Expenditure of National Games Contingents: Economic Impact on the Local Economy of Negros Oriental, Philippines

Ester V. Tan, Craig N. Refugio, Carlou G. Bernaldez

ABSTRACT

This study estimated the multiplier effects of initial spending from contingents to a national sporting event, the Palarong Pambansa 2013, which generated a series of re-spending at the host local economy. Contingents were segmented into four groups - athletes, coaches, officiating - technical officials, and support staff - in order to establish their spending profile and how this was affected by their age. A sample from each group was determined, resulting in a total sample size of 383 respondents from a population of 9,532 participants. To minimize the possibility of generating overstated multipliers as claimed in previous studies, respondents were limited to members of contingents only whose main purpose at the event site was to compete in the different contests, thereby avoiding the substitution effect in their planned activities. Simple and multiple correlation analyses were used to measure the degree of linear relationship between the given predictor variables (segment, product type, and age) and expenditure. Results indicate a significant positive correlation between the segment, product type and age to the expenditure, implying that the older athletes, coaches, officials, support staff as well as knowing the product type tended to produce higher expenditure. At the end of the multiplier process, after accounting for leakages in estimating the multiplier for each segment, the study found that the multiplier generated by the initial expenditures created economic impact by way of expanding the financial base of the local economy.

Keywords: Palarong Pambansa, expenditure multiplier, segmentation, economic impact.

INTRODUCTION

Every year since 1948, a national scholastic athletic competition is held in the Philippines, participated in by student-athletes who are winners representing the country’s seventeen regions. This annual event generates expenditure data which so far have not been systematically collected nor utilized to estimate its economic impact to the host local economy. Since a national sporting event sets the multiplier into motion due to the entry of new money that changes the dynamics of the circular flow of economic activity (Kahn, 2011), data that would have been useful disappeared with the ending of the year’s event. Lee (2001) in his work published in The Sport Journal, noting that most impact studies rely on assumptions, recommended that such studies be...
conducted based on evidence and information. In this investigation, expenditure data from the sports contingents themselves who were on site during the event were used as bases in calculating the multiplier.

Some writers have raised the issue of overstated multipliers (Archer, 1984; Crompton, Lee, & Shuster, 2001; Matheson, 2009). This issue is rooted in several factors, among which are the substitution effect and the leakages. The change in consumption behavior of visitors who are already in the location during the sporting event wherein they reallocate their expenditures instead of spending on their planned activities gives rise to substitution effect (Matheson, 2009). Another source of overstatement is the failure to account for leakages, identified as a combination of savings, taxes and imports (McIntosh Goeldner&Richie, 1995; Johnson, 1999). There is expenditure leakage when traders, sellers and businessmen from other areas bring with them the sales or revenues earned during the event when they leave the local economy. Leakage likewise results when by necessity a local economy has to import goods and services. The amount of leakage influences the value of the multiplier which in turn is influenced by the size of a country or region (Horvath&Frechtling, 1999). From empirical data, Horvath and Frechtling (1999) reported that larger and self-sufficient economies generate higher multipliers compared to smaller regions. Saayman (2012) adds that leakages tend to be chronic in rural, underdeveloped economies which regularly import goods or services from other areas. Against this backdrop, different approaches have been employed to generate multiplier estimates (Cabauatan, 2013; Fletcher, 1989; Fletcher & Archer, 1990; Horvath&Frechtling, 1999; Industry Commission, 1996). Fletcher’s (1989) compilation of income multipliers reveal that in large countries, multipliers range from 1.23 in Egypt to 1.96 in Turkey while in small countries (including the Philippines) the range is from 0.96 in Mauritius to 1.59 in Sri Lanka. In Australia, the Industry Commission (1996) has been using multipliers in the range of 1.1 to 2.5. In the Philippines, multipliers for major industry groups range from 1.12 to 1.60 (Cabauatan, 2013).

The purpose of this study is to determine the economic impact of sports contingents’ direct expenditures at the host local economy using the expenditure multiplier. It is argued that overstated multipliers can be minimized by utilizing survey data from the sports contingents themselves while on site as bases in estimating the economic impact. The study also examines the spending profile and the relationship of contingents’ segment, product type, and age with expenditures.

