

**The Economic Impact of
the 42nd World Archery Championships**

**The Economic Impact of
the 42nd World Archery Championships
New York City**

July 14 to 20, 2003

Final Report

David K. Stotlar, Ed. D.
Research Coordinator

School of Sport and Exercise Science
University of Northern Colorado
Greeley, CO 80639 USA

Ping-Kun Chiu, Chiung-Hsia Wang
Chien-Hsin Wang
Research Assistant
School of Sport and Exercise Science
University of Northern Colorado
Greeley, CO 80639 USA

1- 970-351-1722

**The Economic Impact of
The 42nd World Archery Championships
New York City July 14 to 20, 2003**

Executive Summary

The 42nd World Archery Championships took place in New York City from July 14 to 20, 2003, with the finals in Central Park. Eighty-one countries and 581 archers participated in this tournament, the largest participation since 1931. The purpose of this research was to determine the economic impact of the 42nd World Archery Championship in New York City. In this research, we found:

- ✓ The spectators, participants, and FITA and the organizing committee contributed approximately US\$ 2.46 million in direct spending to the NYC economy
- ✓ Those amounts generated an estimated US\$ \$5.42 million in total business activity within the NYC area over the championship period
- ✓ 83.4% of the total spectators would continue to be involved in archery in the future
- ✓ 97.6% of the audience were satisfied with this event

Based on these data, both the International Archery Federation and the New York City Organizing Committee performed well and served the archers, the spectators and the constituents of the archery and NYC communities through this event.

INTRODUCTION

The 42nd World Archery Championships took place in New York City from July 14 to 20, 2003, with the finals in Central Park. This competition was one of several important trials for recurve archers to earn a spot representing their country at 2004 Olympic Game in Athens. Eighty-one countries and 581 archers participated in this tournament, the largest participation since the first World Archery Championships in 1931 in Lwow, Poland. The championships held qualification and final rounds at Van Cortland Park and Central Park respectively. This separation of event venues, the first in archery competition, made it more challenging for the Organization Committee to set up the venue and attract spectators. To address this challenge, the Organization Committee prepared several entertaining activities to attract more people into the competition ground during the event period.

The Importance of Economic Impact Study

The purpose of the economic impact study was to determine the broader economic benefits that accumulate in the local community as a direct result of this event. Economic impact analysis methods have been widely used in different fields to study the economic influences related to tourism (Archer, Fletcher & John, 1996), evaluate the impact of visitors to a sport tournament (Crompton, 1999) and evaluate the economic changes related to income, jobs and transportation (DeSalvo, 1994). The host cities typically want to know the economic value of hosting events. Furthermore, they are interested in substantial return on their investments. Every major sporting event attracts tourists who generate new money for the local community and sanctioning body. The finding would enable the host city and governing body to better identify benefits attributable from the event and services they provided. Socio-economic data

on worldwide archery activities has not been regularly collected and assessed.

The 42nd World Archery Championships and benefits New York City

The benefits of this tournament to New York City include tangible and intangible elements. The tangible benefits included new money flowing into New York City from the national players, international players, FITA officials, and outside visitors. This event, like most major sport events such Olympic Games and professional sports, created both business and tourism activities, generating new money for the local community. Through the multiplier process, the re-spending and circulation of these new dollars, the gross expenditure created additional output, income and paid wages. Intangible benefits stemmed from the heightened visibility of NYC in the international sports community in support of their bid for the 2012 Olympic Games. In addition, the fact that the city received high ratings for their organization further adds to the intangible benefits achieved.

