

# **DIRECT EXPENDITURE EFFECTS OF THE RAINFOREST WORLD MUSIC FESTIVAL 2009 IN SANTUBONG, SARAWAK**

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## **ABSTRACT**

An economic impact analysis of a tourism activity could indicate the losses in benefits to the area if the activity were not to take place in the area. The potential losses are equated to the total amount of associated expenditures of visitors spending in the area. An ex post assessment is carried out to measure the impacts of visitors expenditure in a tourism activity, the 3-day Rain Forest World Music Festival 2009 (RFWMF2009) in Santubong, Sarawak. On site data on all associated expenditures spent in the area during the festival were collected from a sample of the visitors. The results show that 34%, 18% and 48 % of the visitors have participated in 1, 2 and 3 days in the festival, respectively. The average total expenditure of per participant is about RM334 per day. A simplified Money Generation Model (MGM) is used to derive the direct economic benefits of the RFWMF2009. The festival has created RM7.4 mil in total sales, 117 new jobs and RM3.3 mil in income to the region. The local authority has received RM0.69 mil in total tax revenue. The impacts are estimates of losses that would have resulted if the festival has not taken place.

**Keywords:** Input-Output, Participation, Transportation, Accommodation, Souvenir, Food, Culture

## **1. INTRODUCTION**

Impacts to the communities surrounding a location in which tourism activities are undertaken may take several forms. The changes in economic activity that are generated can be evaluated in several ways. Changes in sales (or spending), changes in regional income, and changes in employment are among the common methods of measuring the impacts. When visitors spend

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within the local area, the expenditure becomes sales or receipts for local businesses or other organizations selling products and services to visitors. Income is the sum of wage and salaries accruing to workers in these businesses and proprietor's income and profits. The impact on employment is measured by the number of jobs supported by the given level of sales, these include part time and seasonal jobs. However, income or value added (that includes income and indirect business taxes) are the preferred measures of the contribution of recreation and tourism to a region's economy (Janke and Deller, 1996).

For recreation and tourism, the action for which impacts are estimated may be the opening or closing of a facility, or more generally some change in the quantity or quality of facilities or marketing efforts that would alter the number of visitors, types of visitors and spending in the local area, for example, the Sepang F1 Motor Racing, the Commonwealth Games in 1998, the Annual World Jazz Festival, etc. As with any impact analysis, the focus is on the estimate of the changes with vs without the action, not just before vs after. Thus the estimate of the increase or decrease in visitors that result from the action becomes the element of the impact analysis. The impacts in this case can be interpreted as the loss in economic activity to the region if all of these visits and the associated spending did not occur in the region.

The RFWMF is an annual event organized by the Sarawak Tourism Board, this event is organized in Santubong which is located about 25 km from the city centre within the City of Kuching. During the three day festival, various programs and activities are organized for the participants. These include cultural and traditional music workshops during the daytime, traditional music performances, by individuals and groups from various parts of the world, during the night time, and sales of local products and souvenirs.

The main purpose of the study is to determine the economic impacts of the RFWMF in terms of income, employment and tax revenue from visitors spending at the festival. The study will also analyze the characteristics of the festival participants and their spending patterns on the facilities and services during the three day festival.

## 2. IMPACT ANALYSIS: THE INPUT-OUTPUT MODEL

Input-output based models are the most widely accepted approaches to estimate the impacts of economic activities within a region. An input-output model represents the flows of economic activities within a region. Essentially it reflects what each business or sector has to purchase from every other sector in order to produce a ringgit's worth of goods or services. The model traces the flows of economic activity associated with any change in spending that could have a forward effect (spending generating income which induces further spending) or a backward effect (visitor purchases of meals leads restaurants to purchase additional inputs -- groceries, utilities, etc.). By tracing these linkages between sectors, input-output models can estimate *secondary effects* of visitor spending, often captured in the form of *multipliers* (Rickman and Schwer, 1995).

*Secondary effects* of visitor spending are of two types: *indirect and induced*. Indirect effects are the changes in sales, income or jobs in sectors within the region that supply goods and services

to the recreation/tourism sectors. When there is an increase in the number of restaurant sales because of increase in expenditure by tourists, firms that supply fresh food will also increase in sales, this is an example of an indirect effect of visitor spending. Induced effects are the increased sales within the region from household spending of the income earned in the tourism and supporting sectors. Restaurant, hotel or transportation employees spend the income they earn from tourists on housing, utilities, groceries, etc. These represent induced effects of the visitor spending.

