

Economic Effects of European Capital of Culture Maribor 2012 – Ex-Post Verification Study

Andrej Srakar

Department of Economic Theory, Faculty of Economics, University of
Ljubljana

andrej_srakar@t-2.net

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The estimation of economic effects of cultural events is a topic that stirred a lot of debates in cultural economics. Economic impact studies, measuring the short-run spending impact are the tool still used the most, despite being subject to fierce critiques (e.g. Seaman 1987). The answer that is most commonly provided for estimation of economic effects of cultural events in cultural economics has been contingent valuation. To our opinion, the answer to the methodological dilemma is very simple, while not frequently discussed in cultural economics. Instead of performing economic impact studies, which are evidently misplaced and bring controversial results, and contingent valuation studies, which answer the inappropriate questions and suffer from numerous critiques of their own, one can perform ex-post econometric verification to get much more credible numbers about economic effects of a cultural event. In the article we therefore use as an example the project European Capital of Culture (ECoC) Maribor 2012 and perform all three types of methods to estimate the economic effects and »value« of the event. In the first part of the article we present results of economic impact study, deriving from the survey about spending among visitors to ECoC in Maribor and the multipliers calculated on the basis of input-output tables of Slovenia for 2009. In the second part we present results of ex-post econometric verification, to study the effects of ECoC in Maribor on revenues of local firms, new employment, average monthly wages of firms in the area, tourism visits and visitors to cultural venues. The results show that there exist significant differences between results from impact studies and ex-post verification analysis. Finally, we also performed contingent valuation following the approach in Hadker, Sharma, David & Muraleedharan 1997; Verbič & Slabe Erker 2005; and Srakar 2010. We conclude by reflection of the condition of the studies of economic effects of cultural events in cultural economics.

1. Introduction and short literature review

The so-called economic impact studies, which have been (and still are) the most common method for assessing the economic impact and value of cultural events over the past three and a half decades since the pioneering study of Cwi and Lyall (1977), have raised a lot of talk, in both positive and negative sense. The economic impact studies arose and flourished especially in nineteen-seventies when the U.S. has struggled with tackling the effects of stagflation by using a so-called “monetary experiment” (see Goodfriend & King 1997), therefore, the usage

of highly restrictive macroeconomic policies. This meant that almost all government expenditures, which included culture, were subject to severe cuts. In order that funds for culture would not be reduced drastically, people in the cultural field resorted to economic arguments and business jargon that evaluated culture mostly through return on investment. The economic impact studies were convenient tool that has served this purpose: to show that culture is an important economic factor and therefore more than worth of public (or private) investments.

In a positive sense, such studies have been primarily interested in "tangible" economic indicators (GDP, employment and tax revenue) bringing greater awareness of the economic importance of culture, therefore, the potential of the cultural events – what is their contribution to an increase in visitor spending, new jobs and revenues of the firms in the environment where the event takes place, and the prosperity of a city, region and country. In a negative sense, the authors (in particular, Seaman 1987; 2003; 2006; 2012) point to a number of problems that these studies bear almost inevitably: exaggerations in attributing all spending only to the impact of a cultural event, inappropriate use of multiplier analysis, ignoring of other values which are borne by cultural events (in particular non-use values and cultural values), and ignoring the opportunity costs. In recent years, it has become almost a hobby of cultural economists to “make an own critique” of the impact studies, which as stated by Bruno S. Frey (Frey 2005) are performed by the “arts people”, unlike the willingness-to-pay-studies (mostly of contingent valuation provenience) which are mostly made by the “arts economists” according to Frey.

However, there is no consensus in cultural economics on the suitability of the method of impact studies. Many authors are willing to completely give up the measurement of "tangible" economic categories (e.g. Frey 2005, 2012), but some nevertheless still believe that economic impact studies can yield meaningful numbers (Seaman 2003; 2012; Devesa et al. 2011; Saayman & Saayman 2006). Above all, the last two decades have brought an increasing attention being paid to the contingent valuation method as an alternative to impact studies. As stated by Bruce Seaman (2006), perhaps so far the only author who has been thinking about the possibilities and consequences of integration of both methods, it is not clear as to which part of the “value” of culture is estimated by any of the two studies (both for example estimate the use value component of the value of culture, see e.g. Srakar 2010). Nevertheless, so far it has been accepted that the most credible estimation would be some combination of the two methods as a step towards assessing the value of a cultural event.

However, also contingent valuation itself suffers from number of criticisms (the most well know is perhaps the study by Diamond and Hausman (1994)), which are particularly addressed towards its hypothetical nature. There are also a number of other biases (as summarized by e.g. Venkatachalam 2004) that, if ignored, almost completely undermine the results obtained with this methodology. But what is perhaps even more essential: these studies estimate only the microeconomic aspect of an event, i.e. preferences of individuals, and are

therefore not able to provide answers to the very simple questions that economists (in classical sense) are usually most interested: what were the economic effects of a cultural event on the new employment, revenues of the firms, value added, and taxes raised; whether these effects were greater than the input in the project; and what are the factors that have the greatest impact on the economic success of a cultural event.

In order to resolve this kind of methodological dilemma that on our opinion cultural economics is currently not able to resolve, we will use a third method, which relatively simply eliminates all the shortcomings of the two methods. The method is commonly named as ex-post econometric verification in sports economics, where it has been frequently used since the article by Baade and Dye (1988), but for some reason has not found a way and usage in cultural economics (which has been already pointed out by some authors, see e.g. Seaman 2012). In this method, the verification of economic effects (proclaimed by the economic impact studies) is made after the event takes place. The method builds on general statistical data (in our case, we used data from the Statistical Office of the Republic of Slovenia (SORS) and the Agency for Public Legal Records and Related Services (AJPES)) for a variety of Slovenian municipalities - both those who were involved in the project (the six partner cities: Maribor, Murska Sobota, Novo mesto, Ptuj, Slovenj Gradec and Velenje), as well as those (among the 213 existing ones) who did not participate in it. Based on the data collected we can use a simple "treatment and response" analysis, where the six municipalities belong to the treatment group and all the rest to the control group that did not receive treatment. With a relatively simple panel data analysis methods (difference-in-differences, dynamic panel models and generalized method of moments) one can thus check on the measurable effects of the treatment on different economic factors (incomes of the firms, new employment, average monthly wages, the new tourist arrivals and overnight stays and visits to cultural events) in all six cities and in each individual partner city.

In the following, we will therefore present the results of all three main components of our economic analysis. In the second section we will present some existing economic indicators on the project European Capital of Culture (ECoC) Maribor 2012 using data from Public Institute Maribor 2012. In the third section we will present the results of questionnaire about the structure of visitors of ECoC Maribor 2012, which was conducted during the second half of year 2012, and the results of the multiplier analysis (based on a own calculation of the production, value added and employment multipliers for Slovenian economy using the most recent existing data). We will also present a brief regression analysis of factors affecting the size of the spending of visitors and discount the results of the project, taking into account basic criticisms addressed to this method, therefore taking into account only the spending that has occurred solely as a result of the event itself.

In the fourth section we present the results of ex-post econometric verification, through which we were able to assess the increase in visits and overnight stays in 2012 *only as a result of the event ECoC 2012*, increase in visitors to cultural events (using the data of visits to public

theatres in Slovenia), the effects on the average monthly salaries in organizations in partner cities of the ECoC 2012, and finally the effects on employment in the partner municipalities and the incomes and profits of companies in the partner cities.

In the fifth section, we present the results of contingent valuation study, which helped us to evaluate the annual value of the project in the eyes of the inhabitants of Maribor and partner cities and Slovenian residents in general. We will show the results that have been evaluated as an average "stated" as well as the "true" willingness to pay. We were able to address and take into account one of the main reasons for bias in contingent valuation studies using dichotomous choice questions, namely the effect of anchoring. We were also able to estimate the aggregated value of the project for the people of Slovenia in the following three years (2013-2015).

In the final part, we will present a brief reflection on the results and summarize the main findings and conclusions based on the results of the methodological part of the article.

2. Some brief descriptive data on the project ECoC Maribor 2012

The project European Capital of Culture is a pan-EU project, which designates two or three cities each year to host a whole year festival of cultural events. The project takes place since 1985 and was initiated by Melina Mercouri and Jacques Lang. In 2012 the title was given to Portuguese city of Guimaraes and for the first time to Slovenian city, in this case Maribor. As Maribor is a small city compared to other cities on European level, the city chose for its candidature to make a partnership to city municipalities in the whole Eastern Slovenian region which finally made the project take place in six Slovenian cities: Maribor, Murska Sobota, Novo mesto, Ptuj, Slovenj Gradec and Velenje.

The ECoC Maribor 2012 involved 319 producers of all genres, and over 5900 events took place throughout the year. The sum of visitors to the events, visitors to an internet application LifeTouch, spectators and visitors of a variety of programs in the spatial interventions was estimated to be more than 4.45 million. Public institute Maribor 2012 also carried out extensive activities in the field of marketing and communication, and promoted the development of cultural tourism and connection with all tourist organizations in the region. A great increase in tourist visits in Maribor and its partner towns has been reported by local tourist organisation, yet their results differ and are much larger than the official statistics of the SORS.

ECoC 2012 project had 2,199,894.00 EUR of revenue in year 2010, with more than 99% of funds coming from the public funds of the Ministry of Culture and the Municipality of Maribor. In 2011, the project received 7,011,595.00 EUR of revenues, where 86.6% came from public funds (from the same two sources), an additional 5.7% from partner cities, 7.3% from the EU funds of the Melina Mercouri prize, while private investments (donations and

sponsorships) raised only slightly above 0.1 percent of assets, and even less was raised by the earned income.

In 2012, as expected, the budget was much higher than in previous years. The total budget in 2012 amounted to 19,188,153.00 EUR, of which 16,542,908.00 EUR (86.2%) was contributed by the Ministry of Education, Science, Culture and Sport of the Republic of Slovenia and the Municipality of Maribor. Partner cities contributed 1,275,321.00 EUR (6.6%), European funds from Melina Mercouri prize was somewhat less both in nominal (326,000.00 EUR) and relative (1.7%) terms. Funds from private investment in nominal terms were increased (656,750.00 EUR), as well as facing an increase in the relative share (3.4%), which was still negligible as compared to funds from public sources. Earned income from the sales amounted to 253,600.00 EUR or 1.3%.

In 2012, according to the Maribor Tourist Board, the city of Maribor recorded 355,000 overnight stays, which is 20% more than in the same period in 2011 (the largest increase of nights was recorded in November, amounting to 92% more than in the same month of 2011). Immediately it should be noted that the data hugely differ for data of the Statistical Office of the Republic of Slovenia: the latter also registered a significant increase, but the number of overnight stays in 2012 as measured by SORS methodology is only 266,329 overnight stays.

According to the measured data of the Maribor Tourist Board, in the project there were 81% of foreign overnight visitors and 19% domestic. The upward trend in the last few months of 2012 was well above the Slovenian average. In Maribor there is a significant increase in the number of daily visitors. In 2012, the number compared to 2011 increased by 61%, only in June 2012 by 92%. The foreign visitors were mostly Austrians, which in October amounted to 55% of all visitors, followed by 15% Slovenians, 5% Germans, 5% Croats, 2.5% Russians, the remaining being mostly Italians, French and Americans. Encouraging results were also recorded in the partner cities.

3. The results of the economic impact study

At the end of 2012, at the venues of ECoC 2012, a short online survey was held about the structure of spending of the visitors of the events during the ECoC Maribor 2012. The analysis included several groups of visitors and was taken up on three groups of places: on the scenes of the events; at the Info Points ECoC 2012; and via email contact lists of visitors who left their data at the Info Points.

The questionnaire was made up of several parts. He had three different forms for each of the separate groups of visitors: the Maribor residents, non-Maribor Slovenian visitors; and foreign visitors. Firstly we asked visitors for their basic socio-demographic data (age, sex, place of residence). Respondents who were not from Maribor, were asked how they came to the place of ECoC and whether they visited the ECoC venues primarily due to the ECoC or because of

something else. We asked them also to reveal the purpose of visiting the ECoC event in more detail. Then we asked them how many events within the ECoC were (or will be) visited in 2012, and how many nights they have spent in the cities ECoC. At the end, we presented a series of questions on the structure of spending of the visitors, being solely the consequence of the visit of ECoC: how much were spent on accommodation, restaurants, entertainment, visits to cultural events, shopping, transportation, and any other expenses.

The field survey involved 217 respondents. Of the 217 responses received the 113 responses were from Maribor, 76 of non-Maribor Slovenian respondents and 28 foreign visitors. For our discussion the key responses were of course the non-Maribor Slovenian and foreign visitors, which represent insertions of new money in the economy. We eliminated the answers who have made it clear that their visit to Maribor and partner cities was not primary due to the event, but to other commitments in these area (business visits, spending their vacation, visiting friends, study and academic obligations, etc.). Thus, we addressed the common mistake of inclusion of "time switchers and casuals" (Snowball & Antrobus 2006), as such visitors would most likely spend the money in the area in any case. After also excluding incomplete and mostly non-credible responses (e.g. respondents who declared that they visited more than 300 events while spending less than \$ 50), we were left with the sample of 16 foreigners, 24 non-Maribor Slovenians and 103 Maribor residents.

Short descriptive statistics of the most important variables in the total sample and each group is included in the table below.

Variable	pooled sample		only Maribor inh		only Non-Maribor inh		only foreigners	
	Mean	Median	Mean	Median	Mean	Median	Mean	Median
age	40,15	38,00	38,11	34,00	42,46	41,50	49,81	48,00
numvisitevents	15,67	10,00	18,79	12,00	9,67	3,00	4,63	3,50
numnights	0,64	0,00	0,38	0,00	1,04	0,00	1,69	1,00
spend_overnights	23,81	0,00	8,88	0,00	32,92	0,00	106,25	70,00
spend_restaurants	54,13	15,00	51,07	0,00	52,08	10,00	76,88	50,00
spend_entertain	67,30	20,00	85,78	50,00	23,50	0,00	14,06	0,00
spend_culture	56,14	20,00	66,83	30,00	32,29	0,00	23,13	20,00
spend_shopping	41,75	0,00	49,95	0,00	20,00	0,00	21,56	0,00
spend_transport	33,36	0,00	33,69	0,00	43,33	0,00	16,25	7,50
spend_other	1,12	0,00	0,00	0,00	6,67	0,00	0,00	0,00
spend_joint	277,60	150,00	296,19	175,00	210,79	110,00	258,13	162,50

**Table 1: Summary statistics for the questionnaire on spending visitors to the ECOC 2012
(source: own calculations)**

In the pooled sample, the mean age of respondents was almost exactly 40 years, the median not deviating significantly from the mean value. On average, each of the respondents in the pooled sample visited 16 events, but at least 50% attended 10 or fewer events (median value). On average, in the pooled sample each spent about 0.66 nights in the cities of ECoC at the time of the event, i.e. much less than one night. The average total consumption of respondents in the sample was approximately 278 EUR, but 50% of respondents in the pooled sample spent 150 EUR or less as a consequence of the event. In the pooled sample respondents on

average spent the most on entertainment (67 EUR), paying for cultural events (56 EUR), restaurants (54 EUR) and acquisitions (42 EUR). Slightly less was spent on transport (33 EUR) and overnight (24 EUR). Half of the respondents spent at least 20 EUR in 2012 for entertainment and cultural events within the framework of ECoC 2012 and 15 EUR on restaurants, all of the above occurring as a consequence of attendance at the ECoC 2012.

