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Evaluating the Economic Value of Local Culture and Arts Festival Entrance Fee to using Contingent Valuation Method

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ABSTRACT

Purpose: Global cultural and arts festivals are often cited to enhance the image of a region and stimulate its economy. However, research and discussions regarding these global cultural and arts festivals have mainly focused on their outcomes and strategies for activation, with limited emphasis on evaluating the intrinsic value of the festivals themselves, particularly their economic value. The aim of this study is to define global cultural and arts festivals and propose methods for estimating their economic value.

Design/methodology/approach: This study employed the Contingent Valuation Method (CVM) to assess the economic value of cultural and arts festivals. A representative global cultural and arts festival was selected, and a double dichotomous choice contingent valuation method was utilized to propose a method for assessing willingness-to-pay (WTP) for cultural and arts festivals. Following a survey to investigate respondents' WTP and the value of 263 valid copies, data were analyzed using SPSS and STATA.

Findings: In this study, we aimed to estimate the WTP per person for the admission fee of the Jeju International Wind Ensemble Festival (JIWEF) and demonstrate the versatility of this methodology through analysis using various data sources. Additionally, we estimated the economic value of the admission fee for the JIWEF, by multiplying the WTP per person for the admission fee by the average number of attendees.

Research limitations/implications: Although there are limitations to generalization focusing on specific festivals, the research results suggest implications for foreign visitor arrivals and nurturing global consumers through global culture and arts festivals.

Originality/value: So far, research related to culture and arts festivals has mainly focused on the festival's performance or revitalization measures, and research on the evaluation of the value of the culture and arts festivals themselves, especially their economic value, has not been actively conducted. This study is different in this regard.

Keywords: Culture and arts festival, Jeju International Wind Ensemble Festival, Economic value, Contingent valuation method, Willingness to pay

I. Introduction

Cultural and arts festivals constitute noteworthy

expressions of cultural and artistic engagement, intending to disseminate and appreciate the values inherent in culture and arts among a broader demographic. Beyond serving as platforms for cultural enrichment, these festivals play a pivotal role in augmenting the local image and fostering economic vitality, thereby exerting a positive influence on the national image.

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Discussions frequently center on festivals as instrumental mechanisms for fortifying the reputation and invigorating the economic landscape of a given region.

Despite numerous studies and discussions on cultural and arts festivals focusing primarily on the festivals' outcomes or strategies for their activation, they have tended to examine these festivals through the lens of non-economic values such as simple cultural or social values. Due to the free admission policies of cultural arts festivals, which negate any visible value in terms of entrance fees, attendees have found it challenging to perceive the value of these festivals. Moreover, despite offering various benefits and consistently attracting large numbers of attendees, economic valuation of these festivals has not been explicitly conducted when compared to other paid events such as specific performances or musicals.

Examining instances such as Hawaii in the United States and Jeju in South Korea, where global cultural and arts festivals attract a diverse audience encompassing residents and both domestic and international tourists, underscores the anticipation of a significant impact on the economic dimensions of the local community, inclusive of its economic worth.

Generally, global cultural and arts festivals, characterized by the nature of public and shared goods, often have either no entrance fee or entail minimal costs. Consequently, assessing their value through conventional market mechanisms and institutions is limited, given that these festivals qualify as non-market goods, rendering the measurement of their economic value challenging. Diverging from typical commodities, cultural and arts festivals frequently encompass a broader non-market value alongside their market value. Due to the frequent absence of transactions in the market for cultural and arts festivals, their economic value tends to exceed their market value. A method apt for estimating the total value of cultural and arts festivals, encompassing not only the market value but also the non-economic value, which general goods lack, is the Contingent Valuation Method (CVM) (Boo, 2019).

In this study, the CVM was employed to assess

the economic value of a global cultural and arts festival, with the Jeju International Wind Ensemble Festival, one of the representative tourist destinations in South Korea, selected as a case study. To estimate the economic value of the cultural and arts festival, the pivotal survey design phase involved establishing hypothetical scenarios and conducting a survey. Through statistical analysis, the study aimed to derive the willingness to pay (WTP) per person based on respondents' WTP for admission fees. This research focuses on estimating the WTP per person for the admission fees of cultural and arts festivals. By comparing and analyzing the estimated admission fees of different festivals, it seeks to demonstrate the diverse applicability of the results. Although the WTP is merely an estimated value, utilizing the CVM to assess the economic value of admission fees for non-market cultural and arts festivals can serve as foundational data for policy investments aimed at ensuring the sustainability and development of global cultural and arts festivals within local communities.