*Multipliers* capture the size of the secondary effects, usually expressed as a ratio of total effects to direct effects (Archer, 1977). Total effects are direct effects plus the secondary (indirect plus induced) effects. A sales multiplier of 1.5, for example, means that for every ringgit received directly from a visitor, another 50 cents in sales is created within the region through indirect or induced effects (Fletcher and Archer, 1991). The concept of multipliers must be understood and applied with the context of the input-output models from which they are derived. The visitor spending will not usually be captured in total because there will be some leakages. If the tourist area has to import goods to be sold to the tourists, then the amount of leakages will commensurate with the size of the imports. Thus the concept of capture rate has to be included in the measure of the impact of visitor spending. The capture rate measures the portion of visitor spending that accrues to the region as final demand.

A sales multiplier is used to obtain the total change in sales which includes direct, indirect, and induced effects; the total sales effect is obtained by multiplying the sales multiplier to a change in final demand within the region. The final demand accruing to the region depends on the size of leakages. For goods that are manufactured outside of the region, only the retail margin and perhaps some portion of the wholesale and transportation margins appear as final demand for the region. The cost (producer price) to the retailer or wholesaler of the good itself leaks immediately out of the region's economy. Only the spending that is "captured" by the local economy should be multiplied by a sales multiplier (Fletcher and Archer, 1991).

Besides sales multipliers, one can also produce income and employment multipliers. There are two quite distinct kinds of income and employment multipliers (Murray, 1993). Ratio type multipliers like the sales multiplier, are simply the ratio of total income (or jobs) to the direct income (or jobs). These multipliers should be multiplied by the direct income or jobs to yield a total. Keynesian income or employment multipliers (also called response coefficients) are ratios of total income (or jobs) to direct sales. Keynesian multipliers estimated from an input-output model must be adjusted by the capture rate before multiplying them times visitor spending (Fletcher and Archer, 1991).

Impact analysis should be distinguished from significance analysis. An impact analysis only includes spending by visitors who reside outside of the local region. Their spending constitutes "new ringgit" to the region. In a significance analysis the effects of spending by all visitors, both those who reside in the local area and those who do not are measured. Chabra, et al., (2003) suggest that significance analysis should generally not be interpreted as an estimate of the loss to the local region if the project/program were closed, since much of the spending by local residents would likely stay within the region, but perhaps be shifted to other sectors.

The significance analysis is better seen as a measure of the importance or significance of the project/program (rather than impacts) within the local economy as it shows the size and nature of economic activity associated with recreation/tourism activity in the area.

Visitors from outside the local area, would presumably not come to a region if the recreation and tourism opportunities were not available. Hence, all of the spending on these trips would be lost to the region (Johnson, 1993). Tourism impact assessments generally exclude spending by residents of the local area, if they can be separated out. In assessing impacts of visitors to a particular facility or event, this is not always possible. Seasonal residents pose some unique problems as they may be treated as local residents in some situations and outside visitors in others.

Stynes (1992) suggests that the basic procedure in measuring the economic impact is quite simple. The procedure requires several steps:

- (1) estimate the change in the number and types of visitors associated with the policy or action being evaluated. Visits are translated into economic terms by estimating the amount of spending by these visitors in the local area.
- (2) the spending can then be applied to a model of the region's economy to estimate the effects in terms of sales, income and jobs. Regional economic multipliers are used to estimate the secondary effects of visitor spending. Formally,

$$\text{Economic impact} = \text{Number of Visitors} * \text{Average spending per visitor} * \text{Multiplier}$$

This simple model is usually elaborated further by:

- (1) dividing visitors into distinct segments with different spending patterns (e.g. campers, day users, visitors in motels)
- (2) measuring spending in distinct spending categories (e.g. lodging, restaurant meals, gas, groceries)
- (3) allocating spending into the economic sectors that receive it and applying economic ratios and multipliers for those sectors

### **3. METHODOLOGY**

Data for the study is obtained through on site survey of the participants; structured questionnaire is distributed to the participants who have been intercept-selected at convenience in the festival ground. The survey is carried out on each day of the festival to ensure that sufficient number of participants have used the services and facilities to enable them to indicate their expenditure patterns on the services and facilities at the site. A total 380 questionnaires are distributed during the three day festival; the usable questionnaires after discarding those with incomplete answers and those answered by "local" visitors amount to 300. Only one member of the visiting party is taken as the sampling unit in order to avoid redundancies and double counting.