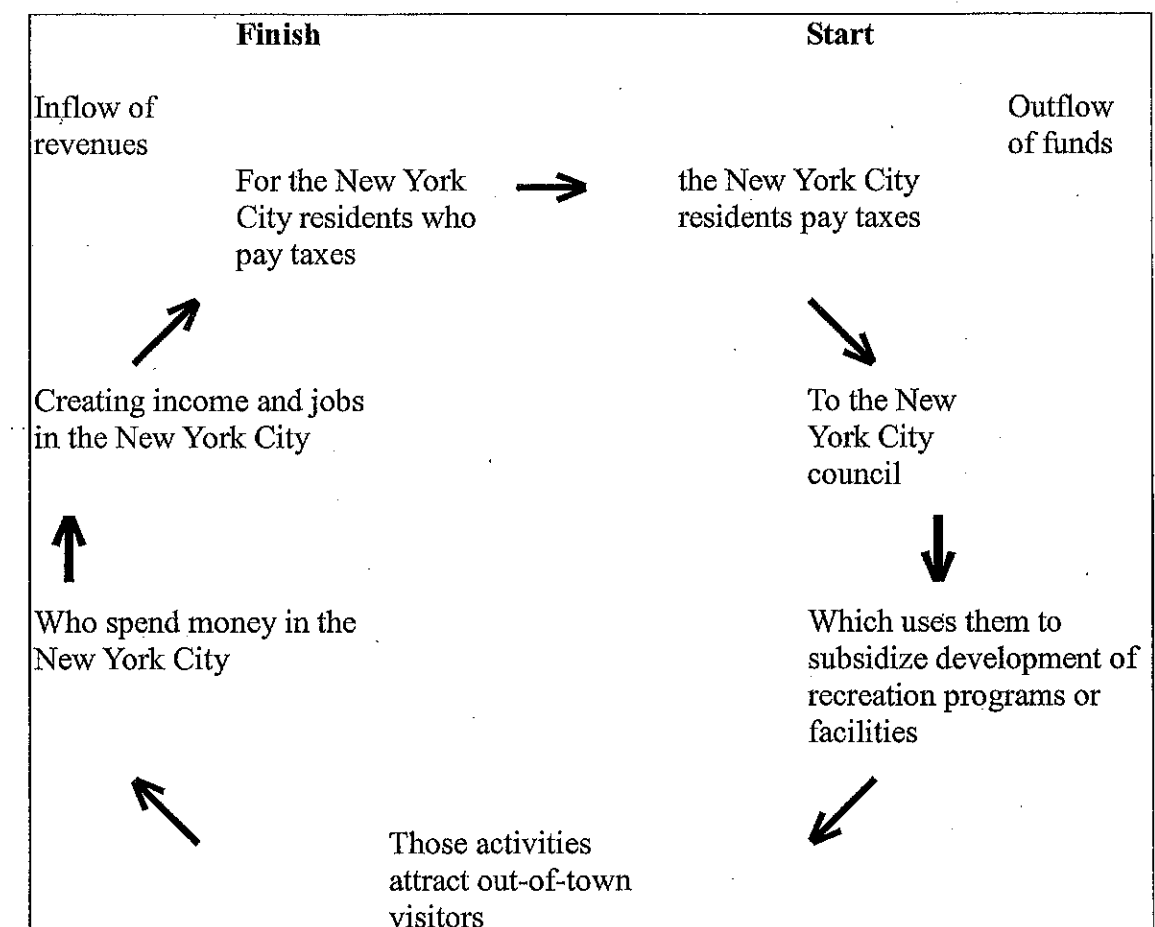
ECONOMIC IMPACT METHODOLOGY

Economic impact in sporting events can be defined as the net change in an economy resulting from a sporting event. The change is caused by activity involving the acquisition, operation, development, and use of sport facilities and services (Lieber & Alton, 1983). When outside visitors come to the event and spend money in the community, their initial direct expenditures will stimulate economic activities and create additional business turnover, personal income, employment, and government revenue in the host community (Crompton, 1999). Economic activity is simply the flow of goods and services into a community during a certain period. These new dollars create income and jobs for the residents of the local community.

The intensity of economic impact is dependent on the event's variety, size, and purpose. This research focused on measuring the economic impact of spectators, participants, and officials' spending. Furthermore, information was collected regarding participants' satisfaction during the 42nd World Archery Championships.

The virtual cycle of economic development (Figure 1) set the framework for this study.