II. Literature Review

A. Economic value of Local Culture and Arts Festival

Cultural and artistic activities possess intrinsic values as an essence in themselves and exhibit economic values based on a series of economic activities (McCain, 2006). The economic value of goods and services is contingent upon preferences and choices derived from human desires, irrespective of whether they pertain to market or non-market goods (Park, 2018). Non-market goods, such as cultural and arts festivals with a pronounced public goods nature, differ from conventional goods in that their value cannot be accurately estimated by market mechanisms. Consequently, since the 1960s, there has been considerable interest in resource economics in estimating the economic value of resource utilization, particularly for non-market goods like

cultural and arts festivals (Wiśniewska, 2019). The evaluation of the economic value of non-market goods, such as cultural and arts festivals, involves two distinct methods: the Revealed Preference Method (RP) and the Stated Preference Method (SP) (Hanley and Czajkowski, 2019; Tabasi et al., 2023).

The RP involves assessing the impact of a non-market good, the subject of evaluation, on technically or structurally associated private market goods, and subsequently indirectly estimating the value of the non-market good. In contrast, the SP entails establishing a hypothetical market for the non-market good, where transactions are conceivable, and directly expressing the WTP for the non-market good. Noteworthy methods within the RP approach include the Travel Cost Method (TCM) and the Hedonic Price Method (HPM), while the SP approach is exemplified by the CVM and Conjoint Analysis Method. The RP approach, being a retrospective assessment method, observes economic agents' transactions in the market to estimate value. On the other hand, the SP approach, as a prospective assessment method, establishes a virtual market for the non-market good to estimate its value (Akhter and Yew, 2013). While the RP approach is generally less costly to apply than the SP approach, it has constraints in terms of applicability and cannot account for non-economic values, potentially leading to theoretical underestimation. In contrast, the SP approach, despite being resource-intensive, is theoretically more accurate and has no constraints on applicability. Thus, although cost-intensive, the SP approach is theoretically preferable to the RP approach, explaining why stated preference methods like contingent valuation are more widely applied (Jo, Ryu, and Shin, 2022).

In this study, we aim to adopt the CVM, considered the most widely used and universally accepted methodology among various approaches in academia. CVM stands out as a widely applied and well-regarded methodology among the research methodologies developed and iteratively applied thus far. CVM is extensively utilized for estimating the value of specific non-market goods, and guidelines have been established to ensure more accurate and objective results.

Analyzing data obtained from the Dichotomous Choice Contingent Valuation Method (DC-CVM) model allows for the examination of representative values of WTP. Two prominent models for this analysis are the Utility Difference Model proposed by Hanemann (1984) and the WTP Function Approach introduced by Cameron and James (1987). Given the contention that the Utility Difference Model aligns with utility theory, it is predominantly employed in empirical studies over the WTP Function Approach.

The operation of this model follows the subsequent procedures. Firstly, responses to questions regarding the WTP for the stated amount are modeled, incorporating discrete responses such as "yes" or "no." Subsequently, relevant parameters are estimated using maximum likelihood estimation. In the next step, utilizing the nature of the distribution and definitions of median or mean values, the median or mean value of WTP is calculated. Respondents' utility for a public good's state (j) based on their given monetary income (m) and individual characteristics vector (S) can be expressed through the following indirect utility function, provided that the respondents accurately know their utility functions (u).

$$u = u(j, m; S), \quad j = 0, 1$$

In this context, $j = 0$ signifies the state where the public good is either unavailable for use or not preserved, while $j = 1$ denotes the state where the public good is available for use or preserved. However, there exists an unobservable aspect for researchers regarding respondents' choices or refusals to the observed changes in the state of the target public good. Therefore, the indirect utility function is structured with the observable deterministic component $v(j, m; S)$ and the unobservable stochastic component ϵ_j as follows.

