

## **A Structural Analysis of the Impact of Service Quality on Visitor Satisfaction, Behavioral Intentions, and the Perceived Image of the Host City in Urban Festivals**

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### **Abstract**

This study empirically analyzes the impact of service quality in urban nighttime exhibition festivals on participants' overall satisfaction and subsequent responses. A survey was conducted with 334 attendees of the Seoul Lantern Festival, and the questionnaire was developed based on previous studies and validated through expert review. Reliability analysis showed that all constructs had Cronbach's  $\alpha$  values above .70 (e.g., program quality  $\alpha$  = .842), and convergent validity was confirmed with AVE  $\geq$  .50 and CR  $\geq$  .70 (e.g., program quality AVE = .684, CR = .881). Structural equation modeling indicated acceptable model fit ( $\chi^2/df$  = 2.295, CFI = .959, RMSEA = .062). Hypothesis testing revealed that program and exhibition environment quality significantly influenced overall satisfaction, which in turn positively affected behavioral intention and city image. This study contributes to theoretical systematization and provides practical strategies for festival management and urban cultural policy. Furthermore, it highlights the potential of urban nighttime festivals as strategic cultural assets that can promote urban cultural tourism, attract visitors, and revitalize the local economy.

**Keywords:** *Urban Nighttime Festival, Service Quality, Visitor Satisfaction, Behavioral Intention, City Image.*

### **Introduction**

Urban nighttime exhibition festivals serve as cultural events enjoyed by local both residents and visitors, strengthening a city's identity and brand value through differentiated content rooted in local culture and art. Specifically, the Seoul Lantern Festival provides visitors with a visually immersive experience that seamlessly blends tradition and modernity, leaving a lasting impression while contributing to the enhancement of the city's image and the revitalization of the local economy. Such festivals are considered important policy instruments for preserving cultural identity and fostering community cohesion, while also delivering tangible economic benefits through tourism promotion and increased local spending[1].

Local festivals offer visitors immersive traditional experiences through diverse elements such as attractions, entertainment, food, and educational activities. These experiences support the safeguarding of regional cultural identity and contribute to national and regional economic development[1][2]. Festivals are intentionally planned and managed to generate a variety of outcomes, including increased tourism revenue, the creation of customized employment opportunities, and the provision of new cultural activities[2]. For instance, in 2025, the Seoul Lantern Festival is projected to generate a total expenditure of approximately USD 16.5 million, with an estimated production inducement effect of USD 20.2 million, income inducement effect of USD 3.9 million, value-added inducement effect of USD 7.9 million, and employment inducement of 325 jobs, demonstrating its substantial economic impact[3].

The successful operation of such festivals depends critically on service quality as a core factor. Content originality, environmental comfort, and operational efficiency directly influence visitor satisfaction, which in turn leads to behavioral intentions such as willingness to revisit and positive word-of-mouth recommendations. Ultimately, these factors contribute to enhancing the city's image and

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brand recognition. Prior research also indicates that alignment between festival brands and city images positively affects visitors' brand loyalty and perceptions of the city's image[3].

This study aims to systematically analyze the service quality of local festivals by identifying content and environmental quality factors and empirically examining their effects on visitor satisfaction and behavioral intentions[5][6][7][8][9], with the goal of proposing directions for successful urban festivals. Based on the hypothesis that service quality satisfaction in urban nighttime festivals will have a significant impact on visitors' behavioral intentions and the city's image, this research focuses on empirically analyzing specific service quality factors of the Seoul Lantern Festival. The objective is to propose strategic planning and management directions for successful urban festivals and to provide practical measures for enhancing local economic impacts and the city's brand value.

## **Theoretical Background**

### **Theoretical Background and Impact Analysis**

Urban festivals are cultural events conducted by specific local communities, serving as cultural phenomena that intensively reflect the social and cultural characteristics of the area as well as the identity of the community. These festivals have evolved by inheriting the forms of traditional festivals while simultaneously accommodating the cultural demands of contemporary urban settings, with particular emphasis on their playful and entertaining characteristics. Urban festivals go beyond simple amusement to perform multiple functions, including boosting urban economic vitality, promoting social integration, and realizing cultural diversity, thereby enhancing the quality of urban life[10][11].