Figure 1 The Conceptual Rationale for the 42nd World Archery Championships Economic Impact Study



Resource: Howard & Crompton, 2004

Procedures

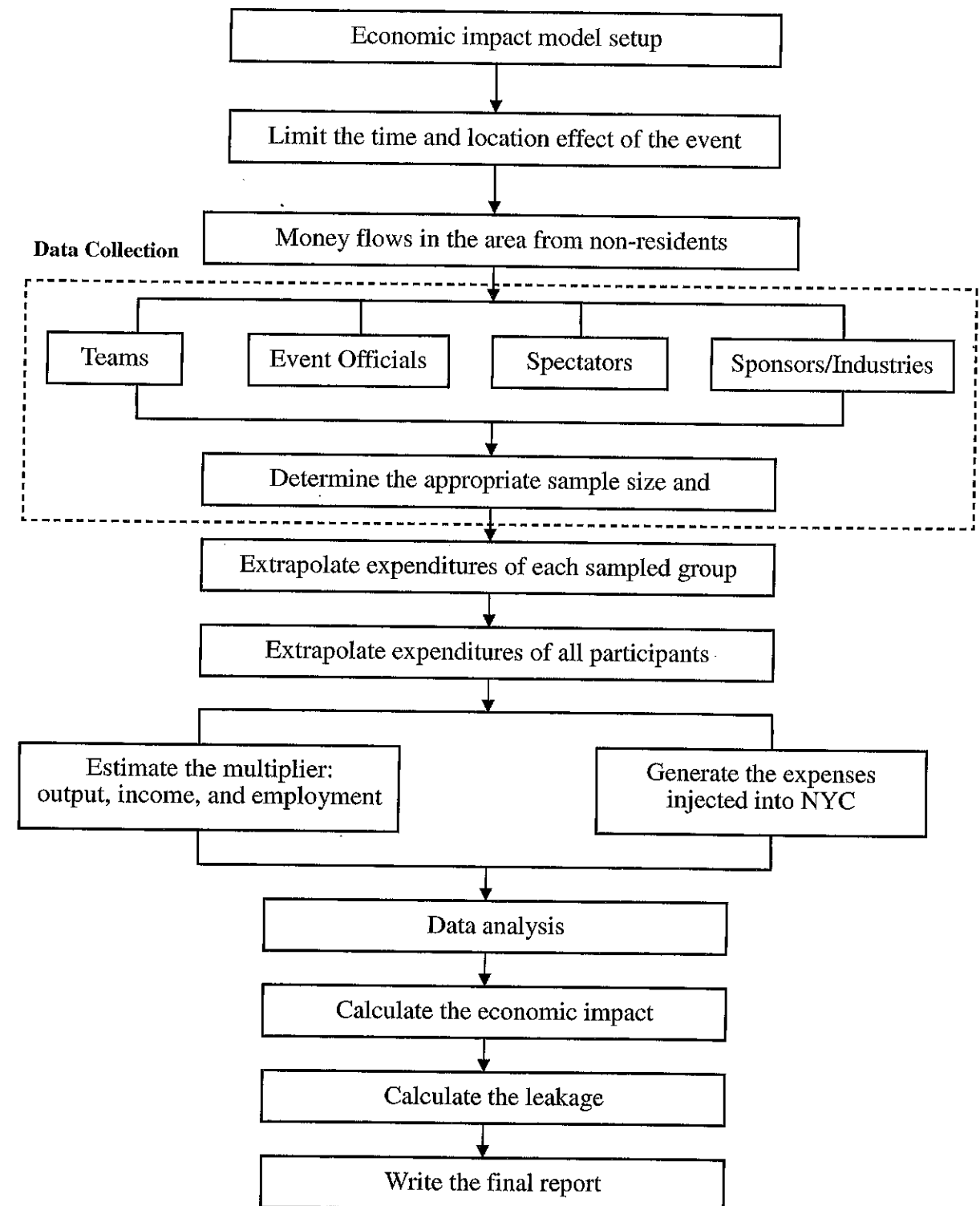
The purpose of this research was to determine the economic impact of the 42nd World Archery Championship in New York City. The procedures of this research can be divided into several parts: economic impact model setup, limitation of time and location, data collection, extrapolation, application of the multipliers and generation of expense data and analysis, and calculation of the economic impact and leakage in NYC. Figure 2 represents the research progression for the 42nd World Archery Championship in New York City.

Data Collect and Survey

The data collection can be divided into two parts: financial injection of the 42nd World Archery Championship provided by the administrators of FITA and data collection during the 42nd World Archery Championships.