As expected we can see significant differences between the respondents in different groups. Maribor residents were the youngest by age, are expected to visit more events in 2012, each on average nearly 19 events (the median being 12). As expected, they also spent far less paid overnights during ECoC. Their average consumption as a result of the ECoC event was largest in the field of entertainment (86 EUR), visiting cultural events (67 EUR), visits to restaurants (51 EUR), shopping (50 EUR) and services (34 EUR). Much less were spent for the overnights (each an average of 9 EUR).

The second group were the non-Maribor (Slovenian) visitors. On average, respondents in this group were slightly older than the total sample, visited the events far less than the total sample – only about 10 events (50% visited only 3 events or even less). At the time of ECoC they spent an average of one paid night as a result of visiting the ECoC. On average they spent the most for restaurants (52 EUR), transport (43 EUR), accommodation (33 EUR), visiting cultural events (32 EUR), entertainment (24 EUR) and purchases (20 EUR). Their average total spending was the lowest among all the groups and was approximately 211 EUR per respondent.

The last group were foreign visitors. On average, they were much older than the other two groups, possibly due to small sample size (only 16 respondents). On average each respondent spent in the area of Maribor a little less than 2 nights and visited a little less than 5 events. Their consumption was (as expected) by far the largest for overnights (106 EUR) and restaurants (77 EUR). Much less was spent on visiting cultural events (23 EUR), shopping (22 EUR), transport (16 EUR) and entertainment (14 EUR). On average, every foreign visitor has spent at the time of the event ECoC 2012 approximately 258 EUR.

A short regression analysis was done to estimate which variables are statistically significant factors that explain the size of the spending of each visitor. We used the OLS and Tobit models, the latter due to the spending being limited from below by zero. We estimated the total spending of each of the respondents conditional on belonging to one of the three groups of respondents (foreigners, non-Maribor, Maribor), the place of interview (we included two binary variables, the first taking the value of 1 for the visitors of major events - Garry Kasparov, Chick Corea, Jack Lang, and zero for visitors of all other events; and the second taking the value of 1 for the answers that we received by email and zero for all other answers), the age of visitors (in line with the theory we included as an explanatory factor also the square of age), and the number of popular events and the number of nights spent in the partner cities of ECoC.

Models were estimated for the three sample specifications: the full sample, data only for visitors from Maribor, and finally the data for non-Maribor and foreign visitors. For each specification, we estimated both OLS and Tobit regression models, where we report in each case only the results using robust standard errors. The results are reported below.

Sample: all visitors	OLS			Tobit		
	Coefficient	t ratio		Coefficient	z	
Const	-225,209	-1,4338		-393,111	-1,9016	*
intplace_dum_large	75,7953	1,2542		66,6136	0,95	
intplace_dum_mail	58,2987	0,8695		99,592	1,4247	
age	18,8818	2,4552	**	25,7681	2,4524	**
numvisitevents	6,10307	2,7745	***	6,67664	2,9538	***
numnights	46,3362	2,2438	**	48,33	2,3197	**
sq_age	-0,223683	-2,6885	***	-0,30842	-2,6312	***
Mean dependent var	277,6014			Chi-square	38,18544	
S.D. dependent var	362,4405			p-value	1,03E-06	
Sum squared resid	13746064			Log-Likelihood	-904,3321	
S.E. of regression	317,9214			Akaike	1824,664	
R-squared	0,263086			Schwartz	1848,367	
Adjusted R-squared	0,230575			Hannan-Quinn	1834,296	
F(6, 136)	5,61E+00					
P-value(F)	0,000031					
Log-likelihood	-1023,258					
Akaike criterion	2060,515					
Schwarz criterion	2081,255					
Hannan-Quinn	2068,943					

**Table 2: Results of OLS and Tobit regression models for the pooled sample
(source: own calculations)**

From the results of the regression models for the first, pooled sample, we see that all variables have the expected signs according to economic theory. The values of log-likelihood and the three criteria of information indicate that Tobit was indeed the better explanatory model.

Statistically significant explanatory factors of the total spending in both models were the age of the respondents and the number of visited events and overnights. The first factor tells us that we can expect a slightly higher value of the total spending for respondents with a higher age. Each additional year of age at the young age will give total spending higher by about 25 EUR (the result of Tobit model). Because of the statistically significant and negative effect of age squared, this effect will decline with higher ages, the oldest on average being willing to contribute slightly less than those of middle-aged.

Statistically significant explanatory factors were also the number of visited events, where each additional event visited gives approximately 6.68 EUR higher total spending; and the number of overnights, which is as expected the factor with highest marginal effect, with each additional overnight having as a consequence (on average) 48 EUR higher total spending of the visitor.

We also made tests of structural break (Chow and CUSUM, in the attachment). As expected there was a significant break in data between Maribor and all non-Maribor visitors. We therefore conducted a further analysis of the model separately for both of these groups of visitors.

Below are the results of the OLS and Tobit models for pooled non-maribor visitors - foreigners and Slovenes.

Sample: foreigners and non-Maribor inh	OLS			Tobit		
	Coefficient	t ratio		Coefficient	z	
Const	-380,544	-1,0276		-517,646	-1,292	
dummy_for	9,02235	0,1584		20,0352	0,3164	
intplace_dum_large	111,321	1,7031	*	126,735	1,5785	
intplace_dum_mail	154,832	1,9805	*	193,055	2,4243	**
age	18,8639	1,181		22,8628	1,3566	
numvisitevents	6,08446	2,4021	**	5,98024	2,3481	**
numnights	69,1822	2,589	**	75,1862	2,9493	***
sq_age	-0,207555	-1,214		-0,251603	-1,4131	
Mean dependent var	229,725			Chi-square	178,5673	
S.D. dependent var	304,5728			p-value	3,91E-35	
Sum squared resid	1231170			Log-Likelihood	-226,8503	
S.E. of regression	196,148			Akaike	471,7006	
R-squared	0,659693			Schwartz	486,9005	
Adjusted R-squared	0,585251			Hannan-Quinn	477,1964	
F(7, 32)	23,84339					
P-value(F)	5,33E-11					
Log-likelihood	-263,4495					
Akaike criterion	542,8989					
Schwarz criterion	556,41					
Hannan-Quinn	547,7841					

Table 3: Results of OLS and Tobit regression models, only foreigners and "non-Maribor" (source: own calculations)

From the above results we first see that once again the most statistically significant factors were the number of visits to events - each additional event visited gives on average the higher spending of almost 6 EUR; and the number of overnights, with every additional night raising

the spending of each visitor by about 75 EUR. Statistically significant factor here is also whether the respondents answered via e-mail (mailing list Info Point ECoC) or at the venue itself. Respondents who were interviewed via email had significantly higher spending than those who responded on the spot by as much as 193 EUR. It is also to be noted that the variable “dummy_tujci” having value 1 for foreigners and 0 for Slovenians is not significant in explaining the spending of the visitors in this sample.

All the models were tested against collinearity, specification problems, normality of residuals, heteroskedasticity and autocorrelation.

Sample: only Maribor	OLS			Tobit		
	Coefficient	t ratio		Coefficient	z	
Const	-346,394	-1,8393	*	-603,848	-2,2982	**
intplace_dum_large	51,3385	0,6834		28,7793	0,3357	
intplace_dum_mail	-87,1338	-1,1209		-71,7168	-0,8807	
age	27,7207	2,7624	***	40,0645	2,7811	***
numvisitevents	5,15309	1,9673	*	5,55897	2,1049	**
numnights	38,4301	1,3472		39,1489	1,3519	
sq_age	-0,320905	-2,9825	***	-0,469309	-2,9073	***
Mean dependent var	296,1942			Chi-square	22,08218	
S.D. dependent var	382,3105			p-value	1,17E-03	
Sum squared resid	12003838			Log-Likelihood	-666,1697	
S.E. of regression	353,6099			Akaike	1348,339	
R-squared	0,19483			Schwartz	1369,417	
Adjusted R-squared	0,144507			Hannan-Quinn	1356,877	
F(7, 32)	23,84339					
P-value(F)	5,33E-11					
Log-likelihood	-746,9501					
Akaike criterion	1507,9					
Schwarz criterion	1526,343					
Hannan-Quinn	1515,37					

Table 4: Results of OLS and Tobit regression models, only Maribor (source: own calculations)

The results in the table above show that in the case of Maribor visitors the number of nights is not anymore a statistically significant predictor of spending. Still, statistically significant predictors remain the number of visited events, where each additional visited event gives on average about 5.56 EUR higher spending. Important explanatory factor in this sample was also age: the older visitors, for each additional year of age spent about 40 EUR more.

Based on the above, we were therefore able to estimate the total direct spending (spending on the purchase of tickets to the events themselves) and indirect spending (spending on restaurants, accommodation, shopping, entertainment, etc.). In order to estimate the total

consumption (i.e. new money in the economy) we need to calculate also the induced effects, i.e. "external" effects that the additional spending has on other sectors of the economy.

In order to calculate this, we need to calculate the production, value-added and employment multipliers on the Slovenian level. Since Slovenia is a relatively small environment, there is no sense in estimating such multipliers on local level, despite the fact that some authors (Seaman 2003; Snowball & Antrobus 2006) clearly point to caution in the use of multipliers and transferring them between regions.

For the calculation we therefore have two possibilities. Such multipliers for culture in 2008 were already calculated by Ivanka Zakotnik of Slovenian Macroeconomic Institute in 2009, where she used the data for 2005 – the origin of the last accessible symmetric input-output table as recorded by Statistical Office of the Republic of Slovenia (SORS).

Alternatively, we can also perform a calculation of multipliers based on the symmetric input-output tables for Slovenia in 2009 as run by the World Input-Output Database (WIOD). Unfortunately for the latter it was not possible to calculate a separate multiplier for the field of culture at present, as the time we had did not allow for the calculation of multipliers on the basis of supply and use tables managed by the SORS. Therefore, we used the aggregate multiplier for “Other community, social and personal services” (“Druge javne, skupne in osebne storitve”). We then calculated the multipliers for production, value added and employment for all 35 sectors on the basis of symmetrical input-output table for 2009. The advantage of using tables from 2009 is mainly in significantly better currency as in the years 2005-2013 many changes on economic level were present in Slovenia and it would be methodologically inadequate for the overall results be justified solely on data based in 2005.

The two tables below therefore firstly show the multipliers calculated by Zakotnik with separate columns for the production (multiplikator proizvodnje) and value added (multiplikator dodane vrednosti). In her article Zakotnik only specified the employment multiplier for the field of culture, being 1.47.

SKD classification	Name of the field or subfield of SKD	production multiplier		multiplier of added value	
		value	Rank	value	Rank
		A	Agriculture, Hunting and Forestry	1,59	9
B	Fishing	1,55	12	1,56	19
CA	Coal and lignite; raw oil and gas; uranium and torium	1,39	24	1,28	27
CB	Mining and Quarrying	1,64	4	1,69	10
DA	Food, Beverages and Tobacco	1,9	2	2,53	1
DB	Textiles and Textile Products	1,59	10	1,84	7
DC	Leather, Leather and Footwear	1,45	19	1,94	4
DD	Wood and Products of Wood and Cork	1,6	6	1,88	5
DE	Pulp, Paper, Paper , Printing and Publishing	1,55	13	1,85	6
DF	Coke, Refined Petroleum and Nuclear Fuel	1,67	3	/	/
DG	Chemicals and Chemical Products	1,32	27	1,44	24
DH	Rubber and Plastics	1,28	29	1,5	23
DI	Other Non-Metallic Mineral	1,48	18	1,61	13
DJ	Basic Metals and Fabricated Metal	1,43	22	1,64	12
DK	Machinery, Nec	1,45	20	1,67	11
DL	Electrical and Optical Equipment	1,38	26	1,58	15
DM	Transport Equipment	1,45	21	2,25	3
DN	Manufacturing, Nec; Recycling	1,52	15	1,77	8
E	Electricity, Gas and Water Supply	1,54	14	1,56	18
F	Construction	2	1	2,41	2
G	Sale, Maintenance and Repair of Motor Vehicles and Motorcycles; Retail Sale of F	1,57	11	1,58	16
H	Hotels and Restaurants	1,59	8	1,57	17
I	Transport and telecommunications	1,62	5	1,73	9
J	Financial Intermediation	1,52	16	1,51	21
K	Real Estate Activities	1,41	23	1,31	25
L	Public Admin and Defence; Compulsory Social Security	1,39	25	1,3	26
M	Education	1,21	30	1,13	29
N	Health and Social Work	1,28	28	1,22	28
O	Other Community, Social and Personal Services	1,6	7	1,61	14
kultura	CULTURE	1,51	17	1,5	22

Table 5: Multipliers of production and value added tables for 2005 (source: I. Zakotnik, in: Kočica & Srakar 2009)

In the table below we present also our own calculations, based on the data for 2009. As said we were mainly interested in the multiplier for the field “Other community, social and personal services” (“Druge javne, skupne and osebne storitve”).

We perform the multiplier calculations following the common formulas derived in e.g. Ten Raa (2005). We won’t repeat the formulas here as they are considered standard knowledge of input-output analysis.