From an economic perspective, urban festivals serve as strategic tools for revitalizing the urban economy by enhancing the city's image and attracting tourists. Socially, they strengthen bonds among citizens, foster collective identity, and can also be used to disseminate specific ideologies. Culturally, they function as spaces that satisfy citizens' cultural needs and are reconstructed in diverse forms that fuse tradition and modernity, thereby reflecting urban cultural diversity and creativity. In particular, modern urban festivals have evolved through city government leadership, with experts developing ideas that are artificially planned, adapting traditions in contemporary ways, or developing new cultural elements as events.

Within this developmental trajectory of urban festivals, nighttime exhibition festivals have garnered attention as a format that maximizes the city's visual and experiential appeal, acting as important cultural assets for enhancing urban symbolism and competitiveness.

Accordingly, this study empirically analyzes the impact of service quality on participants' overall satisfaction, behavioral intentions, and perceptions of the city image, focusing on the Seoul Lantern Festival as a case of an urban nighttime exhibition festival. A survey was conducted with 334 visitors to the Seoul Lantern Festival, collecting data on demographic characteristics, usage behaviors, service quality, overall satisfaction, behavioral intentions, and city image. Service quality was measured by distinguishing between program quality and exhibition environment quality, and the relationships among variables were analyzed using structural equation modeling (SEM).

Descriptive statistical analysis was conducted to identify general characteristics such as means and frequencies, while internal consistency coefficients (Cronbach's  $\alpha$ ) were calculated to verify reliability. Exploratory factor analysis (EFA) was used to ensure the reliability and validity of the measurement instruments, and regression analysis was performed to test the effects of service quality on satisfaction, behavioral intentions, and city image, as well as to evaluate the acceptance of the proposed hypotheses[12][13][14][15].

Through this research design, the study empirically tests the following hypothesis: "Service quality satisfaction in urban nighttime festivals will have a significant impact on visitors' behavioral intentions and perceptions of the city image," along with sub-hypotheses H1–H4. By analyzing the structural effects of service quality on participants' satisfaction, behavioral intentions, and perceptions of the city image in urban nighttime exhibition festivals, this study offers practical implications for festival organizers to develop strategies for improving service quality, enhancing overall satisfaction, and shaping a positive city image.

### **Analysis of the Structural Effects of Festival Service Quality on Behavioral Intentions and City Image**

This study analyzes and tests the hypothesis that "service quality satisfaction in urban nighttime festivals will have a significant impact on visitors' behavioral intentions and perceptions of the city

image,” in order to examine the structural effects of service quality in urban nighttime exhibition festivals on visitor satisfaction, behavioral intentions, and city image.

Based on prior research on urban festivals[1][2], service quality[3][4][5][6][7][8][9], and their relationships with visitor satisfaction, behavioral intentions, and city image[10][11][12][13][14], the study proposes the following research model and hypothesis. Service quality in urban nighttime festivals is defined as participants' subjective evaluation of the gap between their expectations and the actual service experience, comprising three key elements: venue facilities, promotion and guidance, and event programs[16].

Such service quality exerts a significant influence on visitors' overall satisfaction, which acts as an important mediator leading to behavioral intentions such as willingness to revisit and positive word-of-mouth recommendations. In particular, due to the characteristics of nighttime festivals, elements specific to nighttime environments such as lighting, safety, and atmosphere have a stronger impact on visitors' emotional responses and experiential satisfaction. This, in turn, contributes to the sustainability of the festival and the formation of positive perceptions within the local community[17][18].

Nighttime exhibition festivals such as the Seoul Lantern Festival function as cultural content that integrates traditional and modern cultural elements to express the city's identity, attract tourists, enhance the city's positive image, and promote economic vitality. In this context, the study empirically analyzes the effects of service quality on overall satisfaction, behavioral intentions, and city image among participants in the Seoul Lantern Festival, aiming to offer practical strategies for festival organizers to improve service quality, foster positive city image formation, and enhance urban value.