First, the official expenditures include operations, advertisement, operation, accommodation, and hospitality. Second, a survey was delivered to the teams, events officials, sponsors/industries, and media crew at the press conference before the 42nd World Archery Championship. Researchers collected spectator data on-site at Van Cortland Park and the Central Park venue entrance..

Figure 2. The Progress of the 42nd World Archery Championship in New York City



Instrumentation

The questionnaire (Appendix A) was developed based on the established research paradigm for economic impact. There were two main sections: demographics and consumption. The demographics include sex, nationality, age, location (including zip code), role in the Archery Championship, occupation, marital status, education status, individual annual income, years involved in archery and satisfaction with the archery event. The consumption data include expenditures on food and beverage, entertainment, retail shopping, lodging, private auto, rental car, and other, in New York City. The questionnaire was used to estimate the approximate total expenditures of participants during the 42nd World Archery Championship.

Economic Multipliers

Multipliers have been commonly used in estimating economic impact of sport settings on an economy and may be modified due to different city size or population (see also Appendix B). Turco and Kelsey, in their publication "Conducting Economic Impact Studies of Recreation and Parks Special Events," stated that "regional output or sales multipliers for recreation goods and services average approximately 1.9 and range from 1.2 to 3.0" (Turco & Kelsey, 1992, p.66.) Also, the economic impact studies in areas other than sport-related fields also provide good references to estimate the appropriate value of multipliers. Another study titled "An Analysis of the Economic Dimensions of the New York State Greenhouse Industry" used the state-level input-output multiplier, an output multiplier of 1.552 and an employment multiplier of 1.334 to estimate the economic impact associated with the greenhouse industry for New York State in 1997 (Uva, 1999). A study entitled "The North American Cruise Industry's Contribution to the New York Economy in 2001" used an income multiplier of 2.2 in New York which is just slightly

lower than the corresponding national multiplier of 2.8 (BREA, 2002). Since an estimated multiplier will be used to determine the total economic impact in this study, the objective and unequivocal outputs will be obtained only when the multiplier is reasonably stated and well thought out. Thus this research, employed an a conservative multiplier of 2.2 used by "The North American Cruise Industry's Contribution to the New York Economy in 2001," and verified through RIMS II multipliers for New York.

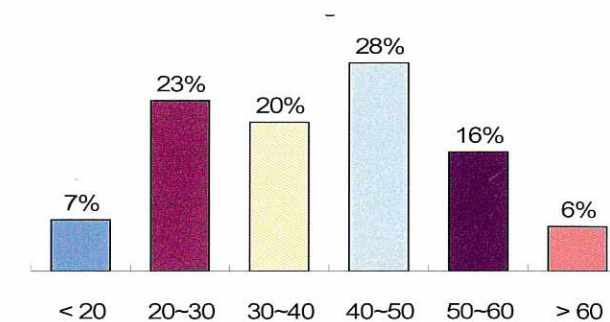
ECONOMIC IMPACT RESULT ANALYSIS

The operating protocol of this research included (1) determination of the geographical scope of investigation, (2) determination of the research subjects, (3) calculation of the expenditures on 6 separate categories, (4) calculation of the expenditures on lodging and airfare, and (5) estimation of total expenditures. Every event has its limitative impact around the host city. The defined geographical scope of investigation for the economic impact study is delineated as the NYC and the surrounding metropolitan counties. Also, the economic impact of this event was calculated to include only new money flow into the hosting city from spectators, media, sponsors and organization committees who are non-residents. Furthermore, economic impact is concerned with the money spent in the area, and the expenditures have to be identified because different expenditures have different effect on categories. Pervious research has occasionally disregarded the airfare expenditures because the purchase of tickets was made outside of the economy under study. However, because the airlines operate terminals in the host city, 20% of these monies were included to address the impact of air carrier spending on office operations, staff expenditures, landing fees, airport taxes, etc. Finally, the total expenditures from spectators, participants and organization committees were added to the impact data.

The effect period of the economic impact of the 42nd World Archery Championship in NYC was established conservatively as the official competition days, July 14-20, 2003. The impact could have been greater if the total number of days in NYC residence for all subjects were included. The geographic location for the study was the City and County of New York and the surrounding metropolitan counties of Nassau, NYC, Orange, Putnam, Suffolk, and Westchester. Previous research has indicated that local residents should be excluded from economic impact data. The principle of "expenditure switching" implies that local spectators would typically have spent these dollars on other activities and these do not represent new dollars injected into the economy.