Name of the field according to SKD classification	Production Multiplier		Added Value Multiplier		Employment Multiplier	
	Value	Rank	Value	Rank	Value	Rank
Agriculture, Hunting, Forestry and Fishing	1,55	21	1,54	25	1,34	29
Mining and Quarrying	1,56	19	1,51	26	1,50	22
Food, Beverages and Tobacco	1,86	2	2,34	1	2,25	4
Textiles and Textile Products	1,63	7	2,02	6	1,52	20
Leather, Leather and Footwear	1,52	27	1,89	8	1,49	24
Wood and Products of Wood and Cork	1,62	12	1,85	11	1,53	19
Pulp, Paper, Paper , Printing and Publishing	1,62	9	1,87	9	1,80	11
Coke, Refined Petroleum and Nuclear Fuel	1,58	17	2,20	4	1,49	23
Chemicals and Chemical Products	1,45	29	1,56	24	2,69	2
Rubber and Plastics	1,54	24	1,76	15	1,58	16
Other Non-Metallic Mineral	1,71	4	1,94	7	1,64	13
Basic Metals and Fabricated Metal	1,61	13	1,86	10	1,58	17
Machinery, Nec	1,54	22	1,74	17	1,58	15
Electrical and Optical Equipment	1,51	28	1,77	13	1,63	14
Transport Equipment	1,53	25	2,31	3	2,01	7
Manufacturing, Nec; Recycling	1,62	11	1,76	14	1,57	18
Electricity, Gas and Water Supply	1,60	15	1,62	21	1,77	12
Construction	1,88	1	2,14	5	1,86	10
Sale, Maintenance and Repair of Motor Vehicles and Motorcycles; Retail Sale of F	1,60	16	1,64	20	1,45	27
Wholesale Trade and Commission Trade, Except of Motor Vehicles and Motorcycl	1,60	14	1,60	22	1,48	25
Retail Trade, Except of Motor Vehicles and Motorcycles; Repair of Household Go	1,54	23	1,49	28	1,20	32
Hotels and Restaurants	1,62	10	1,60	23	1,29	30
Inland Transport	1,55	20	1,71	18	1,46	26
Water Transport	1,27	34	1,28	31	1,88	8
Air Transport	1,63	8	2,31	2	2,32	3
Other Supporting and Auxiliary Transport Activities; Activities of Travel Agencies	1,65	6	1,75	16	1,86	9
Post and Telecommunications	1,76	3	1,82	12	2,17	5
Financial Intermediation	1,52	26	1,45	29	1,44	28
Real Estate Activities	1,31	31	1,19	33	3,16	1
Renting of M&Eq and Other Business Activities	1,57	18	1,50	27	2,15	6
Public Admin and Defence; Compulsory Social Security	1,41	30	1,30	30	1,22	31
Education	1,28	33	1,18	34	1,11	34
Health and Social Work	1,30	32	1,23	32	1,18	33
Other Community, Social and Personal Services	1,66	5	1,67	19	1,50	21
Private Households with Employed Persons	1,00	35	1,00	35	1,00	35

Table 6: Multipliers of production, value added and employment, the table for the year 2009
(source: own calculations, WIOD)

We can now estimate the total economic effects of the event based on input-output methodology.

First, let's take an average spending number, as was estimated in the beginning of the section. Because unfortunately Institute Maribor 2012, did not provide accurate data about visitors to events by group (Maribor, Maribor-not, foreigners), this can only be done by taking into account the estimates of the mean and median for the pooled sample. These values total (see Table 1) 277.60 EUR (average value) and 150.00 EUR (median).

According to the Public Institute Maribor 2012 the number of visitors to all live performances was 1,991,575. To estimate the number of events we can also take mean and median number

of events that have been visited on average by each of the visitors, the mean being 15.67, while the median 10 (see Table 1).

The total direct and indirect impact of the ECOC 2012 project on the economy was thus obtained by multiplying the average consumption by the number of visitors, divided by the average number of events. Two values can be obtained by using the mean or the median estimates. The first estimated value is therefore 35,281,507.34 EUR, while the second is 29,873,625.00 EUR. With considerable reliability can thus estimate that the total direct and indirect impact of the project lies somewhere between 29.8 to 35.3 million euros.

To calculate the final effect on output, value added and employment we can use the estimates of the multipliers. Using multipliers of Ivanka Zakotnik the effect on the production can be estimated to be around 45,109,173.75 EUR and 53,275,076.08 EUR. By using estimates of multipliers for 2009, the estimated value is between 49,590,217.50 EUR and 58,567,302.18 EUR. It can therefore be argued that the aggregated effect (new money in the economy) of spending of the visitors of the project ECoC2012 was between 45 and 59 million euros.

To get an estimate of the effect on the added value we must use the relationships that we have gained in the process of calculating the multipliers. It turns out that every one million EUR additional spending in the sector “Other community, social and personal services” generates approximately 484,000 EUR of added value. Our total value of direct and indirect effects, which is located between 29,873,625.00 EUR and 35,281,507.34 EUR must therefore first be multiplied by a coefficient of 0.484 to obtain the direct and indirect effects on the value added which amounts to between 14,458,834.50 EUR and 17,076,249.55 EUR. Using the previously calculated multipliers, which amounted to 1.50 (value for 2005 by Zakotnik) and 1.67 (value for 2009, our calculations), we obtain the aggregated effect of the ECoC 2012 project on added value of between 21,688,251.75 EUR and 25,614,374.33 EUR (multipliers for 2005) or between 24,146,253.62 EUR and 28,517,336.75 EUR (multipliers for 2009). It can therefore be argued that the overall impact of the ECoC 2012 project on added value lies between 21 and 29 million Euros.

In a similar way we can calculate the estimate of the total impact on employment. From the data used to calculate the multipliers, we can see that each additional one million euros of spending on culture generates approximately 12 new jobs. If we multiply the value of our total direct and indirect effects (which lies between 29,873,625.00 EUR and 35,281,507.34 EUR), with this value, we can say that the additional direct and indirect spending generated between 354 and 418 new jobs. When using both values of the multipliers (2005: 1.47; 2009: 1.5), we can estimate the total number of new jobs that the project is predicted to be generating *based only on spending of the visitors* as lying between 521 and 615 (multiplier for 2005) or between 531 and 627 (multiplier for 2009).

As mentioned this of course applies only to the effects of visitor spending, thus neglecting the effects of directly spent funds due to budget of the project. If we take into account also these effects, i.e. the total project budget for the years 2010, 2011 and 2012, which amounted to 28,398,472 EUR, the same procedure can be used to calculate the effects of the latter:

Impact on production - between 42,881,692.72 EUR (multipliers 2005) and 47,141,463.52 EUR (multipliers 2009)

Impact on added value - between 20,617,290.67 EUR (2005) and 22,953,916.95 EUR (2009)

Impact on employment - between 495 (2005) and 505 (2009) new jobs

The aggregate cumulative effect of the two inputs is therefore:

Impact on production - between 105,708,765.70 EUR and 87,990,866.47 EUR

Impact of added value - between 42,305,542.42 EUR and 51,471,253.70 EUR

Impact on employment - between 1,007 and 1,132 new jobs

To conclude, we can calculate the returns on public investment, which in the case of the ECoC Maribor 2012 amounted to 26,494,744 EUR (taking into account the resources of the Ministry, Municipality of Maribor and the partner cities for the years 2010, 2011 and 2012). Taking into account the above, we can say that the return on public investment was between 3.32 and 3.99, each additional euro of public money invested in the project ECoC 2012 therefore generated nearly 4 EUR of additional new funds in the economy. At the same time, we have to draw attention to the concept of opportunity costs, for better assessment we would also need to know what level of returns would be generated by a comparable investment in another project, so the estimates are not only an indicator of income, but also of the costs (Madden 2001). However, the data in Tables 4 and 5 shows investments in culture in terms of multiplier effects are far more profitable than investment in public services, national defense, education, health and social care. This fact can also be confirmed by most of the empirical findings of previous years for Slovenia (e.g. Ministry of Culture RS 2003; Zakotnik 2008; URSIL 2011).

4. The results of ex-post econometric verification visits

As previously noted, the data generated by impact methodologies are often criticized for their methodological sloppiness, controversial methods of calculation, overblown results, as well as the fact that such effects are mainly predicted ex-ante, while ex-post results are very seldom observed (an exception being the article by Skinner 2006). As stated by Bruce A. Seaman in his paper for the conference in Maribor 2012 (Seaman, 2012): "There is almost an explosion of attempts to identify "traces" of events on local employment and tax revenues after the event itself. Similar task could be made in Maribor at the end of the year to determine whether the econometric equations, which show any idiosyncratic effect of the ECoC 2012 project, disclosing any economically and statistically significant effects of the project. Studies in the economics of sports almost never find such effects!"

In the following analysis, we will therefore estimate also the economic impact after the end of the event itself on the basis of available statistical data and econometric methodology. We will estimate the effects on income (or earnings and profits) of business entities, employment, the average monthly wage, the number of tourist visits and overnight stays, and the number of visitors to cultural events. We will use the methods of panel data analysis, in particular the common method of difference-in-differences (see e.g. Angrist & Pischke 2008).

Such analysis is most commonly used to determine the effect of "treatment", i.e. a change in one observation unit or group of units, which was not at all the others. In our analysis, we therefore assume that there is a "ECoC effect", that is, the effect which was present only in the six partner cities in 2012, and nowhere else "in space and time". In all of the following analyses, we will try to trace this effect by means of difference in difference analysis.

For the purpose of such analysis we will use the most common econometric model specification:

$$y_{it} = \beta_0 + \beta_1 X_i + \beta_2 T_t + \beta_3 X_i T_t + \beta_4 Z + \beta_5 t + \varepsilon_{it} \quad (1)$$

wherein:

y_{it} is dependent variable, in this case, the value of revenue, number of employees in a particular place, the average monthly salary, number of visits or overnight stays, the number of visitors to cultural events:

X_i dummy variable that takes the value 1 in six cities which bore the project and 0 for those who were not directly included in the project;

T_t time dummy variable that takes the value 1 in 2012 (the year of "treatment") and the value 0 in all other years;

Z the matrix of control variables;

t is the (linear) time trend;

ε_{it} a stochastic error term.

As stated by the theory, our "treatment" effect equals to the value of the coefficient β_3 where the model (1) is estimated by the usual method of least squares (OLS), therefore because we use panel data it is a POLS (Pooled Ordinary Least Squares) model.

The impact on corporate revenues

For purposes of estimation of the effect on revenues of the firms we used the data of the Agency for Public Transport Records and Related Services (AJ PES) on the receipts and expenses of business entities (corporations, individuals and entrepreneurs, other entities) for the years 2010-2012. They collected the data for 211 Slovenian municipalities. The actual

data on incomes which are provided by SORS will be available in June 2013 and will taken into account in the final version of the paper.

We assume, therefore, that the receipts and revenues significantly positively correlate with each other and present an evaluation of the effects of the ECOC 2012 project on the receipts of business entities and the difference between receipts and expenses (hereinafter: the profits).

The table below shows the first results of the regression¹ on the combined data of all 211 municipalities to assess the effects of the ECOC project to different categories of data: the receipts of all business entities, the profits of all business entities, corporate receipts, and the corporate profits.

POLs - incomes and profits, pooled cities	incomes total		profits total		incomes companies		profits companies					
	Coefficient	t ratio	Coefficient	t	Coefficient	t	Coefficient	t				
const	1,62E+09	1,542	349859	1,2886	9,08E+08	1,7408	*	178478	0,6097			
epk_dummy	3,89E+09	1,8507	*	-233397	-0,1826	3,36E+09	2,295	**	17970,3	0,014		
time_dummy	4,11E+07	0,7957		-326807	-1,0508	-7,08E+07	-1,2228		-168846	-0,5244		
epk_time_dummy	-3,38E+08	-2,1258	**	7,49E+06	2,5546	**	-3,09E+08	-1,8046	*	6,09E+06	2,154	**
Mean dependent var	1,74E+09			305563			9,78E+08			180714,5		
S.D. dependent var	1,51E+10			5499510			7,15E+09			5473530		
Sum squared resid	1,43E+23			1,87E+16			3,19E+22			1,86E+16		
S.E. of regression	1,51E+10			5467700			7,14E+09			5454876		
R-squared	0,001742			0,016249			0,005816			0,011541		
Adjusted R-squared	-0,003042			0,011535			0,001051			0,006804		
F(3, 626)	0,364071			3,446655			1,22063			2,436428		
P-value(F)	0,778974			0,016453			0,301315			0,063695		
Log-likelihood	-15658,9			-10665,98			-15186,15			-10664,5		
Akaike criterion	31325,79			21339,95			30380,3			21337		
Schwarz criterion	31343,57			21357,74			30398,09			21354,78		
Hannan-Quinn	31332,7			21346,86			30387,21			21343,9		
rho				-0,171181			0,944086			-0,128169		
Durbin-Watson				1,515987			0,004212			1,450432		

Table 7: The results of the DID model, pooled sample of all six cities (source: own calculations)

The results show the presence of negative effects on total receipts of all business entities, and only corporate companies (in this and all subsequent models, the key value is the value of the coefficient of variable “epk_time_dummy” which equals aforementioned coefficient β_3). However, it is necessary to draw attention to the fact that the values of the F tests were not statistically significant and therefore subject to caution in interpreting this result.

But in the model estimating the effect on profits of all business subjects, both the value of the F test as well as the β_3 coefficient are statistically significant. The model states that the value

¹ Unfortunately due to time limits the regressions were done only using POLS method. For the workshop results of dynamic models using system GMM will also be provided for comparison and more precise estimates of relationships.

of the profit of business subjects grew by 7.49 million EUR in each of the partner cities in 2012. It also states a statistically significant increase in the profit of corporations of approximately 6.09 million EUR in each of the partner cities. If this value is aggregated across the six cities, we get an economic impact, which is still significantly less than the ex-ante multiplier predicted effect, yet shows the significant economic impacts of the project.

The two tables below show the effects in each of the partner cities, first in corporate receipts and then in the profits of corporate businesses.