$$u(j, m; S) = v(j, m; S) + \epsilon_j$$

The stochastic component, ϵ_j , influencing the indirect utility function is a probability element that is independent and identically distributed regardless

of j , with a mean of 0. Assume everyone seeks to maximize their utility. In that case, everyone satisfies the following condition: when asked the question "Are you willing to pay A for the use or preservation of the public good?" they respond "yes" while willingly paying A , thus maximizing their utility.

$$\begin{aligned} v(1, m-A; S) + \epsilon_1 &\geq v(0, m; S) + \epsilon_0 \text{ or} \\ v(1, m-A; S) - v(0, m; S) &\geq +\epsilon_0 - \epsilon_1 \end{aligned}$$

Now, the difference in utility and the difference in error term are defined as follows:

$$\begin{aligned} \Delta v(A) &\equiv v(1, m-A; S) - v(0, m; S) \\ \eta &\equiv \epsilon_0 - \epsilon_1 \end{aligned}$$

In that case, the probability of responding "yes" is expressed as follows:

$$\begin{aligned} \Pr\{\text{responding "yes"}\} &= \Pr\{\Delta v(A) \geq \eta\} \\ &= F_\eta[\Delta v(A)] \end{aligned}$$

$F_\eta[\cdot]$ represents the cumulative distribution function of η . The response "yes" is observed when $\Delta v \geq 0$, and the response "no" is observed when $\Delta v < 0$. From now on, denoting WTP as C its cumulative distribution function as a probability variable is defined as $G_c(A)$. Meanwhile, the above expression can be alternatively represented as follows:

$$\Pr\{\text{responding "yes"}\} = \Pr\{C \geq A\} \equiv 1 - G_c(A)$$

Therefore, by comparing the two equations, we can derive the following relationship:

$$1 - G_c(A) \equiv F_\eta[\Delta v(A)]$$

This result implies that fitting a discrete choice model is tantamount to estimating the parameters of the distribution function $G_c(\cdot)$ for WTP. Here, C represents the WTP for transitioning from the state $j=0$ to the state $j=1$. The mean (C^+) when C can also have negative values is commonly calculated

as follows:

$$C^+ = E(C) = \int_0^\infty [1 - G_c(A)] dA - \int_{-\infty}^0 G_c(A) dA$$

Furthermore, the median WTP (C^+) can be obtained by solving the following equation for C :

$$G_c(C) = 0.5$$

If WTP must be greater than or equal to 0, the average value under this condition (C^{++}) is calculated as follows:

$$C^{++} = \int_0^\infty [1 - G_c(A)] dA$$

The values derived here correspond to the value for one individual, so to extrapolate to the overall economic value, the evaluated values for all individuals should be summed or the number of individuals should be multiplied by the average value (Gallai et al., 2009).

III. Methods

A. Sampling and Selection of Stated Amounts

To evaluate the value of the global cultural and arts festival, individuals aged 20 and above who have experienced the Jeju International Wind Ensemble Festival (JIWEF) at least once were selected as the research subjects. Considering the evaluation of economic value with the payment of an entrance fee, it was deemed rational to target individuals who have experienced the festival as the sample group. As it was considered inappropriate to inquire about the entrance fee for those who have not experienced the festival, the sample selection was limited to attendees with prior experience. A total of 38 individuals who had experienced the JIWEF were surveyed using open-ended questions, and based on

their responses, four stated amounts were determined for the main survey. In this study, 300 samples were collected, and a survey was conducted among adults aged 20 and above who had experienced the JIWEF at least once, including attendees of the 2023 JIWEF Spring Season and those with prior attendance.

To address potential biases that may arise during the survey phase of the CVM, the following solutions were applied. To minimize starting point bias, a realistic hypothetical scenario for the JIWEF was presented to respondents in a manner that was easily understandable, and a pre-survey was conducted. To eliminate payment method bias, entrance fees were introduced as the means that participants must use if they wished to attend the festival. To minimize strategic bias, an open-ended question format was used for the pre-survey, while a double-bounded dichotomous choice format was employed for the main survey to maintain internal consistency among respondents. Additionally, to reduce information and hypothetical bias, a brief introduction to the history and status of the JIWEF was provided, a virtual scenario was aligned with actual situations, and attendees with prior experience were selected as the sample. Trained interviewers were employed in the interview survey to minimize compliance bias.