Research subjects included on-site spectators who resided outside NYC area, team officials, captain, athletes, and companies involved with the event. Initially, 222 subjects were randomly sampled from the 581 WAC participants and spectators. Incomplete responses were eliminated. Subjects had a mean age of 39.5 years old, ranging from 15 to 70 (Figure 3).

Figure 3 Age Groups of Subjects



Other demographic data found that the income groups between US \$35,001-US \$65,000 and above US \$65,000 were more likely to attend the archery events. Therefore, this should be considered as the target market for FITA and future hosting organizing committees.

Expenditures from Spectators

Because no tickets were sold and no official turnstile count was available, researchers estimated the attendees by counting spectators at varied and specified times of the day during the WAC. A high of 850 people and a low of 40 were found during these intervals. When combined with entry gate data and observation of spectators on the ground, an average of 500 people per day was achieved. Approximately 1 in 6 (17%) spectators reported living outside the NYC area and were therefore not included in the economic impact. Data from spectators residing outside NYC indicated that their average daily expense was \$40.00 on food, \$21.00 on entertainment, sightseeing, lounges, and bars, \$33.00 on retail shopping, and \$43.00 on lodging, \$6.00 on private auto expense, \$5.00 on other expenses, for a total of \$145.00 per day per person. Therefore, a calculation of impact from on-site non-resident spectators would be: \$145.00 per person per day x 500 spectators per day x 0.17 (non-residents) x 7days = \$ 86,275.

Expenditures from Event Participants

Due to the considerations of time and expense, the research instrument did not reach every participant. A representative sample of 222 (38%) of complete and usable surveys were available for data analysis. Inferential statistics were used to estimate the total expenditures in NYC during the 42nd World Archery Championships. With respect to the calculating procedures, six steps were administered in a specific sequence.

The first step was to determine the total expenditures (without lodging) per person while in NYC. The data showed that expenditure to be US\$ 173.30 per person per day. The second step utilized the data from Step 1 to determine the total daily expenditures of all participants. The third step was to calculate the total expenditures during the championship period. The fourth step added the total per person championship period expenditures to the lodging expenditures (as provided by the organizing committee). The fifth step infused 20% of airfares purchased. As previously explained, although air tickets were most likely purchased internationally or not in the NYC area, it is argued that 20% of these monies be included as expenditures because these airlines operate terminals in NYC (with staff, landing fees, etc.). Finally, the total expenditures were calculated in Step 6 by combining daily expenditure totals with 20% of the airfare expense.

Six Steps to Determine the Direct Expenditures for Participants

STEP 1

Participants from 17 countries had an average expenditure of US\$ 173.30 per day

STEP 2

Mean of sampled subjects was used to infer the expenditures
of all 581 other subjects

$$(\$173.30 \times 581 = \$ 100,687.30)$$

STEP 3

The daily expenditures on the 6 categories (without lodging) were multiplied
by the mean days of stay

$$(\$100,687 \times 7 = \$ 704,809)$$

STEP 4

Total expenditures US\$ 704,809 and expenditures on total lodging US\$ 609,450

$$(\$ 704,809 + \$ 609,450 = \$ 1,314,259)$$

STEP 5

20% of air ticket purchased

$$(\$860 \times 581 \times 20\% = \$ 99,932)$$

STEP 6

Entire expenditure of participants

Step 4 + Step 5 =

$$(\$ 1,314,259 + \$ 99,932 = \$ 1,414,191)$$

Expenditures from Organizing Committees and FITA

The budget of the 42nd World Archery Championships for New York City was reported as US\$ 800,000.00. Furthermore, the budget of FITA was US\$ 255,139.62. In addition sponsorship revenue was US\$ 87,500.00. However, it is assumed that the revenues acquired from sponsors were accounted for in FITA and Organizing Committee spending and should not, therefore, be included as additional spending. The total expenditure budgets for 42nd World Archery Championships was \$1,055,139.62 (Table 1).