POLs - incomes of companies, individual cities	Maribor			Murska Sobota			Novo mesto			Ptuj			Slovenj Gradec			Velenje		
	Coefficient	t ratio		Coefficient	t		Coefficient	t		Coefficient	t		Coefficient	t		Coefficient	t	
const	9,08E+08	1,7408	*	9,08E+08	1,7408	*	9,08E+08	1,7408	*	9,08E+08	1,7408	*	9,08E+08	1,7408	*	9,08E+08	1,7408	*
epk dummy	9,67E+09	18,5321	***	2,11E+09	4,0419	***	4,39E+09	8,4133	***	6,36E+06	0,0122		-2,36E+08	-0,4525		4,22E+09	8,0887	***
time dummy	-7,08E+07	-1,2228		-7,08E+07	-1,2228		-7,08E+07	-1,2228		-7,08E+07	-1,2228		-7,08E+07	-1,2228		-7,08E+07	-1,2228	
epk_time_dummy	1,12E+08	1,942	*	-4,91E+08	-8,475	***	-5,70E+08	-9,84	***	4,14E+07	0,7145		1,58E+07	0,2726		-9,64E+08	-16,6387	***
Mean dependent var	9,32E+08			8,94E+08			9,05E+08			8,85E+08			8,84E+08			9,04E+08		
S.D. dependent var	7,22E+09			7,19E+09			7,19E+09			7,19E+09			7,19E+09			7,19E+09		
Sum squared resid	3,17E+22			3,17E+22			3,17E+22			3,17E+22			3,17E+22			3,17E+22		
S.E. of regression	7,21E+09			7,21E+09			7,21E+09			7,21E+09			7,21E+09			7,21E+09		
R-squared	0,008812			0,000384			0,001688			0,000022			0,000027			0,001473		
Adjusted R-squared	0,003946			-0,004524			-0,003214			-0,004888			-0,004883			-0,00343		
F(3, 611)	1,81072			0,078277			0,344285			0,00439			0,005413			0,30042		
P-value(F)	0,143962			0,971755			0,79331			0,999599			0,999452			0,825106		
Log-likelihood	-14830,01			-14830,01			-14830,01			-14830,01			-14830,01			-14830,03		
Akaike criterion	29668,03			29668,02			29668,03			29668,02			29668,02			29668,05		
Schwarz criterion	29685,71			29685,71			29685,71			29685,71			29685,71			29685,74		
Hannan-Quinn	29674,91			29674,9			29674,9			29674,9			29674,9			29674,93		
rho	0,943786			0,943799			0,943789			0,943799			0,943799			0,943699		
Durbin-Watson	0,004049			0,004033			0,004046			0,004033			0,004033			0,004156		

Table 8: The results of the DID model receipts of corporations, individual cities (source: own calculations)

Table 8 shows that the city of Maribor in 2012 as a result of the EPC recorded higher receipts of companies, the value is roughly equivalent to our estimates, in the impact part of the study: 112 million EUR. Notice that the value is only weakly statistically significant and the value of F test is on the border of statistical significance. So we have to again be careful in interpretations.

Estimates in other cities are not that positive. The cities of Ptuj and Slovenj Gradec have not recorded any statistically significant increase in receipts. Other cities (Murska Sobota, Novo mesto and Velenje) have recorded a strong drop in receipts of the companies in year 2012. Notice that none of these five regressions reaches statistical significance. Therefore, based on the analysis at this point we are only able to say that in the city of Maribor in 2012

there were slightly increased benefits of the companies, with a value that goes in the direction of our impact based value, while still being significantly smaller in level.

POLs - profits of companies, individual cities	Maribor			Murska Sobota			Novo mesto			Ptuj			Slovenj Gradec			Velenje		
	Coefficient	t ratio		Coefficient	t		Coefficient	t		Coefficient	t		Coefficient	t		Coefficient	t	
const	178478	0,6097		178478	0,6097		178478	0,6097		178478	0,6097		178478	0,6097		178478	0,6097	
epk_dummy	6,37E+06	21,7457	***	-401520	-1,3716		-3,61E+06	-12,3366	***	12705,2	0,0434		-1,17E+06	-4,0023	***	-1,09E+06	-3,7102	***
time_dummy	-168846	-0,5244		-168846	-0,5244		-168846	-0,5244		-168846	-0,5244		-168846	-0,5244		-168846	-0,5244	
epk_time_dummy	1,21E+06	3,7536	***	1,36E+06	4,2176	***	1,08E+07	33,5644	***	815768	2,5336	**	2,93E+06	9,097	***	1,94E+07	60,3301	***
Mean dependent var	155213,2			122445,6			122152,2			123584,6			121243,7			148483,2		
S.D. dependent var	4734783			4663699			4690230			4664586			4664412			5454052		
Sum squared resid	1,36E+16			1,33E+16			1,34E+16			1,34E+16			1,33E+16			1,79E+16		
S.E. of regression	4721957			4674290			4687904			4675253			4674261			5416635		
R-squared	0,01027			0,000362			0,005873			0,000329			0,000679			0,018493		
Adjusted R-squared	0,005411			-0,004547			0,000992			-0,004579			-0,004228			0,013674		
F(3, 611)	2,11338			0,073652			1,203158			0,067071			0,138378			3,837403		
P-value(F)	0,097352			0,974114			0,307797			0,977372			0,937057			0,009684		
Log-likelihood	-10321,8			-10315,56			-10317,35			-10315,68			-10315,55			-10406,21		
Akaike criterion	20651,59			20639,11			20642,69			20639,37			20639,11			20820,41		
Schwarz criterion	20669,28			20656,8			20660,38			20657,05			20656,79			20838,1		
Hannan-Quinn	20658,47			20645,99			20649,57			20646,25			20645,98			20827,29		
rho	0,04516			0,05673			0,053388			0,056493			0,056737			-0,089117		
Durbin-Watson	1,015457			0,985024			0,993811			0,985649			0,985006			1,371821		

Table 9: The results of the DID model, the profits of corporations, individual cities (source: own calculations)

The results in Table 9 speak in favour of the thesis of observable economic effects of the ECoC 2012 project on corporate receipts. As can be seen from the regressions, the coefficients are showing the significant strength of the impact in all six cities. Word of caution is again to be said about some statistically insignificant regressions (especially Murska Sobota, Ptuj, Slovenj Gradec)

The effect on employment

Slightly different are results on the effects on employment. According to the results in impact study one would expect an increase even up to 1100 new jobs. Unfortunately, our results show significantly different results, and somewhat surprisingly even show the strong trends in the opposite direction. In the analysis, we build on the SORS data where data are available for 193 municipalities for the years between 2005 and 2012. We used data on the number of labour active persons in the municipality, the number of employees in the municipality and the number of self-employed persons in the municipality.

POLS - employment, pooled cities	Total employment			Employed persons			Self-employed persons		
	<i>Coefficient</i>	<i>t ratio</i>		<i>Coefficient</i>	<i>t</i>		<i>Coefficient</i>	<i>t</i>	
const	3701,64	3,3885	***	3287,95	3,1595	***	413,763	7,6878	***
epk_dummy	19816,7	2,6426	***	18807,3	2,655	***	1009,35	2,3898	**
time_dummy	-109,747	-3,2296	***	-132,37	-4,1503	***	22,5437	3,3859	***
epk_time_dummy	-2153,74	-2,806	***	-2112,81	-2,7742	***	-40,8513	-2,2321	**
Mean dependent var	4295,613			3847,879			447,8013		
S.D. dependent var	15462,49			14714,73			776,9361		
Sum squared resid	3,51E+11			3,18E+11			8,84E+08		
S.E. of regression	15099,54			14371,56			757,8218		
R-squared	0,048249			0,047953			0,050449		
Adjusted R-squared	0,046395			0,046099			0,048599		
F(3, 1540)	26,02344			25,85601			27,27305		
P-value(F)	2,02E-16			2,56E-16			3,48E-17		
Log-likelihood	-17045,85			-16969,56			-12426,25		
Akaike criterion	34099,71			33947,12			24860,5		
Schwarz criterion	34121,08			33968,49			24881,87		
Hannan-Quinn	34107,66			33955,07			24868,45		

Table 10: Results of the DID model, employment in all six cities (source: own calculations)

Results in Table 10 show that effects on the employment actually took place, but in the opposite direction. By the deadline of the study we have not yet been able to fully explain this effect (the effect is also evident from the graphs below). Based on the above data, in each of the six cities as a result of the ECoC 2012 project (or a factor that was present in 2012 in only those six cities and not anywhere else in Slovenia), the number of employed people in the municipality decreased by about 2154, number of employees fell by 2113 and the number of self-employed for 41. All effects are highly significant.

In the table below are the separate effects on the number of persons employed in each the partner cities. Results show that such effects are present in all cities, but some of the models are again non-significant (Murska Sobota, Ptuj, Slovenj Gradec). Statistically significant are models in Novo mesto (drop in employees of 941 people) and Velenje (drop in employees of 2,677 persons), while especially prominent are results in Maribor, where the model is strongly statistically significant and indicates that the in 2012 as a result of the ECoC (or any other effect only present only in six cities in 2012) there was a decline of employees to over 6000 people. As mentioned above, this effect is not entirely consistent with other data in the survey, but we have not managed to fully explain it yet. It is also endorsed by the short insight into the data, as the graphs below reveal.

POLS - Total employment, individual cities	Maribor			Murska Sobota			Novo mesto			Ptuj			Slovenj Gradec			Velenje		
	Coefficient	t ratio		Coefficient	t		Coefficient	t		Coefficient	t		Coefficient	t		Coefficient	t	
const	3287,95	3,1595	***	3287,95	3,1595	***	3287,95	3,1595	***	3287,95	3,1595	***	3287,95	3,1595	***	3287,95	3,1595	***
epk_dummy	55872,4	53,6901	***	10536,4	10,1249	***	18358,6	17,6416	***	8009,2	7,6964	***	4814,02	4,626	***	15253,2	14,6574	***
time_dummy	-132,37	-4,1503	***	-132,37	-4,1503	***	-132,37	-4,1503	***	-132,37	-4,1503	***	-132,37	-4,1503	***	-132,37	-4,1503	***
epk_time_dummy	-6039,23	-189,3546	***	-1158,39	-36,3204	***	-940,928	-29,502	***	-808,285	-25,3431	***	-1053,11	-33,0192	***	-2676,92	-83,9323	***
Mean dependent var	3564,585			3326,681			3368,433			3313,471			3296,313			3350,761		
S.D. dependent var	14783,06			14246,99			14288,56			14238,42			14230,9			14268,51		
Sum squared resid	3,04E+11			3,04E+11			3,04E+11			3,04E+11			3,04E+11			3,04E+11		
S.E. of regression	14242,03			14241,03			14240,91			14240,92			14240,95			14241,15		
R-squared	0,073708			0,002831			0,008641			0,001645			0,000587			0,00582		
Adjusted R-squared	0,071855			0,000836			0,006658			-0,000352			-0,001412			0,003831		
F(3, 611)	39,78662			1,41943			4,358214			0,823937			0,293487			2,926885		
P-value(F)	9,74E-25			0,235343			0,004589			0,480628			0,830132			0,032688		
Log-likelihood	-16516,27			-16516,16			-16516,15			-16516,15			-16516,15			-16516,17		
Akaike criterion	33040,53			33040,32			33040,29			33040,3			33040,3			33040,35		
Schwarz criterion	33061,8			33061,58			33061,56			33061,56			33061,57			33061,61		
Hannan-Quinn	33048,45			33048,24			33048,22			33048,22			33048,22			33048,27		

Table 11: Results of the DID model, employed persons, individual cities (source: own calculations)

The figure below therefore shows how the number of persons employed in the largest Slovenian cities varies, especially Figure 2 clearly shows that in Maribor there is really present a strong downward trend in employment, which judging by the SORS and the above analysis the ECoC did not manage to turn in any way. A similar, though less pronounced trend is shown in the graph to be present in Murska Sobota and Novo mesto, and, judging by the above analysis of the SORS data, in all six cities.

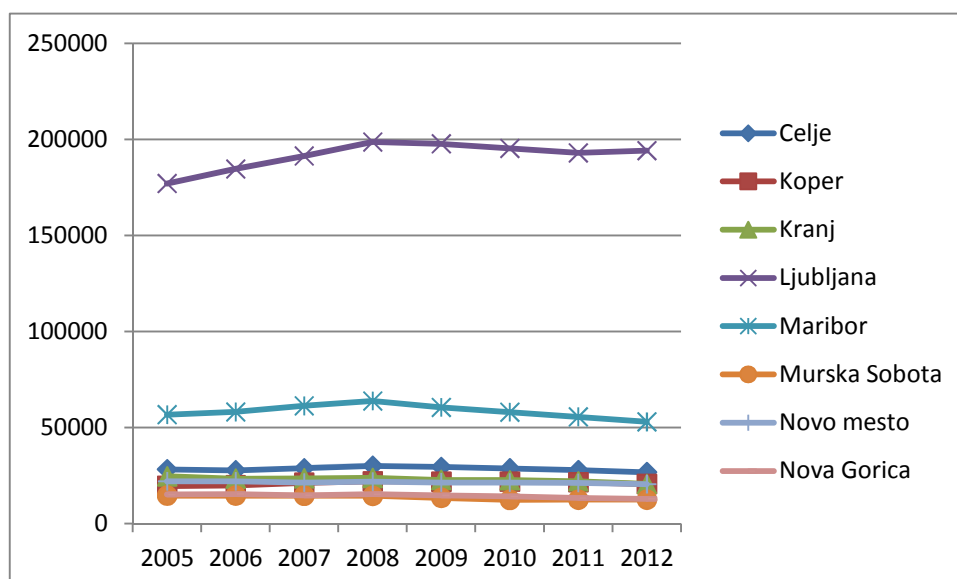


Figure 1: Illustration of the movement of employees from 2005 to 2012 in eight Slovenian cities (source: own calculations, SURS)

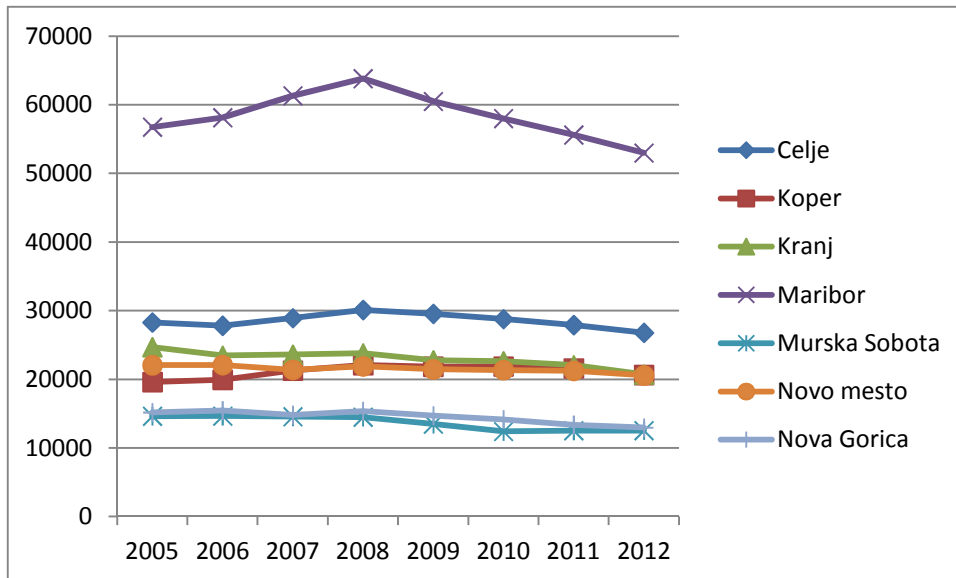


Figure 2: Movement of persons employed from 2005 to 2012 in seven Slovenian cities, Ljubljana without (Source: own calculations, SORS)

The effect on the average monthly salary

We also estimated the effects of movements in average monthly earnings in the municipalities of partner sites. For this purpose, we used data for 210 Slovenian municipalities for the years 2008 to 2012 on monthly basis, which are lead by SORS. For the analysis we aggregated and averaged the data on yearly basis. The results for all six partner cities are in the table below.