The study is anchored on the Keynesian multiplier model as detailed by Kahn (2011). The model shows the ripples of effects resulting from an increase in spending brought about by injections into the circular flow of economic activities in the form of consumption, investment and government expenditure as well as the leakages from the economy through savings, imports and taxes. However, the present investigation focuses only on the expenditure multiplier as the injection into the local economy but takes account of the leakages.

This paper aims to answer the following questions:

1. What is the spending profile for each segment of sports contingents?
2. What is the economic impact of Palarong Pambansa 2013 to the host local economy?

Research Design and Methods

Using data generated by a researcher-made visitor expenditure survey, the study employed a set of procedures to account for the economic
impact of Palarong Pambansa (Filipino term for “National Games”). In 2013 the event was held for the first time in the province of Negros Oriental, Philippines where the researchers live and work. Negros Oriental, the study area, is one of four provinces composing Region 7.

The following procedures for collecting data were followed. First, only members of athletic contingents from the seventeen regions of the Philippines were included. Second, only expenditures of these contingents were calculated. In this way, the substitution effect was avoided since the primary reason the contingents were at the site was to compete in the different sports contests. Furthermore, supplementary expenditures by tourists, casuals and time-switchers were excluded, as they could have spent in the local economy even without the sporting event. Third, the marginal propensity to consume (mpc) of the study area, Negros Oriental, was estimated based on the Family Income and Expenditure Survey of the province.

Fourth, the present study accounts for leakages by calculating the marginal propensity to save which is equal to $1 - mpc$ (Sicat, 2003), by applying weights to the percentage of items subjected to 12 percent Value-Added Tax (VAT) and those not subjected to VAT, and by adopting a set of criteria on the marginal propensity to import considering the characteristics of the local economy.

Several writers (e.g., Stynes, 1999; Frechtling, 2006) recommend the segmented approach to studying visitor expenditure and its secondary impact. Stynes (1999) in particular suggests segmenting visitors into groups with similar spending patterns to derive more efficient sampling designs. In this study, based on the official list of participants secured from the local Department of Education, members of the contingents were segmented as follows: athletes, coaches, officiating/technical officials, and support staff. Excluding participants from Region 7 who were used in pre-testing the research instrument, the segments were identified from a total population of 9,532 representing 16 regions, as follows: athletes, 5,710; coaches, 1,906; officiating/technical officials, 1,629; and support staff, 287. Applying Slovin’s formula at 5% margin of error, the sample size was 383 which is approximately 4% of the total population. This percentage was applied proportionately to each segment of the total population, giving a sample size of 229 athletes, 77 coaches, 65 officiating/technical officials and 12 support staff. For each segment, the mean age was 14 years old for athletes, 39 years old for coaches, 47 years old for officiating/technical officials, and 43 years old for support staff.

As a tradition, the Palarong Pambansa host province provides free accommodation at selected public schools. In addition, as stated in the welcome brochure of the host province, the following food support were given to every regional delegation: 15 sacks of rice, 100 kilos of meat (pork or beef) products, 100 kilos of chicken, 100 trays of eggs, 100 kilos of fish, 2 sacks of sugar, and 10 boxes of energy drink. What was lacking in meals and snacks were provided by the respective regional delegations. Participants, therefore, did not compete with other visitors in terms of accommodation and meals.

In this study, products purchased were assigned to nine (9) different categories in order to establish how each segment did their spending and what their spending priorities were. Accordingly, simple and multiple correlation analyses (Aiken, 2001; Cohen, 2001; Healey, 2002; Tabechnick, 2000) were used to explain the relationships between segment, product type and age with expenditure. To interpret the computed correlation coefficients in terms of magnitude, direction and statistical significance, the interpretation guide cited by Reston (2004) was used. According to Reston (2004), “statistical
significance means that findings can be generalized from the sample to the population while a not statistically significant finding means that such results are simply due to chance or sampling error and that findings could not be generalized from the sample to the entire population” (p. 135).