To analyze the structural impact of the hypothesis “service quality satisfaction in urban nighttime festivals will have a significant impact on visitors' behavioral intentions and perceptions of the city image”, a confirmatory factor analysis (CFA) was conducted[19]. The analysis results indicated that the model fit indices were generally acceptable, with particularly strong values for CFI(.959) and NFI(.930). GFI(.890) also met the generally accepted threshold of .850 or higher.

A CFA was conducted to verify the structural validity of the measurement model examining the impact of service quality in urban nighttime exhibition festivals on satisfaction, behavioral intentions, and city image. The model fit indices ( $\chi^2/df = 2.295$ , GFI = .890, AGFI = .847, NFI = .930, CFI = .959, RMSEA = .062, RMR = .035) generally satisfied accepted thresholds for model fit, with CFI and NFI demonstrating particularly strong fit at .959 and .930, respectively. GFI(.890) also met the acceptable benchmark of .850 or higher proposed in prior research.

The construct reliability ( $CR \geq .70$ ) and average variance extracted ( $AVE \geq .50$ ) mostly met the required thresholds, indicating that the measurement items were appropriate for the theoretical structure and demonstrated convergent and discriminant validity[20]. This provides evidence supporting the reliability and validity of the structural model analysis. The analysis of the measurement items is presented in Table 1.

**Table. 1 Confirmatory Factor Analysis (CFA) and Model Fit**

Index	Value	Acceptable Threshold	Interpretation
$\chi^2/df$	2.295	< 3	Acceptable
GFI	0.890	$\geq .85$	Acceptable
AGFI	0.847	$\geq .80$	Acceptable
NFI	0.930	$\geq .90$	Excellent
CFI	0.959	$\geq .90$	Excellent
RMSEA	0.062	< .08	Acceptable
RMR	0.035	< .05	Acceptable

In addition, the construct reliability ( $CR \geq .70$ ) and average variance extracted  $AVE \geq .50$ ) generally met the recommended thresholds, confirming that the measurement items were appropriate for the theoretical structure. The analysis of the measurement items is presented in Table 2.

**Table. 2: Construct Validity Summary**

Construct	CR	AVE	$\sqrt{AVE}$	Highest Correlation (r)
Program Quality	$\geq .70$	$\geq .50$	.919	.908 (Overall Satisfaction)
Exhibition Environment Quality	$\geq .70$	$\geq .50$	.916	.880 (Overall Satisfaction)
Convenience Facilities Quality	$\geq .70$	$\geq .50$	.865	-
Product Quality	$\geq .70$	$\geq .50$	.873	-
City Image Enhancement	$\geq .70$	$\geq .50$	.916	-

To verify validity and examine correlations, a confirmatory factor analysis (CFA) was conducted to analyze the structural effects of service quality in urban nighttime exhibition festivals on visitor satisfaction, behavioral intentions, and perceptions of the city image. The analysis results indicated that the model fit indices generally met recommended thresholds, with particularly strong values for CFI(.959) and NFI(.930), demonstrating excellent fit. GFI(.890) also exceeded the conventional benchmark of .850, supporting the model's adequacy.

In addition, the construct reliability(CR  $\geq .70$ ) and average variance extracted(AVE  $\geq .50$ ) generally satisfied the recommended criteria, confirming that the measurement items were appropriate for the theoretical structure. Correlation analysis showed that all variables were significantly correlated at the  $p < .01$  level, and discriminant validity was established according to Fornell and Larcker's(1981) criterion[21]. For example, the square root of the AVE for program quality(.919) was higher than its correlation with overall satisfaction(.908), with exhibition environment quality demonstrating similar results.

These findings suggest that the service quality of the Seoul Lantern Festival can positively influence visitor satisfaction, behavioral intentions, and ultimately the formation of a favorable city image. Moreover, the results indicate that the structural model analysis was conducted based on reliable and valid measures, ensuring both theoretical and empirical validity in the interpretation of the study's findings.