POLS - average monthly salaries, pooled cities	Yearly average		
	<i>Coefficient</i>	<i>t</i>	
const	1280,79	134,853	***
epk_dummy	94,8037	1,941	*
time_dummy	49,0811	12,3531	***
epk_time_dummy	30,6749	1,8849	*
Mean dependent var	1293,494		
S.D. dependent var	146,4674		
Sum squared resid	21783284		
S.E. of regression	144,3098		
R-squared	0,032021		
Adjusted R-squared	0,029245		
	11,53404		
F(3, 626)			
P-value(F)	1,93E-07		
Log-likelihood	-6708,442		
Akaike criterion	13424,88		
Schwarz criterion	13444,71		
Hannan-Quinn	13432,4		
rho	0,876255		
Durbin-Watson	0,155731		

Table 12: Results of the DID model, the average monthly salary of six cities (source: own calculations)

The table shows yet another surprising result of the analysis: monthly salary in the partner cities in 2012 as a result of the ECoC project *increased* in nominal terms by almost 31 Euros. The effect and the model itself is strongly statistically significant.

The following table shows the analysis of the effect in each of the partner cities.

POLS - Average monthly salaries, individual cities	Maribor		Murska Sobota		Novo mesto		Ptuj		Slovenj Gradec		Velenje	
	Coefficient	t	Coefficient	t	Coefficient	t	Coefficient	t	Coefficient	t	Coefficient	t
const	1280,79	134,853 ***	1280,79	134,853 ***	1280,79	134,853 ***	1280,79	134,853 ***	1280,79	134,853 ***	1280,79	134,853 ***
epk_dummy	140,144	14,7555 ***	-3,08872	-0,3252	333,453	35,1089 ***	-8,02601	-0,845	54,1327	5,6996 ***	52,2073	5,4968 ***
time_dummy	49,0811	12,3531 ***	49,0811	12,3531 ***	49,0811	12,3531 ***	49,0811	12,3531 ***	49,0811	12,3531 ***	49,0811	12,3531 ***
epk_time_dummy	18,5916	4,6793 ***	33,5114	8,4344 ***	51,5551	12,9757 ***	-44,7288	-11,2577 ***	44,4324	11,1831 ***	80,6878	20,3081 ***
Mean dependent var	1291,312		1290,628		1292,287		1290,527		1290,917		1290,943	
S.D. dependent var	145,7059		145,427		147,3404		145,329		145,472		145,5349	
Sum squared resid	21239961		21257914		21240973		21232821		21250098		21258878	
S.E. of regression	144,2328		144,2937		144,2362		144,2085		144,2672		144,297	
R-squared	0,022989		0,018408		0,044499		0,018245		0,019377		0,019819	
Adjusted R-squared	0,020119		0,015524		0,041692		0,01536		0,016496		0,016939	
F(3, 611)	8,008136		6,382503		15,84996		6,324747		6,724924		6,88155	
P-value(F)	0,000028		0,000276		4,44E-10		0,000299		0,000171		0,000137	
Log-likelihood	-6548,122		-6548,555		-6548,147		-6547,95		-6548,367		-6548,579	
Akaike criterion	13104,24		13105,11		13104,29		13103,9		13104,73		13105,16	
Schwarz criterion	13123,97		13124,84		13124,02		13123,63		13124,46		13124,89	
Hannan-Quinn	13111,73		13112,6		13111,78		13111,39		13112,22		13112,65	
rho	0,876962		0,87627		0,876961		0,877207		0,876643		0,876368	
Durbin-Watson	0,154869		0,155527		0,154913		0,154591		0,155265		0,155866	

Table 13: Results of the DID model, the average monthly wage, individual cities (source: own calculations)

The above results show that in all partner cities, with the exception of Ptuj, there is present an increase in monthly salaries as a result of ECoC 2012. The strongest effect is found in Velenje, where the monthly wage increased by 81 Euros. In Novo mesto the wages increases on average by 51 EUR, in Slovenj Gradec 44 EUR, in Murska Sobota 34 EUR and in Maribor 19 EUR. The decline in monthly salaries is only present in the Municipality of Ptuj, where wages have decreased by 45 EUR. All models are again highly statistically significant.

One possible explanation for the unusual phenomenon of a reduction of jobs and the increase in the average monthly salary could be a change in the Minimum Wage Act, according to which, since January 2012, the minimum wages were subject to the higher payments than before (more on: http://www.mddsz.gov.si/si/delovna_podrocja/delovna_razmerja_in_pravice_iz_dela/socialno_partnerstvo/minimalna_placa/). However, it is of course also necessary to add that these changes apply to the entire country, while the effects of increases in average wages and lower employment are valid only in the six partner cities in 2012.

The impact on tourist visits and overnight stays

Results of the effects on tourist visits and overnight stays are much more in line with the previously identified data in the ECoC project. In the analysis, we used data provided by

SORS provided on monthly basis. We used data for 61 municipalities for which there is a complete record of the Statistical Office. The table below shows the effects on the level of all six partner cities.

POLs - tourism, pooled cities	tourist visits total			tourist visits foreigners only			overnights total			overnights foreigners only		
	Coefficient	t ratio		Coefficient	t		Coefficient	t		Coefficient	t	
const	48015,1	4,3292	***	30369,4	3,5552	***	144723	4,4548	***	83410	3,8673	***
epk_dummy	-14153,1	-0,8476		-7569,06	-0,5865		-65843,1	-1,5112		-32715,5	-1,1006	
time_dummy	2853,32	1,9602	*	3263,71	2,2768	**	3712,62	1,3103		8077,58	3,0317	***
epk_time_dummy	2212,1	0,448		2407,74	0,5064		7690,63	0,8055		5863,67	0,584	
Mean dependent var	47237,13			30325,04			139140,4			81922,99		
S.D. dependent var	80400,75			62900,25			232175,4			156952,6		
Sum squared resid	1,96E+12			1,20E+12			1,63E+13			7,46E+12		
S.E. of regression	80685,91			63160,83			232523,1			157409		
R-squared	0,002832			0,001648			0,006901			0,004102		
Adjusted R-squared	-0,007106			-0,008303			-0,002997			-0,005824		
F(3, 626)	0,284998			0,165596			0,697175			0,413226		
P-value(F)	0,836224			0,919506			0,554396			0,743623		
Log-likelihood	-3876,75			-3802,062			-4199,57			-4080,577		
Akaike criterion	7761,501			7612,124			8407,14			8169,154		
Schwarz criterion	7776,382			7627,005			8422,022			8184,035		
Hannan-Quinn	7767,453			7618,076			8413,092			8175,106		
rho							0,999643					
Durbin-Watson							0,004135					

Table 14: Results of the DID model, tourist visits and overnight stays, each of the six cities (source: own calculations)

The above data show that on the level of all six cities no notable effect on tourism was present. Descriptive data of SORS show that in some places (Maribor, Slovenj Gradec, Ptuj, Velenje) there was a noticeable increase in the number of tourists in 2012 as compared to 2011, whereas in some others (Murska Sobota, Novo mesto) these movements were not visible or were even present in the negative direction. Such findings are also confirmed by our calculations.

The strongest positive effects were present for the municipality of Maribor, all the results are shown in the table below.

POLs - tourism, only Maribor	tourist visits total			tourist visits foreigners only			overnights total			overnights foreigners only		
	Coefficient	t ratio		Coefficient	t		Coefficient	t		Coefficient	t	
const	48015,1	4,3292	***	30369,4	3,5552	***	144723	4,4548	***	83410	3,8673	***
epk_dummy	43537,2	3,9255	***	41354,1	4,8411	***	60504,5	1,8624	*	69842,5	3,2382	***
time_dummy	2853,32	1,9602	*	3263,71	2,2768	**	3712,62	1,3103		8077,58	3,0317	***
epk_time_dummy	27944,4	19,1979	***	27136,8	18,9308	***	57388,9	20,255	***	58201,9	21,8444	***
Mean dependent var	49462,98			31857,56			146750,9			86480,61		
S.D. dependent var	83388,23			65367,35			240463,9			162909,3		
Sum squared resid	1,93E+12			1,18E+12			1,61E+13			7,37E+12		
S.E. of regression	83559,52			65391,28			241549,5			163360,5		
R-squared	0,006685			0,010028			0,0018			0,005266		
Adjusted R-squared	-0,004112			-0,000732			-0,00905			-0,005547		
F(3, 626)	0,619118			0,931952			0,165894			0,487006		
P-value(F)	0,603152			0,425674			0,919301			0,691579		
Log-likelihood	-3568,616			-3499,969			-3865,841			-3756,329		
Akaike criterion	7145,233			7007,937			7739,681			7520,657		
Schwarz criterion	7159,772			7022,477			7754,221			7535,196		
Hannan-Quinn	7151,065			7013,769			7745,513			7526,489		
rho							0,998945					
Durbin-Watson							0,004065					

Table 15: Results of the DID model, tourist visits and overnight stays, only the Municipality of Maribor (source: own calculations)

From the above table it is evident that the effects for Maribor are positive and statistically significant in all categories. Number of tourist arrivals has increased as a result of the ECoC 2012 project for almost 28,000 total visits, part of which was an increase in visits by foreign tourists for 27,137 visits. Total overnights were up to 57,389 nights where tourists from abroad outweigh the domestic, as they even increased more than the total overnight stays; the increased overnight stays by foreign tourists amount to 58,202 nights. All these data are fairly accurate fitted to projections of the Public Institute Maribor 2012 and local tourism organizations.

The table below shows the effects in other partner cities where the picture is, as expected, no longer as clear as in Maribor.

POLS - total tourist visits, individual cities	Murska Sobota			Novo mesto			Ptuj			Slovenj Gradec			Velenje		
	Coefficient		t	Coefficient		t	Coefficient		t	Coefficient		t	Coefficient		t
	const	48015,1	4,3292	***	48015,1	4,3292	***	48015,1	4,3292	***	48015,1	4,3292	***	48015,1	4,3292
epk_dummy	-34203,3	-3,0839	***	-18204,1	-1,6413		6082,69	0,5484		-42622,8	-3,843	***	-39508,6	-3,5622	***
time_dummy	2853,32	1,9602	*	2853,32	1,9602	*	2853,32	1,9602	*	2853,32	1,9602	*	2853,32	1,9602	*
epk_time_dummy	-3872,07	-2,6601	***	-3953,32	-2,7159	***	-1725,07	-1,1851		-1259,57	-0,8653		-3861,82	-2,6531	***
Mean dependent var	47961,13			48246,54			48688,19			47820,11			47866,43		
S.D. dependent var	83244,39			83153,08			83118,38			83309,16			83286,46		
Sum squared resid	1,93E+12			1,93E+12			1,93E+12			1,93E+12			1,93E+12		
S.E. of regression	83557,65			83557,59			83557,59			83557,43			83557,54		
R-squared	0,003293			0,001105			0,00027			0,004848			0,004303		
Adjusted R-squared	-0,007541			-0,009753			-0,010596			-0,005969			-0,00652		
F(3, 276)	0,303978			0,101738			0,024869			0,448179			0,397551		
P-value(F)	0,822512			0,958972			0,994687			0,718784			0,754867		
Log-likelihood	-3568,61			-3568,61			-3568,61			-3568,609			-3568,61		
Akaike criterion	7145,22			7145,22			7145,22			7145,219			7145,22		
Schwarz criterion	7159,759			7159,759			7159,759			7159,758			7159,759		
Hannan-Quinn	7151,052			7151,052			7151,052			7151,05			7151,051		

Table 16: The results of the DID model, tourist visits and overnight stays, individual cities (source: own calculations)

The above table shows that in the cities of Ptuj and Slovenj Gradec we can't talk about any perceptible increase in the number of tourists only as a result of the project ECoC 2012. At the level of the other cities even negative effects are present, this applies to Murska Sobota, Novo mesto and Velenje. Again a statistically weak feature of all these regressions (including Maribor) should be noted, which puts these results in a more relative perspective. However, our data suggest the conclusion that the impact of tourism varies between partner cities, from those who have been holding strong growth (especially Maribor), those who had received a small increase (Ptuj, Slovenj Gradec, maybe even Velenje) to those who have enjoyed the fall (Murska Sobota and Novo mesto).

Effect of visits to cultural events

In the last section of this part of the study we will estimate what were the effects on visits to cultural events. To this end, we took the data of eleven theaters, public institutions, which are obliged to keep a regular record of their visit performances. Of these eleven, four are located in the partner cities of the project: Anton Podbevšek Theatre, Ptuj City Theatre, Maribor Puppet Theatre and the National Theatre Maribor. We've done regression analysis using individual components of the visit, in particular visits to performances within the headquarters, the number of representatives within the headquarters, joint visit to all non-commercial events, and the average visit to the event. The results of the analysis are set out below.

POLs - theatre visitors, pooled cities	visitors of house productions			number of performances in house			visitors all noncommercial events			visitors per performance		
	Coefficient	t ratio		Coefficient	t		Coefficient	t		Coefficient	t	
const	51719,7	5,8293	***	306,107	4,2484	***	81310,8	9,5895	***	199,633	17,7186	***
epk_dummy	-28077	-2,6124	**	-139,357	-1,7453	*	-40706,8	-2,9429	***	-64,968	-2,937	***
time_dummy	-2590,11	-0,6899		11,1786	0,5126		-5775,39	-1,6176		-20,676	-4,1316	***
epk_time_dummy	3782,67	0,9788		7,82143	0,3273		14591,3	3,2879	***	30,8053	1,6611	
Mean dependent var	41266,95			258,2364			66414,47			174,1137		
S.D. dependent var	25563,87			186,4364			31887,81			59,99667		
Sum squared resid	2,57E+10			1633454			3,63E+10			147641,9		
S.E. of regression	22469,04			178,9651			26678,66			53,80464		
R-squared	0,270387			0,129734			0,338918			0,240441		
Adjusted R-squared	0,227469			0,078542			0,300031			0,195761		
F(3, 51)	6,300023			2,534264			8,715437			5,381407		
P-value(F)	0,001018			0,067121			0,000091			0,002696		
Log-likelihood	-627,0593			-361,2607			-636,5042			-295,1599		
Akaike criterion	1262,119			730,5213			1281,008			598,3199		
Schwarz criterion	1270,148			738,5506			1289,038			606,3492		
Hannan-Quinn	1265,224			733,6263			1284,113			601,4249		
rho	0,841536			0,967021			0,625459			0,119653		
Durbin-Watson	0,26521			0,172836			0,579572			1,409276		

Table 17: Results of the DID model, visiting theaters in the partner cities (source: own calculations)

From the table we can see that the specific impact of the visits to in-house theater performances was not present - the coefficient is positive but not statistically significant. The number of in-house performances in 2012 did not increase as a result of the ECoC, the coefficient is positive but again not statistically significant. Yet, a perceptible increase in visits to all non-commercial events in each of the theatres was present, it increased by 14,591 visitors as a result of the ECoC 2012. We can also talk about a very weak effect on the number of visitors to the performances, which has grown by about 31 visitors at each performance. All models are again highly statistically significant.