In this study the Money Generation Model (MGM) is used to estimate the impacts that visitors have on the local economy in terms of their contribution to sales, income and jobs in the area (Hornback, 1995). The Money Generation Model produces quantifiable measures of economic benefits that can be used for planning, concessions management, budget justifications, policy analysis and marketing. Stynes and Propst (2001) have made several improvements to the original MGM model and it is now applicable in evaluating management, policy and marketing alternatives, both inside and outside the park. In terms of business development, information produced from an economic impact analysis are helpful in fostering partnerships within the community and garnering support for tourism policies and interests. The economic analysis also helps to identify the roles that park, local community and tourism businesses could play in attracting and serving visitors (Stynes and Propst, 2001).

## 4. RESULTS

### 4.1. Descriptive Analysis

The general profile of respondents is summarized in Table 1. The proportion of male participants is marginally higher than the female participants, The age distribution shows a relatively young group of participants with 48% being 21 – 30 years old, and 21.7% are aged between 31 – 40 years old. About 12.6% are aged 51; those younger than 20 years (8.0%) are made up mainly of university and college students.

**Table 1: Visitors Profiles**

	Percent
<b>Gender</b>	
Male	51.3
Female	48.7
<b>Age</b>	
Less than 20	8.0
21 - 30	48.0
31 - 40	21.7
41 - 50	9.7
51 - 60	9.3
More than 61	3.3
<b>Income level</b>	
Less than 10,000.00	1.0
10,001.00 – 35,000.00	6.7
35,001.00 – 60,000.00	10.7
60,001.00 – 85,000.00	6.0
85,001.00 – 110,000.00	4.0
More than 110,001.00	22.3
Non response	49.3

Income being a rather sensitive issue to many individuals, especially among domestic visitors, only 50.7% of the sample have responded to the income question. Most respondents (22.3%) indicate a personal annual income of more than RM110,000.00 (the higher income distribution may be highly correlated to the higher exchange rates of foreign currencies to Malaysian Ringgit).

Participation in festivals such as the musical events would be more exciting in groups of friend or with family members; this is obvious when only 10% of the respondents indicate coming alone to the festival; coming with friends is the most common visit characteristic of the respondents (Table 2). The music festival is a three day event, and the majority of the participants (51.1%) have indicated attending the whole three days. The day time programs (workshops, seminars, cultural activities) in the festival have been scheduled to allow maximum participation among the visitors, while the traditional music presentations fill up the night time entertainment. The organizer of the festival provides sufficient transportation facilities to allow participants to stay in Kuching city since more accommodation facilities are available in the city; 75.7% of the participants have chosen to stay in Kuching city.

**Table 2:** Participation Characteristic

	Percent
<i>Accompaniment</i>	
Spouse	17.3
Family members	9.3
Friends	47.3
Family members and friends	10.0
Alone	16.0
<i>Number of days attending festival</i>	
1	33.9
2	15.0
3	51.1

The visitors spending patterns during the 3 day festival is shown in Table 3. The biggest proportion of the festival participants (45.7%) have indicated spending the most on the last day of the festival, while 33.3% have spent more on the first day compared to 21.0% on the second day. As mentioned earlier, in the city of Kuching, lodging facilities are more available and one can also find more varieties of accommodation facilities at more reasonable rates. About 82.0% of the respondents have spent less than RM500.00 for lodging expenditure compared to only 1.3% who has spent more than RM2,001.00 for lodging during festival period.

**Table 3:** Expenditure Patterns at the festival

	<b>Percent</b>
<b><i>Expenditure on lodging</i></b>	
Less than 500.00	82.0
501.00 – 1,000.00	11.3
1,001.00 – 1,500.00	2.7
1,501.00 – 2,000.00	2.7
More than 2,001.0	1.3
<b><i>Expenditure on food and beverages</i></b>	
Less than 100.00	48.7
100.01 - 350.00	33.7
350.01 - 600.00	9.0
600.01 - 850.00	6.3
850.01 – 1,100.00	2.0
More than 1,100.01	0.3
<b><i>Expenditure on local transportation</i></b>	
Less than 100.00	92.3
101.00 - 200.00	3.7
201.00 - 300.00	1.7
301.00 - 400.00	1.0
401.00 - 500.00	1.0
More than 501.00+	0.3
<b><i>Expenditure on entrance fees</i></b>	
Less than 100.00	25.3
101.00 - 600.00	69.3
601.00 – 1,100.00	3.0
1,101.00 – 1,600.00	2.0
More than 1,601.00	0.3
<b><i>Total Expenditure during festival</i></b>	
Less than 500.00	92.3
500.01 – 1,500.00	3.7
1,500.01 – 2,500.00	1.7
2,500.01 – 3,500.00	1.0
3,500.01 – 4,500.00	1.0
More than 4,500.01	0.3