B. Research Model for Estimating WTP

Based on prior research, this study selected variables expected to influence the WTP for the entrance fee of the JIWEF. The chosen variables encompassed general characteristics and attendee behaviors. General characteristics included gender (GEN), age (AGE), education level (EDU), and income (INC). Attendee behaviors were represented by the frequency of attendance (FRE), duration of attendance (TIM), satisfaction level (SAT), enjoyment (ENJ), intention to revisit (REV), intention to word of mouth (WOM), appreciation of performances (LIS), leisure activities (LEI), educational purposes (STU), job relevance (REL), word-of-mouth recommendations from acquaintances (REC). Respondents indicated

their WTP for the initial stated amount to support and enhance JIWEF, with responses categorized as "yes" or "no." To analyze such closed-ended questions, logistic regression was employed. The explanation for this approach is provided as follows:

$$\Pr\{\text{responding "yes"}\} = 1 + e^{\alpha}$$

$\Pr\{\text{responding "yes"}\}$ = Probability that the respondent answers "yes" regarding the stated amount

α = Estimated coefficient, i.e., the significant coefficient among the independent variables (explanatory variables) such as gender, age, education, income, etc.

Furthermore, to estimate the WTP per person, we applied and analyzed the logistic function, a common probability distribution. The logit model assumed the logistic function as the functional form of the cumulative distribution function (Cameron, 1988; Watanabe and Asano, 2009).

$$F[dV] = \frac{1}{1 + \exp^{-dV}}$$

Based on the estimated results from such a probability model, the WTP per person can be estimated as the median and mean values. The statistical estimation method for the linear logit model uses the Maximum Likelihood Estimation, and the estimated coefficients are valid and consistent estimators. Based on this, the median and mean values of WTP can be derived as follows:

$$WTP \text{ median} = \frac{\alpha}{-\beta}$$

$$WTP \text{ mean} = \frac{1}{-\beta} \ln(1 + e^{\alpha})^{-1}$$

IV. Results

A. Sample

This survey was conducted to assess the economic value of the entrance fee for the JIWEF. Pre-survey results yielded initial proposed amounts of \$10, \$20, \$30, and \$40. The survey targeted a total of 300 participants, with 118 respondents from offline surveys and 182 from online surveys. The survey method primarily followed individual interviews according to NOAA Panel guidelines, with simultaneous online and offline data collection. As a result, 263 valid responses out of 300 collected surveys were utilized for analysis. General characteristics and basic statistical analysis of the survey participants were conducted using SPSS 24, while STATA 14 was employed for statistical analysis to estimate the economic value of the entrance fee for the JIWEF.

The gender distribution of respondents who participated in the Jeju International Classical Music Festival showed that 136 were male (51.7%), and 127 were female (48.3%), indicating a slightly higher male response rate.

Looking at the age distribution of respondents, it was observed that there were 83 respondents in their 20s (31.6%), 42 in their 30s (16.0%), 75 in

their 40s (28.5%), 48 in their 50s (18.3%), 13 in their 60s (4.9%), and 2 in their 70s (0.8%). The most prevalent age group was the 20s, followed by the 40s. The high representation of respondents in their 20s may be attributed to experiences such as attending performances as part of school evaluations and participating as volunteers.

B. WTP Estimation

The WTP for the entrance fee of JIWEF based on the initial proposed amount, twice the initial proposed amount, and half the initial proposed amount is presented in Table 1.

WTP estimation was conducted twice, distinguishing between estimation with and without covariates.

In the estimation without covariates, the WTP was confirmed to be a constant coefficient of \$23.631 (see Table 2).