5. The results of the contingent valuation study

Our methodological triangulation will conclude with the presentation of the results of contingent valuation study. The latter was made in cooperation with the “Call center of the blind” from Škofja Loka using telephone interviews. A total of 655 interviews were conducted, after eliminating incomplete responses we were left with 616 responses which were taken into account in the analysis.

The analysis was done by telephone, in accordance with acceptable guidelines recommended by the Blue Ribbon panel (Arrow et al. 1993). The entire population was divided into two groups: half of the responses (328) were the responses from the partner cities and the rest

(327) were from other parts of Slovenia. After excluding incomplete responses we were left with 311 responses from the partner cities and 305 responses from the rest of Slovenia.

The questionnaire was divided into four parts. In the first part, the respondent raised a few questions regarding the attitudes to the field of culture in general, and knowledge and attitudes towards the ECoC 2012. In the second part, the respondents were asked questions regarding their socio-demographic characteristics, in particular an important question was on their income, which in line with the recommendations of these studies has to be placed at the end of the study, but, of course, forms important information the contingent scenario. The latter was therefore put in the third part, where we firstly presented basic information about the project ECoC 2012. Then, we set up a relatively realistic scenario that the project would continue at a reduced, 20% of the present scale in the following years, and then asked they would be willing to finance such project in the next three years were. Basic elicitation mechanism was composed of two parts, the first was by the method of double-bounded dichotomous choice, where we firstly presented the respondent with first amount of contribution. If the answer was yes, we presented him twice the amount, but if the answer to the first question is no, we set a twice lower amount. At the end, we asked the open ended question on the highest value which he would be prepared to contribute to the project. Method of payment was taxes, because of greater credibility of results, avoiding at least part of the warm glow effect. The table below is a list of the offered amounts.

	začetni znesek	višji znesek	nižji znesek
manj kot 200 €	5,00 €	10,00 €	2,50 €
od 200 € do manj kot 400 €	7,50 €	15,00 €	3,75 €
od 200 € do manj kot 400 €	10,00 €	20,00 €	5,00 €
od 600 € do manj kot 1000 €	12,50 €	25,00 €	6,25 €
od 1000 € do manj kot 2000 €	15,00 €	30,00 €	7,50 €
2000 € ali več	17,50 €	35,00 €	8,75 €

Table 18: List the amounts offered to the respondent (source: own calculations)

The last part of the questionnaire was intended for the interviewer to express his opinion on the credibility of the respondent's answers. This further addressed the potential non-credible responses and allowed interviewers to immediately record their possible doubts about the credibility of the respondent's answers.

The tables below present some basic descriptive characteristics of the respondents.

Variable	Mean	Median	Minimum	Maximum	Std. Dev.	C.V.	Skewness	Ex. kurtosis
gender	0,644481	1	0	1	0,479059	0,743326	-0,603674	-1,63558
age	52,8409	56	16	90	17,1361	0,324296	-0,251218	-0,919589
numreshouseh	3,01948	3	1	11	1,47376	0,488085	1,00352	1,9311

Table 19: Socio-demographic statistics of respondents (Source: own calculations)

From the Table 19 it is evident that among the respondents there are a larger number of women (64.45%). The average age of respondents was slightly less than 53 years, reflecting the relatively high age profile of the respondents, which was later confirmed by the data on employment profile. The youngest respondent (respondents were required to have a permanent source of income) was 16 years old, the oldest 90 years. On average, respondents were living in households with three members, the largest household in which they live was composed of 11 members.

Employment status	frequency	percent	cumulative perc.
0 - employed	197	31,98%	31,98%
1 - self-employed	29	4,71%	36,69%
2 - farmer	5	0,81%	37,50%
3 - unemployed	55	8,93%	46,43%
4 - retired	280	45,45%	91,88%
5 - student	39	6,33%	98,21%
6 - household keeper	10	1,62%	99,84%
7 - unable to work	1	0,16%	100,00%
8 - other	0	0,00%	100,00%

Table 20: Answers to the question on employment (source: own calculations)

The table above shows once again that the survey covers a larger number of older people. Most respondents were pensioners (280 or 45%), followed by employees (197 or 32%), much less in number were unemployed (55 or 9%), pupils or students (39 or 6%) and the self-employed (29 or 5%). The least respondents were housewives (10 or 2%), farmers (5 or 1%) and unable to work (only 1 or 0.16%).

Education	frequency	percent	cumulative perc.
0 - elementary school	67	10,88%	10,88%
1 - secondary school	313	50,81%	61,69%
2 - high school, college or Bologna level university degree	143	23,21%	84,90%
3 - old system university degree or Bologna Masters degree	82	13,31%	98,21%
4 - scientific Master or PhD degree	11	1,79%	100,00%

Table 21: Answers to the question on education (source: own calculations)

Regarding education, the majority had secondary education (313 or 51%), followed by upper or higher education (143 or 23%), university educated (82 or 13%), only primary education (67 or 11%) while the lowest number of respondents has Master's or PhD degree (11 or 2%).

Monthly income	frequency	percent	cumulative perc.
a. less than 200 €	38	6,17%	6,17%
b. from 200 € to less than 400 €	64	10,39%	16,56%
c. from 400 € to less than 600 €	137	22,24%	38,80%
d. from 600 € to less than 1000 €	228	37,01%	75,81%
e. from 1000 € to less than 2000 €	137	22,24%	98,05%
f. 2000 € or higher	12	1,95%	100,00%

Table 22: Answers to the question about monthly income (source: own calculations)

By income category the largest number were those with a monthly income of between 600 and 1,000 EUR (228 or 37%), followed by the those with incomes between 400 and 600 EUR and those with income between 1000 and 2000 EUR (both 137 or 22%), then those with incomes between 200 and 400 EUR (64 or 10%) and finally those with incomes less than 200 EUR 200 per month (38 or 6%), and more than 2000 EUR (12 or 2%).

The graph below shows some of the main characteristics of the replies to the questionnaire. The first graph below shows the summary statistics to answer the question on the respondents' interest in culture. Respondents had to answer giving school grades from 1 to 5. From the responses it is clearly visible that the respondents most frequently identified for the mean grade of 3 (301 respondents or 48.86%) and 4 (152 respondents or 24.68%). The average value of this question was 3.33. Factor of interest in culture has also proved to be a statistically significant explanatory factor in predicting the willingness to pay, of which more later.

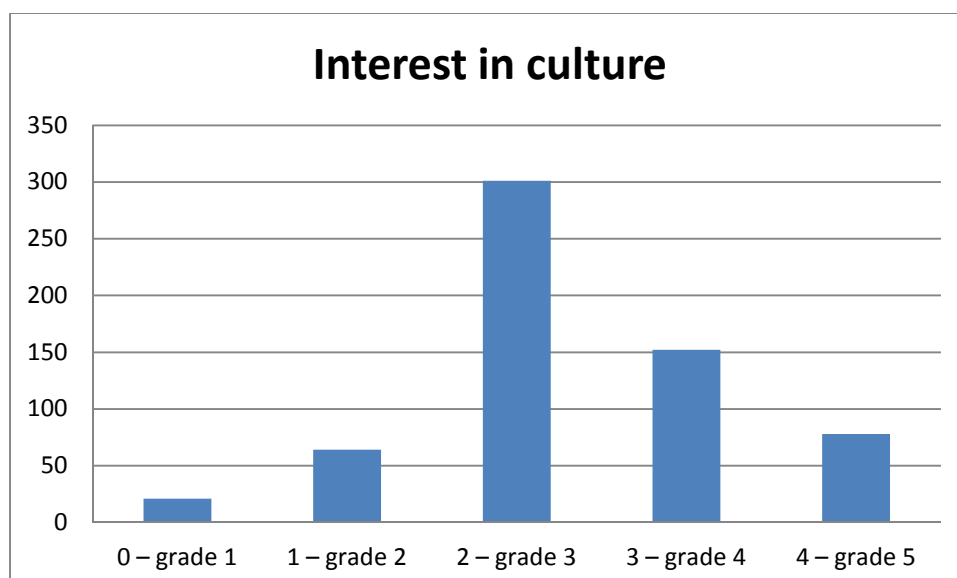


Figure 3: Answers to the question on interest in the culture (source: own calculations)

The following graph shows the responses to the question on knowledge of the culture, where we set up three sub-questions about their knowledge of the global, European and Slovenian culture. The respondents rated the best their knowledge of Slovenian culture, much less

believe they have good knowledge of the world' and European culture. Correlation analysis somewhat surprisingly showed that the knowledge of the culture is only weakly positively related to the willingness to pay, the same conclusion applies to all three levels of knowledge of culture.

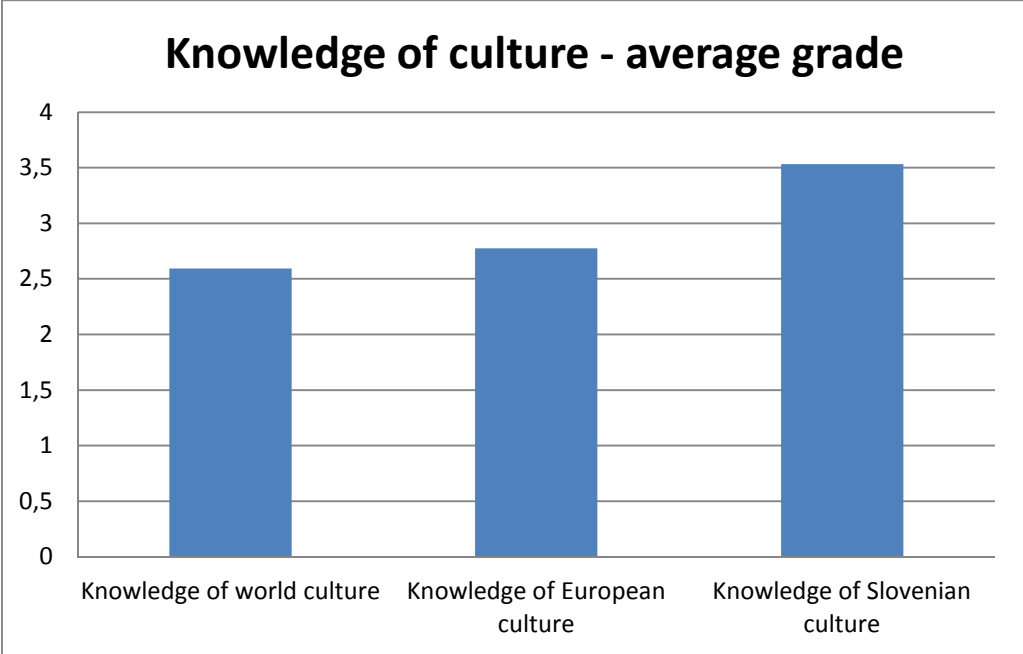


Figure 4: Answers to the question on knowledge of culture (source: own calculations)

Below we give results for respondents attitudes to culture (six claims were presented to them and asked to express their attitude to them on a level from 1 to 5). Most strongly agreed with the first very general statement that: "Cultural activities contribute significantly to the economic development of the environment where they take place." The answers also weakly positively correlated with willingness to pay.

Another argument was that: "Cultural activities that I don't visit have no value for me." With this we wanted to give indications on what proportion of the total cost of the project consists of non-use values. Respondents here expressed negative perspective, the majority of them consider, therefore, that they value the cultural activities that they do not visit. Answers to this question have very weak negative correlation with the value of willingness to pay.

The third argument is posed that "Now during the crisis is not the time to waste money on culture." The mean value to this statement was 2.5, i.e. half a percentage point below the middle of the scale, which seems surprising and show a general positive attitude of the respondents. This attitude question has the strongest (although still relatively weak) negative correlation with the willingness to pay and responses to this question were also shown to be statistically relevant explanatory factor in predicting the values of WTP.

The fourth argument is posed that "the majority of areas beyond the crisis are much more important in the allocation of resources than culture." A value slightly above 3 is the average attitude of the respondents to this question. Answers to this question are not statistically relevant factor in explaining our regression model, although the expected (very weakly) negatively correlation with the value of willingness to pay.

The fifth argument is the rule that "Cultural activities can be evaluated in money." Respondents on average tend to disagree as the mean value is again somewhat less than 2.5. The variable does not correlate with the value of willingness to pay.

Last, the sixth argument is the rule that "Culture is a fun for the elite." With this statement, the respondents do not agree, and the mean is slightly greater than 2. The answer to that argument does not represent a significant explanatory factor in the willingness to pay, even more, it does not correlate with WTP at all. This may mean that respondents are ready to contribute resources regardless of whether they see culture only in the elite meaning or are prepared into see it in its other aspects as well.

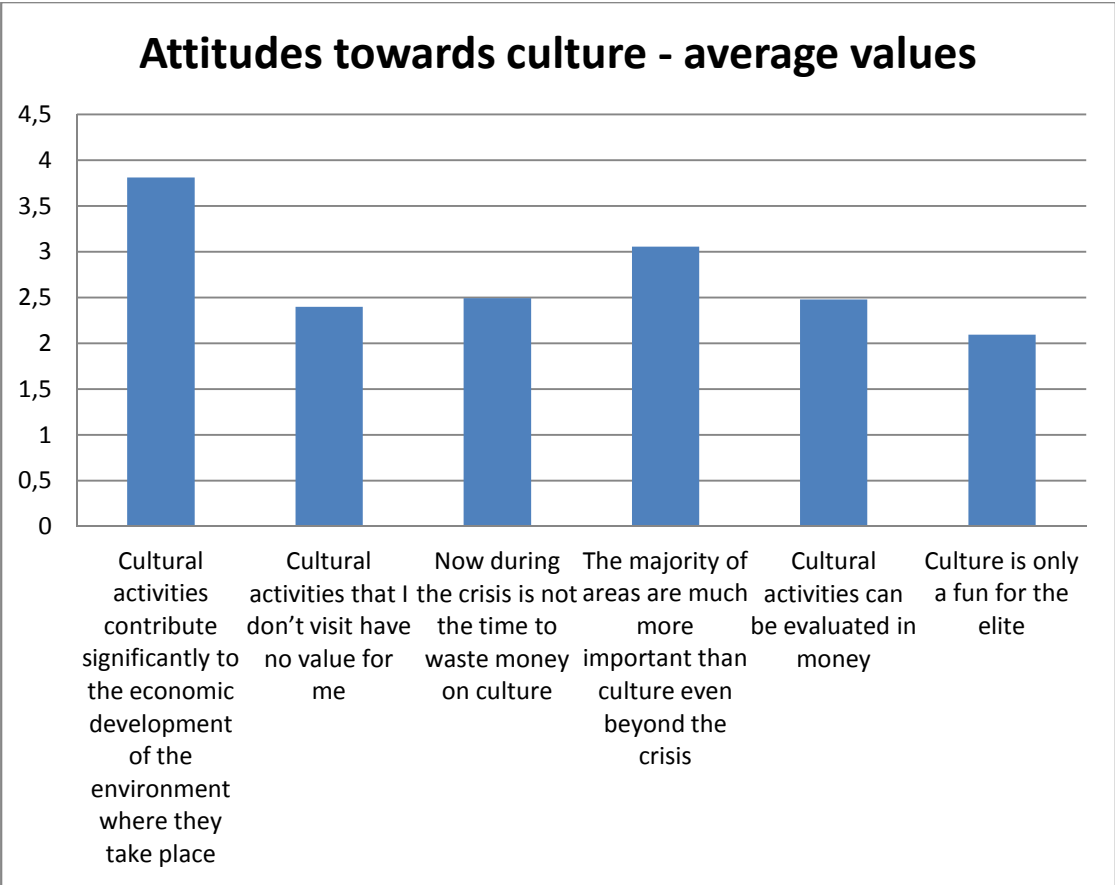


Figure 5: Answers to questions about attitudes to culture (source: own calculations)

On the question of who should provide the funds for culture, most respondents considered that this has to be done by state and local authorities, to a lesser extent by the opinion that the organizations should be doing this themselves and still a little less of them believe that

sponsors and donors, therefore wealthy individuals and businesses should do it. The vast majority of respondents, however, believe that funding for culture should be provided from all those sources (in addition to the above also from the European funds).