As to the expenditure multiplier, the basic model advanced by Keynes (1936) was adopted, specifically the following variant by Saayman (2012):

\[ k = \frac{1}{1 - c(1 - t) + m} \]

where:
- \( k \) = multiplier
- \( c \) = marginal propensity to consume
- \( m \) = marginal propensity to import
- \( t \) = marginal tax rate

Impact studies confirm that the overall economic impact of a sporting event is accounted for by the multiplier effect (Lee, 2001; Crompton, 1995; Wang, 1997).

RESULTS

The following tables show the results of the visitor expenditure survey which were aggregated instead of showing the results for each of the 16 regions included in the final run. The spending profile shows how segments did their spending and identified their top priorities. Their top five expenditure items (in no particular order) were: souvenir items, cellular phone load, local food, snack items and transportation. Miscellaneous includes items purchased by one or two segments only; it also includes possible expenses while shopping, strolling, “malling” (referring to the act of spending time at malls) and the like where items of expenditure are not known at the outset. In this case, it was assumed that items bought while “malling” are subject to value added tax as practically all mall-sold goods are.

**Table 1. Spending Profile of Segments by Product Type (in Philippine Peso, Php) Expenditure per Segment**

<table>
<thead>
<tr>
<th>Product Type</th>
<th>Officiating/Technical</th>
<th>Support</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Athletes</td>
<td>Coaches</td>
</tr>
<tr>
<td>Snack items</td>
<td>75,298</td>
<td>45,497</td>
</tr>
<tr>
<td>Souvenir items</td>
<td>150,815</td>
<td>119,623</td>
</tr>
<tr>
<td>Local food</td>
<td>92,142</td>
<td>97,842</td>
</tr>
<tr>
<td>Cell phone load</td>
<td>95,643</td>
<td>66,756</td>
</tr>
<tr>
<td>Transportation</td>
<td>46,122</td>
<td>51,533</td>
</tr>
<tr>
<td>Movies</td>
<td>17,515</td>
<td>9,904</td>
</tr>
<tr>
<td>Laundry</td>
<td>29,035</td>
<td>18,327</td>
</tr>
<tr>
<td>Medicine</td>
<td>1,024</td>
<td>1,487</td>
</tr>
<tr>
<td>Miscellaneous</td>
<td>22,013</td>
<td>17,122</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>529,607</strong></td>
<td><strong>428,091</strong></td>
</tr>
</tbody>
</table>

The highest expenditure for all segments was on souvenir items although the next item on the priority list was not necessarily the same for different segments (Table 1). Cellular phone load was the second priority on the part of athletes, but for coaches, officials and support staff, priorities vary. To understand why different segments spent differently, simple and multiple correlation analyses were performed and the results are presented in Tables 2 and 3.

**Table 2. Relationship of Segment, Product Type and Age with Expenditure**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Correlation Coefficient</th>
<th>p-value</th>
<th>Interpretation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Segment</td>
<td>0.409</td>
<td>0.000</td>
<td>Medium; S</td>
</tr>
<tr>
<td>Product type</td>
<td>0.305</td>
<td>0.001</td>
<td>Medium; S</td>
</tr>
<tr>
<td>Age</td>
<td>0.411</td>
<td>0.021</td>
<td>Medium; S</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Correlation Coefficient</th>
<th>Interpretation</th>
</tr>
</thead>
<tbody>
<tr>
<td>( \pm 0.00 \cdot \pm 0.09 )</td>
<td>Negligible</td>
</tr>
<tr>
<td>( \pm 0.10 \cdot \pm 0.29 )</td>
<td>Small</td>
</tr>
<tr>
<td>( \pm 0.30 \cdot \pm 0.49 )</td>
<td>Medium</td>
</tr>
<tr>
<td>( \pm 0.50 \cdot \pm 1.00 )</td>
<td>Large</td>
</tr>
</tbody>
</table>

NS = Not Significant at 0.05 level
S = Significant at 0.05 level
The simple correlation analysis results between expenditure and the predictor variables — segment, product type and age — show coefficients which were all medium and significantly positive with expenditure at 0.05 level of significance (Table 2). Age had the highest correlation coefficient among the predictor variables.

