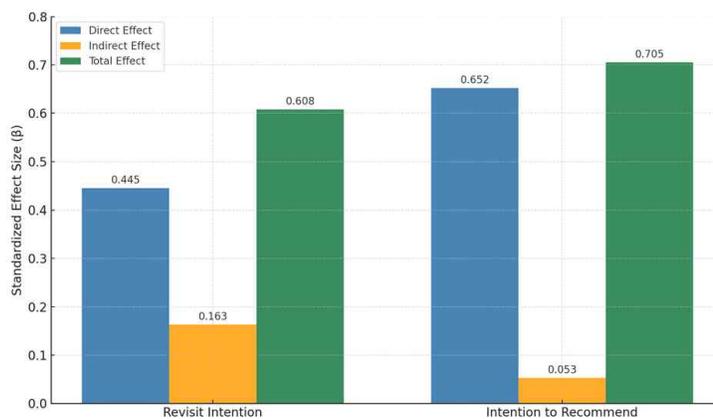
〈Figure 2〉 Moderation by Flow in Dark Tourism Satisfaction

The effect of place attachment on behavioral intentions was also verified that place attachment significantly influenced revisit intention ($\beta=0.407$, $t=6.348$, $p<0.001$) and intention to recommend ($\beta=0.134$, $t=2.527$, $p<0.05$), supporting H7a and H7b

respectively (see Table 5). Further mediation analysis of satisfaction's effects on behavioral intentions via place attachment confirmed that place attachment partially mediated the effect of satisfaction on revisit intention (indirect $\beta = 0.163$, $t = 4.397$, $p < 0.001$) and on intention to recommend (indirect $\beta = 0.053$, $t = 2.397$, $p < 0.05$), supporting H8a and H8b respectively. These findings, detailed in Table 6, imply that satisfaction directly impacts behavioral intentions, but part of this impact is transmitted through place attachment. The mediation components are further visualized in Figure 2, which illustrates the path coefficients and significance levels for both direct and indirect effects through place attachment.

<Table 6> Mediation analyses result

Total effects			Direct effect			Hypothesis	Indirect effects			
β	t	p	β	t	p		β	t	p	
0.608	12.50 2	0.000	0.445	7.218	0.000	Satisfaction → Place Attachment → Revisit Intention	0.163	4.397	0.000	H8a
0.705	20.54 2	0.000	0.652	15.37 3	0.000	Satisfaction → Place Attachment → Intention to Recommend	0.053	2.397	0.017	H8b



<Figure 3> Evaluation of Mediation Components

In summary, the results indicate strong empirical support for most hypothesized relationships, as detailed across Tables 4, 5, and 6. The four experience economy dimensions (4Es) have substantial effects on emotional value (H1a-d) and partial effects on cognitive value (H2a, H2c), which in turn influence satisfaction (H3a, H3b). Satisfaction significantly predicts both place attachment (H4) and behavioral intentions (H5a, H5b), while place attachment also plays a mediating role (H8a, H8b) and directly predicts behavioral outcomes (H7a, H7b). Flow acts as a nuanced moderator, weakening the emotional path but strengthening the cognitive path to satisfaction (H6a, H6b). The complete structural model results are summarized in Tables 4-6 and visualized in Figures 2 and 3.

V. Conclusion

1. Summary of study and interpretation

The results of the study indicates that 4Es are strongly associated with emotional value, emphasizing their important impact on behavioral intentions followed by overall satisfaction from the visit to dark tourism spots. Also, both perceived values were positively correlated with satisfaction. The moderating effect of flow on the relationship between perceived values and satisfaction suggests that flow may not significantly influence the impact of cognitive value on satisfaction in dark tourism contexts. This study highlights the complex ways in which the experience economy dimensions shape visitors' emotional and cognitive values at dark tourism sites, with education and entertainment playing key roles in enhancing cognitive engagement. The moderating effect of flow demonstrates that immersive, focused experiences significantly increase visitor satisfaction and place attachment, which in turn influence revisit and recommendation intentions. These findings conclude that dark tourism offers uniquely meaningful experiences that combine historical education with emotional reflection. The integration of hospitality and food and beverage services can further enrich these experiences, creating deeper visitor engagement. Overall, this research contributes to a deeper understanding of visitor behavior in dark tourism and provides a foundation for sustainable, ethically mindful destination

development.

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2. Theoretical implementation

This study advances the theoretical understanding of dark tourism by integrating the experience economy framework (Pine & Gilmore, 1998) with emotional and cognitive values, flow states, satisfaction, place attachment, and behavioral intentions. The experience economy dimensions—education, aesthetics, entertainment, and escapism—positively relate to emotional value, supporting prior findings emphasizing emotion's central role in immersive dark tourism (Sigala & Steriopoulos, 2022). Emotional engagement shapes perceptions of grief-laden sites, facilitating self-reflection and transformative outcomes tied to moral and existential themes (Weaver et al., 2018). Cognitive value is mainly influenced by education and entertainment, reflecting dark tourism's focus on intellectual confrontation with historical tragedy rather than sensory escapism or aesthetics (Sigala & Steriopoulos, 2022; Weaver et al., 2018).