Most of the variables positively correlated with the expected value of willingness to pay, but the correlation is again very weak. None of the explanatory variables did factor in willingness to pay, even when you include the combined variable for all the answers to this question it didn't change much. Interesting is perhaps a weak negative correlation between those who are of the opinion that funding for culture provide the organization itself and the willingness to pay. Those who are therefore of the opinion that the culture should be provided by those who are engaged in culture, are therefore somewhat less likely to contribute to the ECoC, which is in line with expectations.

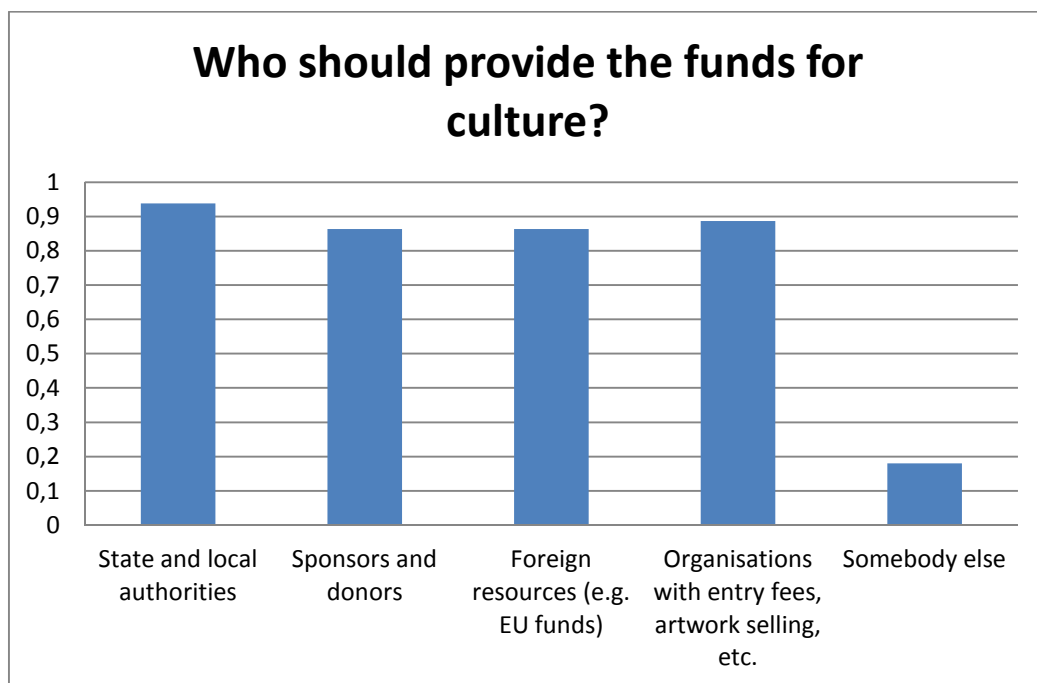


Figure 6: Answers to questions on funding for culture (source: own calculations)

Respondents were also asked about participation in culture. It is interesting to note a large proportion (over a third of all respondents), for which culture is a hobby which is in line with other Slovenian empirical studies (e.g. Kolarič & Črnak Meglič 2008). This question, although not statistically significant explanatory factor in the willingness to pay, is as expected positively associated with the WTP, though again in a very weak manner.

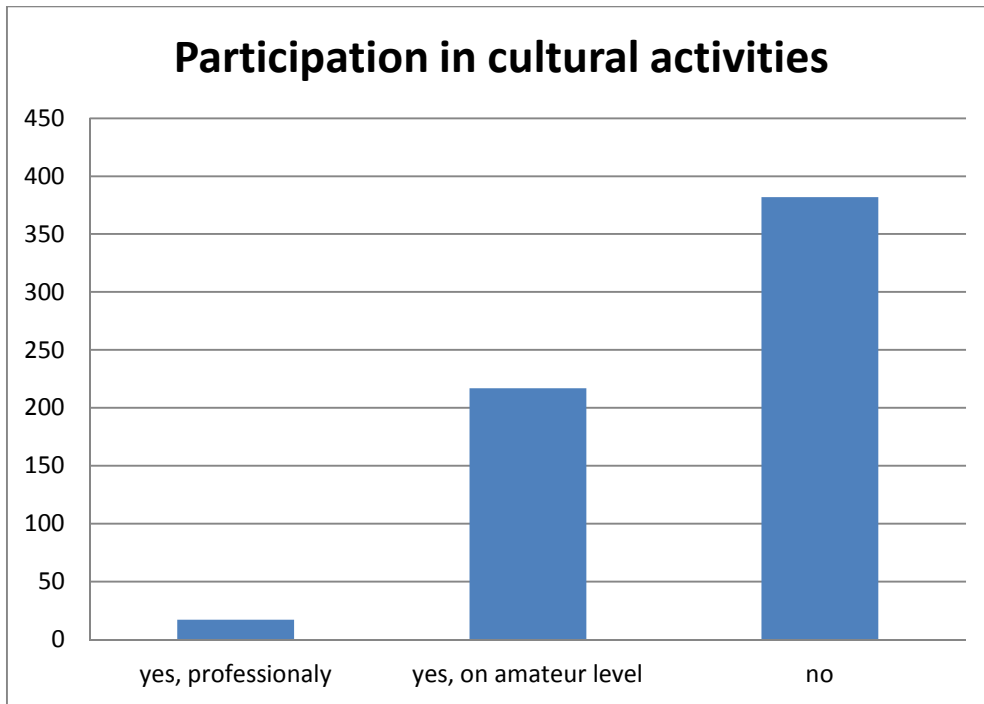


Figure 7: Answers to questions about participation in culture (source: own calculations)

The majority of respondents agreed that culture brings many benefits, in all matters the agreement is over 80% (sometimes even more than 90%) of respondents. The least benefit the respondents see are the economic benefits of culture, while almost all consider culture to bear significant value for the visibility of the site and opportunities for socializing.

Benefits that a culture has, have emerged as a statistically significant explanatory factor for predicting the willingness to pay, especially when we combined it into a single variable (six values for the individual questions). Among the individual components the willingness to pay was most strongly associated with economic benefits, a beautiful environment by creating a culture of the people and movements that can lead to thinking.

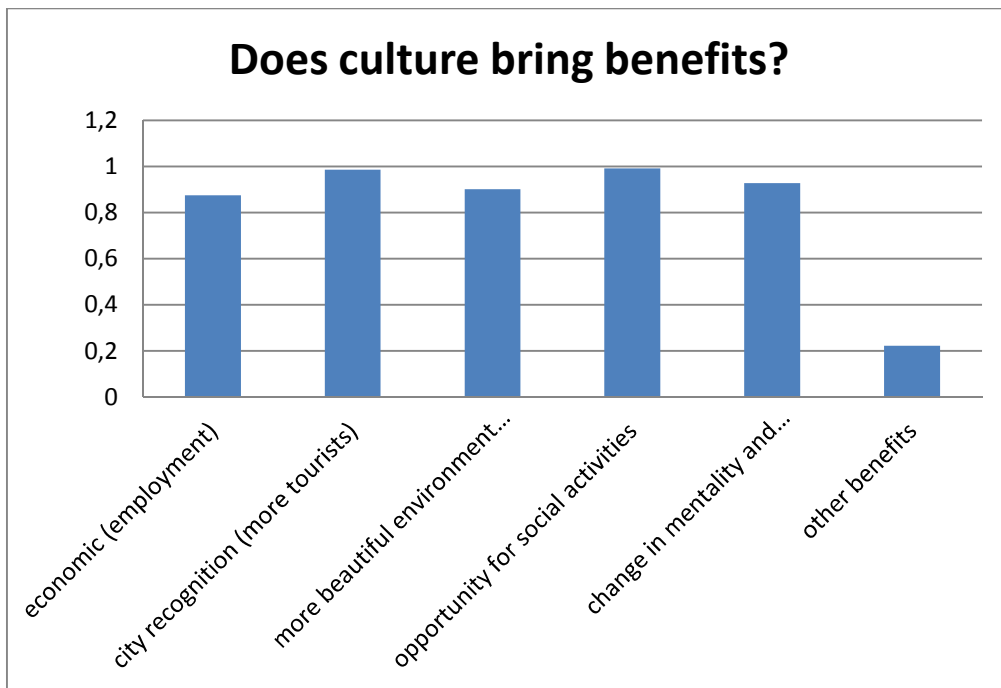


Figure 8: Answers to questions about the "benefits" of culture (source: own calculations)

Also of interest are answers to questions about knowledge and attending events of ECoC 2012. Respondents most often heard of the events of the project Urban Furrows and LifeTouch (over 80% of respondents have heard of these events). However, the largest proportion of those who know some events, they also attended the event (red bars in the graph) of Terminal 12, Lifetouch, and a variety of conferences, lectures and conversations. Of note is also that very few had ever heard of the concerts in framework of Festival Maribor and in the framework of Keys to the city (which has been primarily intended for Maribor citizens, so perhaps this is not surprising).

Despite the fact that some correlations are slightly higher than for some other issues, none of the variables involved in this question was found as statistically significant explanatory factor of WTP.

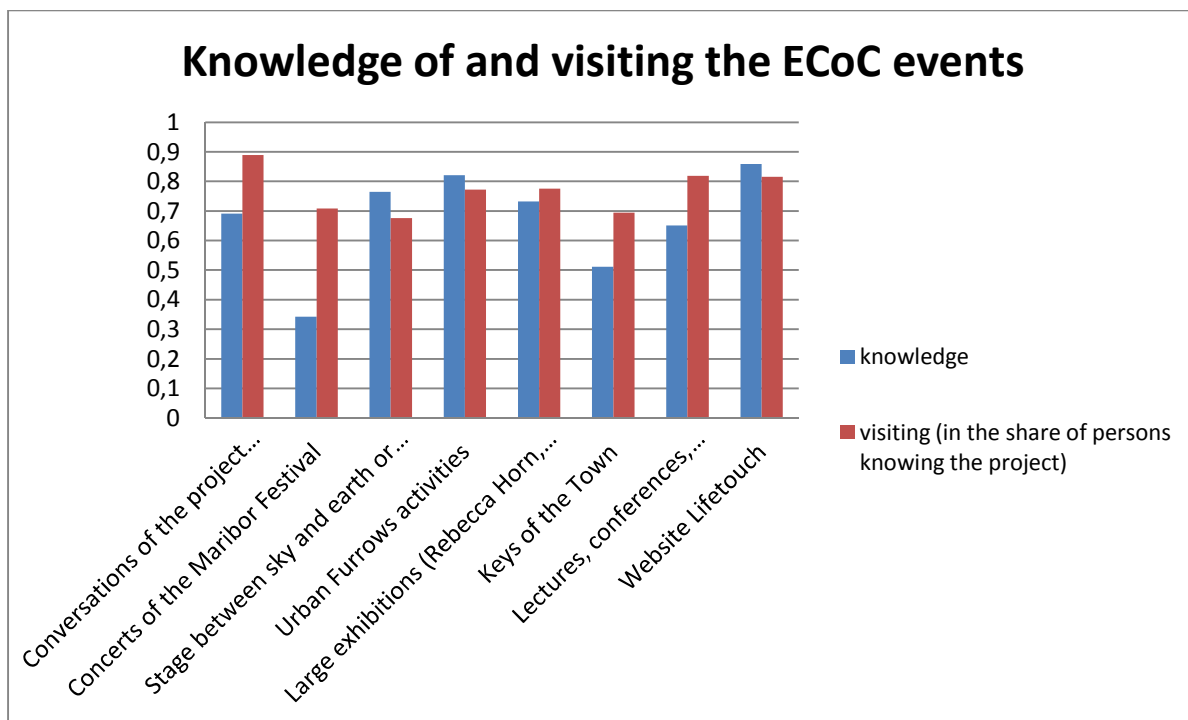


Figure 9: Answers to questions about knowledge and attending the events of ECoC 2012 (source: own calculations)

The last two issues of the first set of questions were asked about their knowledge of and attitudes towards ECoC 2012 project in general. A bit more than 12% of the respondents have not yet heard of the project.

Among those who have heard of the project, more than 80% of the project were either happy or very happy with it. Just over 2% (13 respondents) stated that they were not happy about the project while the rest didn't care for the project anyway.

As expected these two variables had positive correlation with the willingness to pay, which is again slightly stronger than in other questions. Nevertheless, this factor did not show up as a statistically significant explanatory factor of WTP.