To estimate a model including covariates, the analysis was employed, wherein the WTP for the specified amount served as the dependent variable. Canonical demographic attributes such as gender (GEN), age (AGE), educational attainment (EDU), income (INC), alongside visitor behavioral determinants encompassing visit frequency (FRE), duration of visit

Table 1. WTP according to the suggested amount

Initial offer amount	WTP		Double the initial offer amount	WTP		0.5x the initial offer amount	WTP	
	YES(%)	NO(%)		YES(%)	NO(%)		YES(%)	NO(%)
\$10	39(61.9)	24(38.1)	\$20	21(53.8)	18(46.2)	\$5	13(54.2)	11(45.8)
\$20	35(47.3)	39(52.7)	\$40	16(45.7)	19(54.3)	\$10	15(38.5)	24(61.5)
\$30	31(48.4)	33(51.6)	\$60	6(19.4)	25(80.6)	\$15	19(57.6)	14(42.4)
\$40	12(19.4)	50(80.6)	\$80	3(25)	9(75)	\$20	29(58)	21(42)
total	117(44.5)	146(55.5)	total	46(39.3)	71(60.7)	total	76(52.1)	70(47.9)

Table 2. The estimation results of a model excluding covariates

	Coeff.	Std. Err.	$p > z $	[95% Confidence Interval]	
Beta _cons	23.631	1522.688	0.000	20.646	26.615
Number of obs = 263					
Log likelihood = -362.920					

Table 3. The estimation results of a model including covariates

Variables	Coefficient	Std. Err.	p-value	Wald Chi ²	Log likelihood
GEN	4012.376	3054.036	0.189		
AGE	118.8887	142.4758	0.404		
EDU	2614.813	2124.333	0.218		
INC	379.5768	1330.954	0.775		
FRE	-90.22835	220.2953	0.682		
TIM	3100.984	1622.858	0.056		
SAT	-426.0543	2992.682	0.887		
ENJ	-2718.411	4350.768	0.532	36.66	-342.98
REV	1401.228	4186.462	0.738		
WOM	7603.857	3639.958	0.037*		
LIS	5482.327	7255.438	0.45		
LEI	2244.946	8223.095	0.785		
STU	35954.68	15524.95	0.021*		
REL	8520.808	7952.406	0.284		
REC	-5099.056	9593.958	0.595		
Constant	-32021.67	14925.98	0.032		
WTP: 23.632					

* p < 0.05

(TIM), satisfaction (SAT), hedonic enjoyment (ENJ), repeat visitation intent (REV), word-of-mouth intent (WOM), performance attendance (LIS), leisure pursuit (LEI), educational motivation (STU), occupational relevance (REL), and interpersonal influence (REC) were posited as independent variables, or covariates, for the analytical framework.

Results of the analysis disclosed that variables pertaining to visitor behaviors, specifically the intention to recommend and educational motivation, exerted statistically significant influences on the WTP. The positive coefficient associated with the intention to recommend suggests that an elevated intent to advocate the event corresponds to an augmented WTP for the admission fee. This underscores the promotional efficacy of leveraging intention to recommend within the context of the JIWEF. Similarly, the positive coefficient linked to educational motivation signifies that a heightened inclination towards participatory engagement for educational purposes corresponds to an increased WTP. It is postulated that the implementation of

Table 4. Median and mean values of per capita WTP

Median of WTP per 1 visitor	Average of WTP per 1 visitor
\$23.497	\$23.688

diverse programs such as music seminars and educational initiatives during the festival duration would yield efficacious outcomes. Moreover, the WTP including covariates was determined to be approximately \$23.632 (see Table 3).

Applying the logistic function examined earlier and analyzing the estimated results of the probability model, the WTP per capita can be estimated as shown in Table 4, with a median value of \$23.497 and a mean value of \$23.688.

C. Estimation of Economic Value

This study estimated the economic value of usage, hence it aims to expand its scope to local festivals in order to compare cases where the means of payment are entrance fees.

V. Conclusions

Today, cultural and arts festivals are expanding their function beyond local brand development to serve as national brands. However, due to their non-rivalrous and non-excludable characteristics as public goods, economic valuation has not been explicitly conducted thus far. The economic value of public goods is divided into use value and non-use value, and measuring the total value, which includes non-use value that is difficult to monetize, poses significant challenges. Therefore, in this study, a quantitative inquiry was undertaken employing the widely adopted Double-Bounded Dichotomous Choice Contingent Valuation Method (DB-DC CVM), a method well-established for its application in the comprehensive assessment of the economic worth of non-market goods. The study specifically sought to measure the economic value of the local international music festival, a cultural and arts festival centered around musical performances, by leveraging the DB-DC CVM. The analytical approach involved the elucidation of general attributes and attendance patterns of respondents who had experienced this Festival. Subsequently, variables deemed predictive of influencing the WTP for admission fees were identified and incorporated as explanatory variables within the analytical framework.