On food and beverages, more of the visitors (48.7%) have spent less than RM100.00 in total, although those spending between RM101 – RM350 are quite substantial (33.7%). The participants of the festival have to use the food and beverages facilities catered within the festival village; no outside food or beverages are allowed into the village. Transportation wise, for those visitors who stay in the city, the organizers have provided buses to transport them to and fro the festival at various pick up points; they pay a minimum fee. Some of the visitors also use rental cars as well as taxis to move around during the festival period.

Price of tickets to the festival may vary depending on whether bookings are made early, as far as 6 months in advance, and discounted rates are given to school children and to senior citizens. As the tickets could be purchased on-line, the majority of the visitors has done so and have gotten discounts for the tickets. Day ticket would cost RM90 per person, but special promotions for three days pass cost RM250.00 per person. 69.3% of the respondents have spent a total of between RM101.00 – RM600.00 for the entrance fees. A further analysis has shown that about 23.3% of the respondents in this category have spent between RM501 – RM600 on total entrance fees.

#### **4.2. Direct Economic Impacts of the RFWMF2009**

The 2009 RFWMF have been organized in the Sarawak Culture Village for 3 days, whereby 21,000 visitors from all over the world converged to the village to participate in the festival (Sarawak Tourism Board, 2010).

**Table 4:** Summary of the Economic Impact of RFWMF using the Money Generation Model

##### **A. Sales Benefits from Festival**

1. Number of visitors to festival (based on party size in visitor survey)	
(i) 1 day visit	381
(ii) 2 day visit	168
(iii) 3 day visit	574
2. Total expenditure of party size according to days of visit	
(i) 1 day visitors	RM86,308
(ii) 2 day visit	RM53,447
(iii) 3 day visit	RM264,903
3. Average expenditure per day per person	RM334.4
5. Total number of visitors to the festival	21,000
6. Estimated non local visitors to festival	96%
7. Total Visitor Spending	RM6,733,440
8. Estimated capture rate	85%
9. Sales multiplier (Type II)	1.3
10. Total Sales Effects	RM7,440,451



**Table 4:** Summary of the Economic Impact of RFWMF using the Money Generation Model (*cont.*)

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<b>B. Tax Revenue Benefits from Festival</b>	
1. Sales tax collection from festival (5% local tax)	RM372,022
2. Income Tax Revenue (30% sale to tax ratio and 12% local tax)	RM267,856
3. Total Tax Revenue	RM639,878
<b>C. Income and Job benefits from Festival</b>	
1. Total Employment Effects	RM7,440,451 x 15 jobs/mil RM sales = 117
2. Total Income Effects (income to sale ratio of 45%)	RM7,440,451 x 0.45 = RM3,348,203

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Table 4 gives the summary of the economic impacts of the visitors expenditure during the 3 day festival. (the calculation of the impacts using the MGM is shown in Appendix 1). The visitors have spent during the festival an average amount of RM334 per visitor party. This expenditure include expenses on food and beverages, entrance fees, souvenirs, transportation and lodging with the total spending amounting to RM6.73 mil. Eighty-five percent of the visitors expenditure have been captured as the final demand in the Santubong/Kuching region for the local benefits. Each RM of direct sales to the participants has added about RM0.30 to the local economy through the secondary effects (mostly induced effect). The festival has generated a total sales effects of RM7.44 mil. The regional economy has benefited in the amount of RM0.63 mil of tax revenue from a total income of RM3.35 mil for the three day festival. The organization of the music festival in the Santubong has supported 117 jobs to the local population.

## 5. DISCUSSIONS and CONCLUSIONS

The impacts of the RFWMF 2009 are calculated in the form of total sales, tax revenues and total income to the local government, and job created in the area. The impacts are based on the actual expenditure of the visitors during the three day festival. Like many tourism impact studies, the festival doesn't explicitly identify an action being evaluated. The study measures economic activity associated with visits to the festival by assuming that any trip to the festival should be counted as a festival impact. This implicitly assumes that none of the spending by festival visitors would have occurred in the absence of the festival. As the festival is organized at the Cultural Village, some visitors and spending would have occurred in the absence of the festival. Nonetheless, the MGM model framework could be applied to evaluate a specific policy action including the change in visitors and spending due to the organization of the festival.