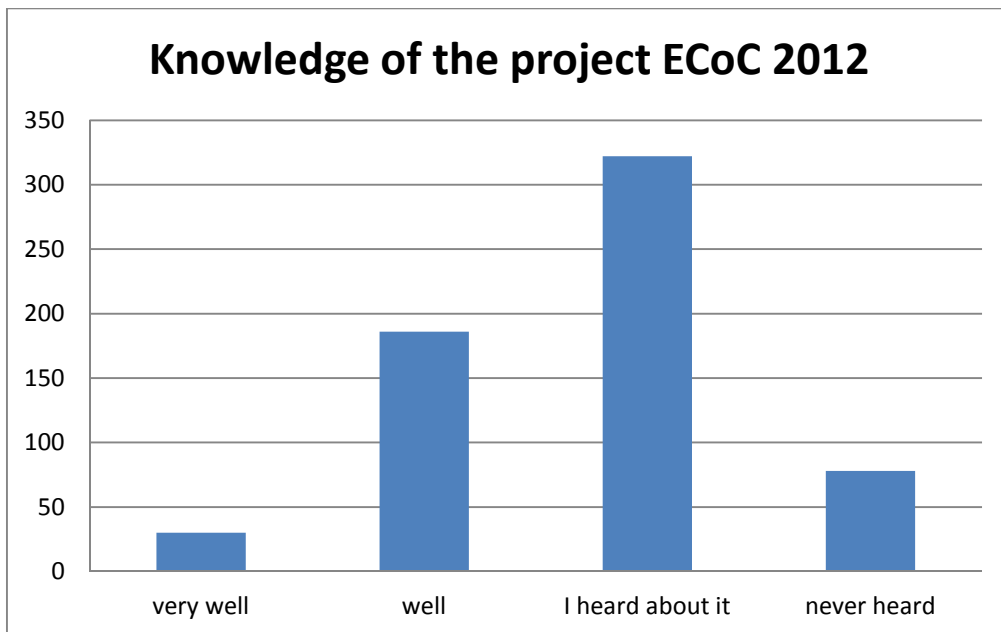


Figure 10: Answers to the question on knowledge of the ECoC 2012 project in general (source: own calculations)

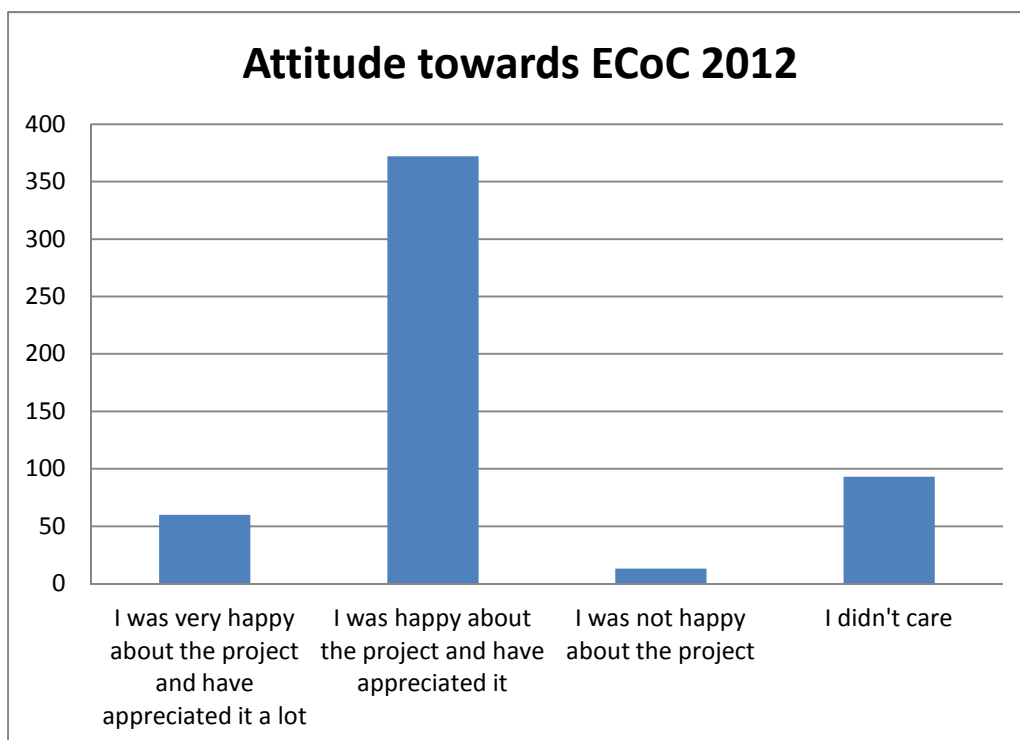


Figure 11: Answers to the question about the relationship of the ECoC 2012 project in general (source: own calculations)

In the last part of contingent valuation analysis we made the assessment of the stated and true value of willingness to pay. We followed the analysis by similar devices as used by Hadker and colleagues (1997), Verbič and Slabe Erker (2005) and Srakar (2010).

Assessment of the stated willingness to pay may be obtained from the responses on the question on the maximum value of the willingness to pay. The latter amounts to 14.04 euros for the whole Slovenian population. The table below presents an analysis of the factors of willingness to pay, which was re-done by OLS regression methods and Tobit (again we are dealing with censored variable).

As important factors in explaining the statistical value of the willingness to pay were proved: interest in the culture, where each additional unit of interest increased the willingness to pay on average by 6.76 EUR; the attitude that "Now, in times of crisis is not the time for waste of money for culture" where each additional unit of agreement with this view reduced the value of willingness to pay by 4.28 EUR; combined variable on the benefits, where any further benefit point increased the utility value of the willingness to pay by 8.64 EUR, and the variables of education and income. Because despite the warnings of economic theory model showed no multicollinearity between those two variables in the final model, we included both variables, the tests that we have conducted didn't show any significant progress in eliminating one of the two. Each higher score on a scale of education, on average, increased the value of the willingness to pay by 7.64 EUR, while each higher score on a scale of income increased it by 5.56 EUR.

Tobit model is in all the statistics in this case a significantly better assessment model, so for the analysis we take mostly the values from the last, fourth column of Table 23.

Factors for predicting "observed" willingness pay	OLS		OLS, only significant predictors			Tobit		Tobit, only significant predictors				
	Coefficient	t ratio	Coefficient	t ratio		Coefficient	z	Coefficient	z			
Const	4,06207	0,3874	-5,19001	-1,3762		-18,6588	-0,9383	-27,6707	-2,7796	***		
dum_partner_cities	-0,311676	-0,1229				-4,08445	-1,1355					
interest_cult	4,98825	2,1172	**	3,76322	2,686	***	8,42152	2,2502	**	6,75666	2,6312	***
knowl_cult_joint	-1,23105	-1,7044	*				-2,12981	-1,7418	*			
att1	1,40487	1,3416					2,72277	1,3291				
att2	1,21726	1,1105					2,72388	1,3466				
att3	-3,68013	-1,9972	**	-2,28782	-3,0633	**	-6,2955	-2,1643	**	-4,28187	-2,6766	***
att4	0,956819	0,4872					1,2992	0,4873				
att5	0,24706	0,207					0,843131	0,4482				
att6	3,11428	1,4066					3,97481	1,3327				
providingcult	0,289974	0,2565					-0,573703	-0,2458				
providingother	0,298724	0,1149					-1,87651	-0,4497				
particip	-3,14585	-1,3897					-4,05342	-1,1731				
usejoint	-3,84104	-2,1994	**	-3,84569	-2,5669	***	-8,1701	-2,3503	**	-8,64456	-2,6291	***
eventsjoint	0,382393	0,4775					1,56504	1,4791				
knowl_ecoc	-0,0624537	-0,0309					0,446138	0,1388				
gender	-2,22217	-0,7497					-3,76113	-0,8898				
age	-0,22781	-1,6309					-0,31704	-1,5926				
numreshoush	-1,14411	-1,4749					-0,367848	-0,2863				
employ	1,10885	1,4707					1,38271	1,1517				
educ	4,7858	2,5349	**	4,37051	2,7043	***	8,06291	2,546	**	7,64402	2,6779	***
income	5,66864	3,7053	***	4,45868	5,2044	***	7,03099	2,9166	***	5,55952	3,3402	***
Mean dependent var	14,04261			14,04261			Chi-square	53,01152		20,90648		
S.D. dependent var	32,24813			32,24813			p-value	0,000137		0,000844		
Sum squared resid	550693,6			568035,9			Log-Likelihood	-1993,115		-2003,602		
S.E. of regression	30,44821			30,51568			Akaike	4032,231		4021,205		
R-squared	0,138955			0,111839			Schwartz	4133,965		4052,168		
Adjusted R-squared	0,108514			0,104559			Hannan-Quinn	4071,787		4033,244		
F(6, 136)	3,584688			6,393602								
P-value(F)	1,68E-07			8,42E-06								
Log-likelihood	-2967,138			-2976,688								
Akaike criterion	5978,275			5965,375								
Schwarz criterion	6075,587			5991,915								
Hannan-Quinn	6016,112			5975,694								

Table 23: Explanatory factors of “observed” willingness to pay (Source: own calculations)

In a similar way, as Verbič and Slabe Erker we may take into account the effect of anchoring. The latter indicates a bias with which we meet whenever we are dealing with issues of dichotomous choice when the respondent is set a specific amount which thus affects the amount of his willingness to pay, as it offers an "anchor" which tends to bias his otherwise “freely floating” willingness to pay.

To assess the value of willingness to pay considering the effect of anchoring we estimated the adapted model, where we estimated the value of willingness to pay with the independent variable instead of income being the initial value of willingness to pay. Within such a modified model (because the new variable is perfectly correlated with income it is also highly statistically significant) we have set the initial amount of the variable to 0, to obtain the value of willingness to pay respondents would have had if we did not provide them any information about initial amount. Such a value of willingness to pay is 10.89 EUR and amounts to 77.54% of the previous average value of WTP.

What has remained for us is the calculation of the true value of willingness to pay. The latter, in accordance with the findings of Haab and McConnell (2002) can be obtained from the equation:

$$\mu_{WTP} = -\frac{\beta_0}{\beta_1} \quad (2)$$

where β_0 and β_1 are the regression constant and regression coefficient of the explanatory variables on the response of the bid amount of WTP in bivariate probit regression model. For the explanatory variables in the bivariate probit model we can take the initial and subsequent bid amount in the dichotomous part of the willingness to pay questions.

The table below shows the results of this regression. Variables used in the calculation are bidosn and biddruga as response variables to the bid amount of willingness to pay in the first and second dichotomous choice question, and zacznies and nadznies as initial and follow-up payment offered to respondent.

Determination of "true" willingness to pay	Bivariate Probit				
	Coefficient	Std. Error	z	p-value	
bidosn					
Const	-0,470312	0,202234	-2,3256	0,02004	**
zacznies	0,034087	0,0167858	2,0307	0,04228	**
biddruga					
Const	-0,685532	0,0992786	-6,9051	<0,00001	***
nadznies	0,0106039	0,00545108	1,9453	0,05174	*
Log-likelihood	-771,1293				
Akaike criterion	1574,375				
Schwarz criterion	1552,259				
Hannan-Quinn	1560,858				
rho	0,440294		***		

Table 24: Calculation of the true value of the willingness to pay (source: own calculations)

From the table we can see that we get two values – first, when the initial amount is 13.80 EUR, and second, when the follow-up sum amounts to 64.65 EUR. According to the theory, and because the value of the coefficient in the follow-up amount WTP is only weakly statistically significant, it seems proper to opt for a conservative value, so we can conclude that our true willingness to pay amount to EUR 13.80 per person.

From the table can also be seen that the coefficient rho, indicating the correlation of the two probit equation is positive and statistically highly significant, which means that we gained efficiency by evaluating bivariate instead of the usual probit model.

Since Slovenia according to data from January 2013 had 1.702.152 inhabitants aged 18 years or more, it can be concluded that the aggregate value of the willingness to pay for the continuation of the ECoC in 2013-2015 on an annual basis equals to 23,489,697.60 EUR. Taking into account the annual discount rate of 3% this value in 2014 amounted to 22,785,006.67 EUR and 22,101,456.47 EUR in 2015. The total three-year value of willingness to pay for the continuation of the ECoC (the reorganization and reduction of the activity to 20% of present value), on three-year level is therefore estimated to be 68,376,160.74 EUR.

6. Conclusion

In the article we presented a thorough although still preliminary analysis of economic effects of the project Maribor 2012. The results show that there exist significant differences in ex-ante multiplier analysis and ex-post econometric verification results. Although the results are still preliminary they show that the revenues effect is smaller than predicted, while the employment effect is large but in the opposite, negative direction. Whether this can be attributed to estimated raise in the average wages is still to be estimated in the follow-up studies. Yet it gives sufficient indication to confirm doubts about the validity of multiplier based analyses. The results also confirm that the main value of the project is probably to be attributed to the effect on preferences of individuals and therefore best estimated by contingent valuation methodology.

The estimation of economic effects of cultural events is a topic that stirred a lot of debates in cultural economics. Economic impact studies, measuring the short-run spending impact are the tool still used the most, despite being done mostly by »arts people« and not »arts economists« (Frey 2005). The answer that was most commonly provided so far for estimation of economic effects of cultural events in cultural economics has been contingent valuation. While this method has better credibility in the academic circles (although with fierce critiques of its own from some notable economists, e.g. Diamond & Hausman 1994) and is a commonly and officially accepted tool to estimate the passive-use (or non-use) dimension of a certain damage to environment in environmental economics, it doesn't answer three most basic questions about economic effects: were the effects of an event (after the event) on new employment, income, value added and tax revenues really there? What were the levels of such effects? And finally, what are the characteristics that most influenced the economic effect of a given cultural event in positive and negative manner?

To our opinion, the answer to the methodological dilemma is very simple, while not frequently discussed in cultural economics. Instead of performing economic impact studies, which are evidently misplaced and bring controversial results, and contingent valuation studies, which answer the inappropriate questions and suffer from numerous critiques of their own, one can perform ex-post econometric verification to get much more credible numbers

about economic effects of a cultural event. Such studies are frequently done in sports' economics while almost never finding a response in cultural economics. This method has many advantages: it is done ex-post and therefore measures the effect that »is really there«. Due to usage of statistical data measured under common methodologies the results can be compared across studies. Furthermore this method is likely to be much more feasible to perform for many cultural organizations than e.g. contingent valuation studies. Finally, it can be used to study the characteristics that influence the (economic) success of a certain cultural event and by that to gain knowledge both for the »arts economists« as well as the »arts people« even before deciding for a certain cultural event in future.

To our opinion the present debate on estimation of economic effects of cultural events is therefore misfocused and doesn't proceed in the path of solving even the most basic questions. We still don't know whether cultural events really have the economic effects widely proclaimed in some »arts people« studies (e.g. KEA 2006; Americans for the Arts 2011). We claim that the reason for the flourishing of such studies is exactly the misplaced debate in cultural economics and impotence in answering the most basic questions. We strongly believe that the ex-post verification methodology is an important, if not the key step forward in addressing such problems. Nevertheless, some sort of »triangulation« of methods (using economic impact ex-ante methodology, ex-post verification studies and contingent valuation) would perhaps be best capable of providing the answers to required questions at present.

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