Table 1 Total Expenditures FITA and NYC Organizing Committee

Revenue	
NYC Budget	\$800,000.00
FITA Budget	\$255,139.62
Total	\$1,055,139.62

Resource: NYC Organizing Committee and FITA

Although the expenditure of FITA in the 42nd World Archery Championships was 255,139.62 (Table 2), some expenditures did not contribute to the economic impact because a portion of these revenues were distributed outside of the NYC area (known as leakage). For example expenditures such as travel, judge travel, timing system, and TV production were in the budget, but spent outside the area under study. As previously noted, although air tickets were purchased internationally, not in the NYC area, these airlines operated terminals in NYC (with staff, landing fees, etc.) and thus 20% of these monies were included. The timing system equipment came from a German company and TV production came from a French company; hence, these expenditures were not expended in NYC. Thus, the attributable expenditures of FITA reserved for NYC totaled US\$ 165,142.12 (Table 2).

Table 2 Expenditure of FITA in NYC and Leakage

Items	Amount	Total spent in NYC
Medal, Congress, etc.	\$57,561.46	\$39,476.39
Travel	\$14,274.19	\$2,854.84
Accommodation	\$62,906.42	\$57,567.87
Ticket	0.00	
Advertising	0.00	
Various	\$19,610.04	\$10,370.84
Judges Travel	\$40.93	\$40.93
Judges Per Diem	\$0.00	
Results/Timing	\$11,494.64	
System		
TD costs	\$1,609.46	
TV production	\$87,642.48	\$54,831.25
Total	\$255,139.62	165,142.12

Resource: From FITA

Final Direct Economic Impact was therefore calculated by combining the expenditures of spectators, participants, the organizing committee and FITA. By employing the economic multiplier, a final figure was obtained representing the total economic activity attributable to the 42nd World Archery Championships. These findings are presented in table 3 below.

Table 3 Total Economic Impact of 42nd WAC

Direct Spending	
Non-resident spectators	\$ 86,275.00
Participant Spending	\$ 1,414,191.00
NYC Organizing Committee	\$800,000.00
FITA Budget minus Leakage	\$165,142.12
Sub Total	\$2,465,608.12
Multiplier	x 2.2
Total Economic Impact	\$5,424,337.86

Satisfaction

As a final comment, the research team collected information relating to the spectator's satisfaction with the event. These data were collected on-site during the 42nd World Archery Championships with a total of 250 questionnaires distributed to the audience in front of the entrance of archery field. Ninety-eight percent of the subjects reported that they were either "satisfied" or "very satisfied" with the 42nd World Archery Championships. Also, 83% of the respondents would likely attend archery events in the future. These data reflect the outstanding performance of the NYC Organizing Committee and FITA.

Conclusion

The growing popularity of international archery activities over the last decade has created new challenges and opportunities for FITA and host city Organizing Committees. Substantial increases in the number of archers worldwide during recent years have resulted in many National Governing Body promoting and growing the sport of archery. These NGBs continue to spend more time and more money on the archery events. The confluence of these factors show that archery is a growth sport with a bright future.

The research conducted through this study was designed to analyze the economic impact related to the 42nd World Archery Championships in New York City. This study represented a beginning effort to research and understand the economic activity associated with the sport. It also provided insight into Olympic style archery and the economic effects of archery on the host

country and local economies.

The most important findings are summarized below:

- ✓ NYC injected US\$ 800,000 for this international event.
- ✓ FITA contributed US\$255,139 to support this event.
- ✓ The participants contributed approximately US\$ 1.41 million to the NYC area.
- ✓ The non-resident spectators contributed approximately US\$ 86,000 to the NYC area.
- ✓ Those amounts generated an estimated total US\$ 5.42 million in total business activity within the NYC area over the championship period.
- ✓ 83.4% of the total spectators would be involved in archery in the future
- ✓ 97.6% of the audience were satisfied with this event

In summary, these findings show that both the International Archery Federation and the New York City Organizing Committee performed well and created potential archers and/or audiences for the future.

Suggestions

- ✓ The success of the NYC Organizing Committee contributed significantly to the reputation of the city and would further international support for the 2012 Olympic bid.
- ✓ In this study, only 1 in 6 spectators came from outside the host city area. In the future, Organizing Committees should consider media campaigns to attract more non-resident spectators.
- ✓ During the 42nd World Archery Championships, most archers frequented the vendor booths to inquire about the new equipment, and to purchase necessities. Therefore, in the future, the Organization Committee or FITA should expand the exhibition ground

and recruit a variety of archery-related merchandise vendors.