## Empirical Analysis of Hypotheses

### Structural Model Fit Analysis

Based on the research theme, this study conducted a structural model fit analysis to empirically test the hypothesis: "Satisfaction with service quality in urban nighttime festivals significantly influences visitors' behavioral intentions and perceptions of city image."

The results revealed that the model was statistically significant ( $\chi^2 = 2.974$ ,  $df = 229$ ,  $p = 0.000$ ). Key fit indices indicated a generally good model fit: the Comparative Fit Index(CFI = 0.933) and the Normed Fit Index(NFI = 0.903) both exceeded the recommended threshold of 0.90, demonstrating excellent fit. The Root Mean Square Error of Approximation(RMSEA = 0.077) was below the cutoff value of 0.08, suggesting an acceptable level of approximation error.

Although the Goodness-of-Fit Index(GFI = 0.850) and the Adjusted Goodness-of-Fit Index (AGFI = 0.803) fell slightly below the conventional standard of 0.90, prior studies (Byrne, 2010; Hair et al., 2010) consider values above 0.850 to be within a reliable range. Therefore, these indices were interpreted as acceptable within the context of this study.

Overall, the results confirm that the proposed structural model demonstrates statistically sound fit with the empirical data, validating the model's robustness. Furthermore, the findings support the statistical reliability of analyzing the impact of service quality on visitor satisfaction, behavioral intentions, and city image.

These results provide a solid foundation for empirically examining the study's hypothesis and reinforce the idea that urban nighttime exhibition festivals such as the Seoul Lantern Festival can serve as strategic cultural assets that enhance city image and influence visitor behavior.

## Results of Hypothesis Testing

The effect of Program Quality (PQ) on Overall Satisfaction (SAT) was found to be statistically significant ( $\beta = .559$ ,  $t = 3.818$ ,  $p < .001$ ). Accordingly, Hypothesis H1 was supported, indicating that the composition and content of the festival program play a decisive role in shaping participants' overall evaluations.

In addition, Exhibition Environment Quality (EXQ) also showed a positive impact on overall satisfaction ( $\beta = .309$ ,  $t = 2.373$ ,  $p < .05$ ). This suggests that physical environmental factors such as the atmosphere of the venue, visual design, and arrangement of installations meaningfully contribute to the formation of visitor satisfaction.

Meanwhile, Overall Satisfaction (SAT) was found to have a significant influence on both Behavioral Intentions (BEH) and City Image Enhancement (IMG). The effect on behavioral intentions was  $\beta = .614$ ,  $t = 11.378$  ( $p < .001$ ), and the effect on city image was  $\beta = .416$ ,  $t = 7.000$  ( $p < .001$ ).

## Empirical Findings

This study conducted a Confirmatory Factor Analysis (CFA) to examine the structural impact of service quality in urban nighttime exhibition festivals on visitor satisfaction, behavioral intentions, and city image. The analysis results indicated that the model's goodness-of-fit indices were generally at a reliable level. In particular, the Comparative Fit Index (CFI = .959) and the Normed Fit Index (NFI = .930) demonstrated excellent model fit. The Goodness-of-Fit Index (GFI = .890) also met the acceptable threshold based on conventional standards.

**Table 3: Construct Validity Summary**

<i>Tesis</i>	<i>Path</i>	<i>Standardized Coefficient</i>	<i>Standard Error</i>	<i>t-value</i>	<i>p-value</i>	<i>Accepted</i>
<b>H1-1</b>	Program Quality (PQ) → Overall Satisfaction (SAT)	0.559	0.538	3.818	0.000	Accepted
<b>H1-2</b>	Exhibition Environment Quality (EXQ) → Overall Satisfaction (SAT)	0.309	0.290	2.373	0.018	Accepted
<b>H1-3</b>	Overall Satisfaction (SAT) → Behavioral Intention (BEH)	0.614	0.901	11.378	0.000	Accepted
<b>H1-4</b>	Overall Satisfaction (SAT) → City Image (IMG)	0.416	0.716	7.000	0.000	Accepted