A key theoretical contribution is the nuanced moderating role of flow (Csikszentmihalyi 1990), which negatively moderates emotional value by promoting concentration over affective intensity, while positively moderating cognitive value by enhancing intellectual engagement. These findings highlight the tension between immersion and emotional resonance in dark tourism, opening paths for further

theorization regarding how commodification intersects with tragedy. Satisfaction's role as a driver of revisit intentions and recommendations is mediated by place attachment, with flow strengthening cognitive satisfaction paths while subtly moderating emotional ones. The study also confirms satisfaction's pivotal role in driving revisit intentions and recommendations, mediated by place attachment. Visitors with stronger site bonds report higher satisfaction, amplifying behavioral loyalty. This mediation, influenced by flow, suggests that immersive states bolster cognitive pathways to satisfaction while subtly modulating emotional ones.

Overall, this research theoretically reframes dark tourism beyond consumption perspectives (Stone, 2006; Stone & Sharpley, 2008), applying the experience economy to Busan—a site weighted with Korean War and colonial legacies. It emphasizes educational and entertainment strategies to enrich visitor relevance and calls for reevaluating experience design to balance immersion and emotional impact. Incorporating flow theory enriches frameworks by illuminating psychological dynamics in satisfaction formation, offering a multidimensional lens valuable for socio-cultural contexts, including hospitality and food/beverage integration.

3. Practical implementation

Based on the study's findings, several practical implications emerge for positioning Busan as a sustainable and culturally rich dark tourism destination. First, dark tourism sites can enhance visitor engagement by designing immersive experiences that integrate storytelling, thematic accommodations, curated menus, and cultural events reflecting historical narratives. Collaborations with hospitality and F&B businesses can provide authentic local dining experiences and thematic stays, translating visitor satisfaction into a stronger connection with Busan's heritage.

Second, managing visitors' flow experiences is crucial to sustaining satisfaction and emotional well-being. Stakeholders should create balanced immersive environments that maintain engagement while allowing reflective and contemplative spaces. This approach ensures that visitors can process intense historical experiences without emotional overload, supporting positive behavioral intentions such as revisiting or recommending the site.

Third, fostering strong place attachment through high visitor satisfaction can

strengthen loyalty and sustainable tourism outcomes. Personalized services, community involvement, and culturally reflective experiences in accommodations and dining can deepen visitors' cognitive and emotional bonds with Busan. By strategically linking visitor satisfaction, flow, and place attachment, these approaches provide actionable insights for leveraging Busan's dark tourism sites to promote sustainable heritage tourism while enhancing long-term economic, cultural, and social benefits.

4. Limitations and future study direction

There are several limitations that need to be considered. The sample focuses on specific sites in Busan, and thus may not represent visitors to other types of dark tourism destinations or other regions. Personal connections to the history and the diversity in the sample may also be limited. Future studies should broaden the scope to explore additional locations and different visitor backgrounds. Researchers should also investigate the long-term effect of hospitality and food and beverage offerings on visitor satisfaction and place attachment.

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국문초록

부산의 다크투어리즘 장소에서 방문객 경험을 탐구한 본 연구는 경험경제와 몰입(flow) 이론의 틀 속에서 지각된 가치 차원 간의 상호작용을 밝히는 것을 목적으로 한다. 죽음, 비극, 역사적 트라우마와 연관된 장소를 방문하는 다크투어리즘은 독특한 정서적·인지적 도전을 제공하지만, 관광 연구에서는 아직 충분히 탐구되지 않았다. Pine과 Gilmore의 경험경제 모형을 바탕으로, 본 연구는 교육, 오락, 심미, 도피적 경험이 정서적·인지적 가치, 만족도, 장소 애착, 행동의도에 어떠한 영향을 미치는지를 규명하였다. 더 나아가, 본 연구는 몰입의 조절 효과를 검증하여, 몰입과 최적 경험이 관광객 인식 형성에 미치는 중요성을 강조하였다. 설문조사는 온라인과 현장에서 병행하여 진행되었으며, 부산의 다크투어리즘 장소를 방문한 300명의 유효 응답이 수집되었다. 구조방정식 모형(SEM) 분석 결과, 네 가지 경험경제 요소는 모두 정서적 가치에 긍정적인 영향을 미쳤으며, 그중 교육적 경험과 오락적 경험만이 인지적 가치를 유의미하게 향상시키는 것으로 나타났다. 또한 분석 결과, 정서적 가치와 만족도의 관계에서 몰입의 유의한 조절 효과가 확인되었으며, 깊은 몰입은 경험에 대한 긍정적 평가를 강화하는 것으로 나타났다. 본 연구는 경험경제와 몰입 이론의 적용 범위를 다크투어리즘 연구로 확장함으로써 방문객 몰입에 대한 보다 정교한 이해를 제공한다는 점에서 이론적 기여를 제시한다. 실무적으로는, 연구 결과가 장소 관리자와 목적지 마케터에게 해석 프로그램, 몰입적 스토리텔링, 참여형 활동을 설계할 전략적 시사점을 제공하여 방문객 만족도를 높이고 지속가능한 다크투어리즘 발전을 도모할 수 있음을 시사한다.

주제어: 다크투어리즘, 방문객 경험, 경험경제, 4E, 플로우 이론, 인식가치, 장소 애착, 만족, 행동 의도.