- ✓ Because of the success of sports channels and increases in sport programming, FITA has an opportunity to cultivate and enlarge the archery population by linking with sports channels.

Appendix A
2003 42nd World Archery Championship
Economic Impact Questionnaire

Dear Sirs,

The purpose of this questionnaire is to investigate your consumptions and experiences during this period in New York. The result of this questionnaire is to offer a primary data to The Research of 2003 42nd World Archery Championship Economic Impact on USA and the Hosting Area-New York. Therefore, your answer is very important to us. Please answer the following questions stated on this questionnaire. Thank you for your cooperation.

Sincerely,

Research Coordinator

I. Demographics:

- A. Sex: ☐ Male ☐ Female
- B. Nationality: _____
- C. Do you live in USA? ☐ Yes (and Zip Code _____) ☐ No
- D. Age: _____
- E. Your role related to the 2003 42nd World Archery Championship:
- ☐ Team Captain ☐ Athlete ☐ Team official
- ☐ Judge ☐ Sponsor ☐ Media reporter
- ☐ FITA official ☐ Spectator ☐ Other (please state _____)

II. Consumption:

- A. How many people are there in your traveling group? _____

To better understand the economic impact of the 2003 42nd World Archery Championship, we are interested in finding out the approximate amount of money you and other visitors in your immediate group will spend, including local travel. We realize that this is difficult question, but please do your level best because your responses are very important to our efforts.

Type of Expenditure		Total Amount Spent Per Person Per Day	
		IN the New York Area	OUTSIDE the New York Area
1	Food & Beverages (e.g. restaurants, concessions, grocery stores, etc.)	\$: _____	\$: _____
2	Entertainment, Sightseeing, Lounges & Bars (e.g. cover charges, drinks, etc.)	\$: _____	\$: _____
3	Retail Shopping (e.g. clothing, souvenirs, gifts, etc.)	\$: _____	\$: _____
4	Lodging Expenses (e.g. hotel, motel, etc.)	\$: _____	\$: _____
5	Private Auto Expense (e.g. gas, oil, repairs, parking, fees, etc.)	\$: _____	\$: _____
6	Rental Car Expense	\$: _____	\$: _____
7	Any Other Expenses Please Identify: _____	\$: _____	\$: _____

C. Are you planning to go anywhere or do some other activities in USA except for attending this event?

___ No

___ Yes (then, please state it on the following blanks):

Thank You For Your Cooperation!! Have A Nice Day in NYC.

Please Return Your Survey To:

FITA Office

Appendix B

Multiplier

There are many economic analysis researches in the sport-related field consider a number of different estimation mechanisms; particularly, cost-benefit, input-out analysis, econometric models, and the multiplier effect are the major economic measurement tools used (Gratton & Henry, 2001).

- Output multiplier: the output multiplier measures how the visitors' spending impacts the volume of economic activity.
- Income multiplier: the income multiplier measures how much of the visitors' spending remains in the local economy as either household or proprietor income.

Table 1 *The Definition of Direct, Indirect and Induced Impact in Host City*

Impact	Definition	Definition in this case
Direct impact	Direct impact measures how visitor's spending directly impacts on-site (for example, gate receipts, concessions, merchandise) and off-site (for example, restaurants, malls, hotels) locations.	In the international archery competition case, the direct impacts are simply the share of FITA spending that initially purchases goods and services produced by the hosting city's industry to satisfy the additional demand.
Indirect impacts	Indirect impact measures how the supplier-chain firms are impacted by the increased business generated from the direct impact.	In the international archery competition case, the indirect impacts are the share of visitors' spending that initially purchases goods and services provided by the hosting city's industries to satisfy the additional demand.
Induced impact	Induced impact measures how the employees of all impacted firms spend their additional income gained from the initial rounds of impact.	The induced impacts in the international archery competition case are the multiplier effects of the direct and indirect impacts, created by responding to the amounts involved in the direct and indirect impacts.
Total impact	The sum of the direct, indirect, and induced impacts.	