Multiple correlation was also calculated to account for the effect of the combined predictor variables — segment, product type and age — to expenditure (Table 3). The multiple R value of 0.59 indicates a significant large positive multiple correlation between the predictor variables taken simultaneously and the expenditure. The coefficient of determination, R², indicates how much is being contributed by the predictor variables to the criterion variable. The adjusted R² was primarily used as indicator of the coefficient of determination for this study to compensate for the relatively small number of observations in the data and so that a better estimate of the true value in the population can be determined, specifically on the contribution of the predictor variables to the criterion variable.

The multiplier was computed by applying Saayman’s (2012) formula to the estimates of marginal propensity to consume (mpc) from the Family Income and Expenditure Survey of the study area, the weighted average tax rate which takes into account the percentage of VAT and non-VAT items, and the average leakage for all items. The multiplier was found to be 1.08 which, when applied to the expenditures of each segment, generates a total economic impact of Php 1,584,837 (Table 4).

**Table 3. Multiple Correlation Between Expenditure and Combination of Segment, Age and Product type**

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Value</th>
<th>p-value</th>
<th>Interpretation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Multiple Regression R</td>
<td>0.59</td>
<td>0.022</td>
<td>Large; S</td>
</tr>
<tr>
<td>Coefficient of Determination, R²</td>
<td>0.34</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adjusted R²</td>
<td>0.25</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

S-Significant at 0.05 level

**Table 4. Economic Impact Generated by Expenditures of Palarong Pambansa Contingents (in Php)**

<table>
<thead>
<tr>
<th>Contingent</th>
<th>Expenditure</th>
<th>Economic Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>Athletes</td>
<td>529,607</td>
<td>571,976</td>
</tr>
<tr>
<td>Coaches</td>
<td>428,091</td>
<td>462,338</td>
</tr>
<tr>
<td>Officiating/Technical Officials</td>
<td>425,728</td>
<td>459,786</td>
</tr>
<tr>
<td>Support Staff</td>
<td>84,016</td>
<td>90,737</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>1,467,442</strong></td>
<td><strong>1,584,837</strong></td>
</tr>
</tbody>
</table>

**DISCUSSION**

The spending profile shows that all segments ranked souvenir items as the top priority. Souvenir items sold during the event include Palarong Pambansa T-Shirts, key chains, caps, wallets, “borloloys” (referring to locally-made fashion accessories), local delicacies to be brought back home as “pasalubong” (referring to items bought from trips and taken home as gifts), bags, slippers, sandals, clothes and tokens. Many of these items were sold in 258 temporary stalls which were lined up along the streets surrounding the provincial capitol building, and most of them were non-resident businessmen. For the second priority, the segments had different choices. The
second priority for athletes was cellular phone load which implies that the type of product and age group influence expenditure behavior. The rest of the segments, here composed of paid officials and employees, assigned second priority to local food, suggesting the presence of a significant market for locally-made food products. The rest of the priorities were ranked differently by different segments. Across spending profile, segment, product type and age were examined to shed light on the differences in spending.

Results from the simple correlation analysis suggest that the data on segment, product type and age when correlated with expenditure had provided sufficient evidence to conclude that the older the athletes, coaches, officials, support staff as well as knowing the product type tended to produce higher expenditure while the younger athletes, coaches, officials, support staff as well as knowing the product type tended to produce lower expenditure. Since these correlations were statistically significant, the relationship can be generalized from the sample to the entire population of this study.

The multiple regression coefficient is greater than any of the simple correlation $r$ values. This means that taking simultaneously the different predictor variables is much better than isolating each of them. On the one hand, the simultaneous combination of older athletes, coaches, officials, support staff as well as knowing the product type tended to produce high expenditure. On the other hand, the simultaneous combination of younger athletes, coaches, officials, support staff as well as knowing the product type tended to produce low expenditure.