A study on the economic impact analysis measures benefits to the region, not the benefits to the visitors themselves. As a tool, an economic impact analysis allows policies and programs established by the relevant authority to bring in visitors to the region to be evaluated based

on the contributions of the visitors expenditures to the region's economy. In order to make the analysis useful it is necessary to specify the region for which impacts are desired. By defining the region to be included in the analysis, it allows the visitors to be categorized into local visitors or tourists, which spending should be included (only expenses made within the study region), and which primary and secondary effects should be counted (sales of businesses within the study region).

The calculation of the economic impact should be done cautiously because the impact on a region may result in erroneous indicators if the multipliers to be used to determine the linkages are taken directly from secondary sources or previous studies and applied to new situations without a good understanding of what they represent and how they should be used. The common mistakes made include applying statewide multipliers to local regions, and applying ratio type sales multipliers to visitor spending. On the other hand, given the size of the region under study and the unavailability of local regional multipliers, an adjustment has to be made on the available size of the multiplier based on existing similarities of the economic characteristics of the region.

The expenditure made by the visitors is not captured totally in the local economy. Depending on the size and the ability of the region to produce goods locally, the effects of a ringgit spent by the tourist may be small to the local economy if the goods used by the visitors have to be imported. The size of leakages due to imports of the goods influences the multipliers. A crucial error that has usually been overlooked happens when total retail spending is included instead of taking the retail margins only and omitting the producer prices of goods that are not made locally, in the estimation of the effects. Local impacts will be reduced greatly if the goods that tourists purchase are not locally made.

The RFWMF 2009 in Santubong, Kuching which is organized for three days has generated a total sales effect of RM7.44 mil. The total income to the regional economy is estimated at RM3.35 mil and the region has benefited in the amount of RM0.63 mil in the form of tax revenue from the three day festival. It is also shown that the organization of the music festival in Santubong has created 117 full time and part time jobs to the local population.

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## APPENDIX

Appendix 1: Calculation of Economic Impact of RFWMF2009 using the Money Generation Model

<b>A. Sales Benefits from Festival</b>		
1. Total number of visitors	21000	
2. Number of non-local percent of festival visitors	96%	
3. Total number of visitors to festival (based on party size)		
(i) 1 day visit	381	
(ii) 2 day visit	168	
(iii) 3 day visit	574	
4. Total expenditure of party size according to days of visit		
(i) 1 day visitors	RM86,308	
(ii) 2 day visit	RM53,447	
(iii) 3 day visit	RM264,903	
5. Average expenditure per day per person		
(i) 1 day visitors		RM86308/381 = RM226.50
(ii) 2 day visitors		RM53447/168 = RM318.10
(iii) 3 day visitors		RM264903/574 = RM461.50
6. Average total expenditure for visitors to festival		[226.5+318.1+461.5]/3 = RM334.4
7. Total Visitor Spending (TVS)		21000 x 0.96 x RM334.4 = RM 6,733,440
8. Estimated capture rate (ECR)		85%
9. Sales multiplier (Type II) (SM(TII))		Portion of visitor spending that accrues to the region as final demand
10. Total Sales Effects (TSE)		1.3 TVS x ECR x SM(TII) RM6733440 x 0.85 x 1.3 = RM 7,440,451
<b>B. Tax Revenue Benefits from Festival (TRB)</b>		
1. Total sales (TS)		RM 7,440,451
2. State and local retail sales tax (SRT)		5%
3. Sales tax collection from festival (STC)		TS x SRT 30% RM7,440,451 x 0.05 = RM 372,023
4. Sales to Income ratio (S:IR)		12%
5. State and local income tax rate (SLIT)		TS x (S:IR) x SLIT
6. Income Tax Revenue (ITR)		STC + ITR RM7,440,451 x 0.3 x 0.12 = RM267,856 RM372023 + RM267856 = RM639,879
7. Total Tax Revenue (TTR)		
<b>C. Income and Job benefits from festival</b>		
1. Total Sales (TS)		RM2,992,582
2. Estimated Job to Sales ratio (J:SR)		15 jobs per mil RM sales
3. Estimated Income to sales ratio (I:S)		45%
4. Total Employment Effects (TEE)		TS x (J:SR)
5. Total Income Effects (TIE)		TS x (I:SR) RM7,440,451 x 15 jobs/mil RM sales = 117 RM7,440,451 x 0.45 = RM3,348,202

Source: Stynes, and Propst. (2001)