Note : \*= $p < .05$ , \*\*= $p < .01$

This study investigated the hypothesis that service quality in urban nighttime festivals significantly influences visitor behavioral intentions and perceptions of city image through satisfaction, by testing four sub-hypotheses: H1-1, H1-2, H1-3, and H1-4. The analysis demonstrated that both program quality and exhibition environment quality had significant positive effects on overall satisfaction, supporting H1-1 and H1-2. In turn, overall satisfaction positively influenced behavioral intentions and city image enhancement, validating H1-3 and H1-4. These findings are detailed in Table 3.

This empirical evidence confirms that festival satisfaction serves as a key driver of follow-up behaviors, including revisit intentions, word-of-mouth recommendations, and improved perceptions of the host city. It underscores the critical role of service quality not only in shaping individual experiences but also in enhancing the broader cultural image of urban environments.

## Conclusion and Implications

This study aims to analyze the structural impact of service quality on visitor satisfaction, behavioral intentions, and city image in the context of urban nighttime exhibition festivals, with a particular focus on the 2025 Seoul Lantern Festival. Drawing on empirical data collected from festival attendees, the research investigates how perceptions of service quality influence overall satisfaction and subsequent behavioral responses. The results of hypothesis testing indicate that program quality (PQ) exerts a

significant positive influence on overall satisfaction (SAT) ( $\beta = 0.559$ ,  $t = 3.818$ ,  $p < 0.001$ ), thereby supporting hypothesis H1-1. This finding underscores the critical role of content composition and quality in shaping participant satisfaction. Likewise, exhibition environment quality (EXQ) was found to significantly affect overall satisfaction ( $\beta = 0.309$ ,  $t = 2.373$ ,  $p = 0.018$ ), validating H1-2. This suggests that factors such as ambiance, visual design, and spatial arrangement contribute meaningfully to the emotional experience of attendees. Moreover, overall satisfaction (SAT) significantly influenced behavioral intentions (BEH) ( $\beta = 0.614$ ,  $t = 11.378$ ,  $p < 0.001$ ), confirming H1-3. This implies that satisfaction strongly drives follow-up behaviors, including the intention to revisit and recommend the festival to others. Additionally, overall satisfaction had a notable impact on city image (IMG) ( $\beta = 0.416$ ,  $t = 7.000$ ,  $p < 0.001$ ), supporting H1-4. This demonstrates that a positive festival experience can enhance perceptions of the host city. These findings empirically validate a structural pathway in which the quality of programs and the exhibition environment serve as key determinants of satisfaction, which in turn directly influences behavioral changes and the formation of city image. Details of the measurement item analysis are presented in Table 3: Construct Validity Summary.

The implications of this study are threefold. First, urban nighttime festivals such as the Seoul Lantern Festival reveal that artistic and sensory experiences have a greater impact on satisfaction than traditional evaluation criteria. Accordingly, future festival planning should prioritize the enhancement of emotional content through advanced lighting technologies, creative spatial design, and immersive storytelling. Second, while basic amenities, products, operations, and guidance should be maintained to meet fundamental expectations, strategies focused solely on these elements may have limited effectiveness in improving satisfaction. In particular, components such as information booths and sales stands should be redesigned to facilitate visitor flow and sensory engagement, rather than merely delivering information. Third, satisfaction emerges as a pivotal variable that drives various post-festival responses, including intentions to revisit, word-of-mouth recommendations, and improved perceptions of the city. Thus, enhancing satisfaction not only contributes to the success of the festival but also plays a vital role in strengthening the city's image and cultural competitiveness.

In conclusion, this study provides empirical evidence of the structural impact of service quality in urban nighttime exhibition festivals on participant satisfaction, behavioral intentions, and city image. It offers practical guidance and strategic insights for future festival planning and the development of effective evaluation metrics.

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