The results of this study are summarized as follows. First, to discern the WTP for the admission fee of the JIWEF, a logistic regression model was employed. The outcomes indicated a positive association between the intention to recommend and the WTP for the admission fee, with a corollary decrease in WTP corresponding to a diminished intention to recommend. Similarly, a heightened inclination toward participatory engagement for educational purposes was found to positively impact the WTP for the admission fee, while a lower intention for educational purposes correlated with a reduced WTP. Statistical scrutiny validated the significance of these observations, elucidating that the coefficients of the explanatory variables, intention to recommend and

intention for educational purposes, bore positive signs. Secondly, the computed economic valuation of the JIWEF unveiled an average WTP per capita of \$23,688. Substantiated by this metric, the economic worth of the festival's admission fee was assessed. In the absence of precise attendance statistics, estimates derived from the "Evaluation Research Report of the Jeju International Wind Ensemble Festival," an annual publication by the organizing committee, were relied upon. Factoring in the ramifications of the COVID-19 pandemic, the average estimated number of attendees over the three pre-pandemic years (2017: 45,000, 2018: 50,000, 2019: 43,565) was computed as 46,188. To metric the economic worth of the admission fee, this average total attendance figure was multiplied by the WTP per capita. Consequently, the derived estimate for the economic value of the Jeju International Music Festival's admission fee amounted to \$1,094,101.344. Future investigations may extend the analysis by calculating the per capita spending at the festival, offering insights into the accrued economic benefits.

The academic and practical implications of this study are as follows. Firstly, the significance lies in the estimation of the economic value of local cultural and arts festivals, a domain that has been relatively underexplored in existing research. Prior studies predominantly focused on estimating the non-economic value of regional festivals, with a scarcity of research dedicated to estimating economic value. This study, therefore, serves as a starting point, anticipating further research endeavors in the estimation of economic values for regional festivals. Second, from an academic perspective, prior research on local cultural and arts festivals has been conducted from various angles. Economic aspects have been explored, including analyses of the socio-economic impact, economic ripple effects, and marketing strategies of such cultural and arts festivals. However, the economic valuation attempted in this study represents a pioneering effort and adds significance to the existing body of knowledge. Third, the study contributes to the understanding that actual festival admission revenue is contributing to the financial

self-sufficiency of local governments. The economic valuation of admission fees for local cultural and arts festivals is expected to provide foundational data for formulating policies that validate the feasibility and legitimacy of introducing admission fees and further establishing economically sustainable festival practices. Finally, the statistically significant relationship between the intention to recommend and the willingness to pay implies that individuals who frequently recommend the festival are more likely to express a higher willingness to pay. This has substantial implications for promotional strategies, suggesting the incorporation of various word-of-mouth-based promotional tactics in festival promotion and visitor attraction efforts.

The limitations of this study are as follows. Firstly, although empirical analysis was conducted through attendees' WTP for the admission fee of the Jeju International Wind Ensemble Festival, generalizing the results to all cultural and arts festivals may be constrained. The survey design involved setting up hypothetical scenarios and applying the DB-DC CVM. During this process, it is postulated that the DB-DC CVM may induce hypothetical bias due to the overvaluation of willingness to pay, leading to potential distortion of the true value (Halvorsen and Sørensen, 1998). Secondly, the study was confined to surveying attendees who had experienced a specific regional cultural and arts festival, introducing potential issues of representativeness. While the use of convenience sampling facilitates swift survey results and ease of representation, the limitation arises in the difficulty of generalizing findings. Finally, the WTP examined in this study is a statistically derived estimate. The DB-DC CVM entails various biases and is heavily influenced by the researcher's design. Therefore, adhering to the guidelines of the NOAA panel in terms of the rigor and conservatism of pre-surveys and surveys introduces a limitation, as results may vary depending on the stringency of the approach.

Nevertheless, despite these constraints, it is anticipated that the results of this study will serve as a steppingstone for future contributions to the development of regional

cultural and arts festivals.

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