Not all expenditures, however, remain in the local economy. Savings, imports and taxes are sources of leakages. As to taxes, often the public does not receive adequate information on the actual effects that an event brings in terms of tax revenues that accrue to the local economy. Big establishments, space owners at the malls, market stall holders (depending on items sold) are VAT-registered. However, not all businesses occupying temporary stalls surrounding the capitol building are paying VAT even if all of them pay rent to the provincial government for the duration of the event. A business is classified as non-VAT when its annual gross sales do not exceed P1,910,000 or as a microenterprise when the business capital does not exceed P10,000. From the expenditure categories shown in Table 1, retail sale subject to 12% VAT include prepaid cards, electronic loads and services, souvenir items, branded snack items sold in grocery stores/supermarkets, and movie tickets. The rest of the items are either non-VAT or are paying percentage tax of 3 percent. This resulted in a weighted average tax rate of 6% for VAT and non-VAT items.

Imports of the local economy were estimated based on its area as well as its characteristics since no data were available at the time this study was conducted. Most of the Palarong Pambansa 2013 games were played in Dumaguete City, the capital of the province of Negros Oriental. Records from the City Hall reveal the presence of about 3,500 business establishments, 55 banks, business process outsourcing companies, four major universities and some colleges, and services, but without a manufacturing sector. The list of business establishments from the local Department of Trade and Industry shows that a vast majority of enterprises are engaged in buying and selling. As to the province, agriculture and fishery are the dominant sectors. These features of the province and the city suggest that the local economy require imports to meet consumer demand.

As mentioned earlier, most of the sellers, traders and businessmen who displayed souvenir items during the event were not residents of the city or the province. These traders stayed for at least two weeks, and after the event left the
local economy together with revenues earned at
the site. To estimate the leakage, products were
classified into three groups, namely: 1) products
wholly manufactured outside the local economy
and sold through distributors, franchisees, dealers
or retailers, 70-85%; 2) locally produced goods,
including services, 10-40%; and 3) medicines
and miscellaneous, 40-75%. Applying the criteria
to the top five and the rest of the expenditure
categories, an average expenditure leakage in
the form of imports was estimated at 56 percent.
Having accounted for leakages, the multiplier
was estimated and result is consistent with other
work on the multiplier (Fletcher, 1989; Fletcher &

The Keynesian model explains that the
multiplier process begins when new money from
visitor expenditures enters the local
economy. At the end of the multiplier process,
the initial
expenditures of each segment was 8 per
cent percent higher than that created in the initial
and second rounds (direct and indirect created
income).

The sporting event introduced several
lessons that may guide local government hosts
when preparing for the next big activity. The
contingents of this event, classified by segment,
were sources of effective demand. With local
government support, this opportunity can be
captured and optimized by local entrepreneurs
who have competitive advantage compared to
outside sellers due to minimal transport costs.
Furthermore, visitors and tourists benefit from
relatively lower prices which may attract more
guests.

CONCLUSION

The main motivation of participants to a
sporting event is to compete. Unknowingly,
though, they contribute to the local economy
when their initial expenditures undergo a series
of re-spending, creating multiplier effects. This
paper has shown that across spending profile, the
segment, product type and age have significant
positive correlation to the expenditure, implying
that older athletes, coaches, officials, support
staff as well as knowing the product type tended
to produce higher expenditures. Their initial
expenditures have generated a multiplier effect
which, after accounting for leakages in the form
of savings, imports and taxes, created economic
impact by way of expanding the financial base of
the local economy.

ACKNOWLEDGMENT

This piece of work would not have been
possible without the invaluable support of the
following: Negros Oriental State University for
the funding; Office of the Governor for sharing
information materials about Palarong Pampansa
2013; Department of Education Superintendents
of the Divisions of Negros Oriental and
Dumaguete City for allowing the researchers to
visit the respondents in their billeting quarters;
the school principals, enumerators and research
assistants; and the Office of Research, Extension
and International Linkages through its VP for
REXIL, its Research Director and its staff. To all
of them, our sincerest thanks and gratitude. This
study was made possible through REXIL Project

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