THE ECONOMIC IMPACT OF THE 2018 SPARTAN RACE ON THE WEST VIRGINIA ECONOMY

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The Economic Impact of the 2018 Spartan Race on the West Virginia Economy

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Executive Summary

The Spartan Race is a series of obstacle course races. The race format varies in terms of distance and difficulty, and can be structured to fit different levels of athletes. The race is held several times a year in various locations across the US as well as outside of the US. Participants come not only from all over the US, but also from other countries.

The last Spartan Race in West Virginia was held from August 25 through 27, 2018 in Glen Jean, on the grounds of Summit Bechtel Reserve, which is also used to host various events with the Boy Scouts. In this study we estimate the economic impact of the 2018 Spartan Race in Glen Jean, West Virginia on the state economy. Our findings are summarized as follows:

- The 2018 West Virginia Spartan Race was attended by almost 10,000 racers, 12 percent of whom came from West Virginia, 87 percent came from other states in the US, and 1 percent came from US Territories and other countries including Canada, Iceland, Mexico, France, and the Czech Republic.
- The direct spending of the event was $3.6 million, which supported, on an annualized basis, 22 jobs associated with a total employee compensation of $0.6 million.
- Taking into consideration the spillover benefits of the event on the broader economy, we estimate that the event generated a total impact of $4.6 million in output in the West Virginia economy.
- The event supported around 30 jobs in the West Virginia economy.
- The event generated a total of $66.4 thousand in selected state and local tax revenue.

The above impact considers only dollars spent in the West Virginia economy in 2018 and does not include non-quantifiable impact such as the exposure that the state’s tourism receives from hosting the event. The majority of racers plan to return to West Virginia indicating a possible Spartan Race to be held in the state again in 2019. A consolidated effort by interested parties in the state may be able to make this event even larger, thus generating greater economic impact for the state economy.
1 Introduction

The Spartan Race is a series of obstacle course races. The race format varies in terms of distance and difficulty, and can be structured to fit different levels of athletes. Spartan Sprint, for example, offers a 3 to 5 miles distance race with about 20 obstacles to go through, while Spartan Beast offers a 12 to 14 miles race with 30 to 35 obstacles. Spartan also offers Spartan Kids, a race for children.

The first Spartan Race was held in 2010 in Williston, Vermont. The race has expanded ever since. Spartan now runs regional and national championships held across the US, and a special Spartan World Championship held either in the US or outside of the US. Participants come not only from all over the US, but also from other countries such as Canada, Iceland, Mexico, France, and the Czech Republic. In 2017 alone, Spartan held more than 250 races across the United States. Spartan also has partnered with the U.S. military and corporate sponsors, produces a podcast, and has its own clothing line.

Spartan Race was held for the first time in Glen Jean, West Virginia, in 2017. The race took place on the grounds of Summit Bechtel Reserve, which is also used to host various Boy Scouts events. The second Spartan Race in the state was held at the same place from August 25 through 27, 2018. The race ran three types of races for adults including Spartan Sprint, Spartan Super, and Spartan Beast, and a race for kids as well. Almost 10 thousand racers from all over the US and some from abroad, participated in the race, and a total of 2,150 spectators also attended the event.

Spartan Race event is a special attraction and a healthy social and recreational activity for West Virginians as well as the racers and spectators. From the economic perspective, the event generates an economic impact to the local economy as racers and spectators spent their money purchasing goods and services produced or sold in the area. The purpose of this study is to estimate the magnitude of the economic impact this particular event generates on the West Virginia economy as a whole. We estimate the impact in terms of output, employment, and tax.

The next section of the report discusses the characteristics of the racers participating in the event, followed by a section describing the methodology used to estimate the economic impact. The final section of the report presents the estimates of the economic impact of the event on West Virginia economy.
2 Characteristics of the Racers

This section discusses how many racers participated in the event, and then looks at their characteristics in terms of place of residence and age. The 2018 Spartan Race attracted many racers from West Virginia as well as across the country and globe. More than 9,600 racers participated, 12 percent of which came from West Virginia, 87 percent came from other states in the US, and 1 percent came all the way from outside of the US Canada, Iceland, Mexico, France, and the Czech Republic (Figure 1).

Figure 1: Racers’ Area of Residence

![Pie chart showing the distribution of racers by area of residence: 87% from Other US States, 12% from West Virginia, and 1% from Outside of the US.]

Source: 2018 West Virginia Spartan Race Survey
Note: *Outside of the US includes foreign countries and US territories (e.g., Puerto Rico, Guam).
This 2018 Spartan Race had racers from every state in the United States, including Alaska and Hawaii. West Virginia racers made up 1,176 (12 percent) of the racers, second only to the most represented state which was Virginia, with 1,704 racers (20 percent). Other states that were well represented, with over 400 racers, included North Carolina, Pennsylvania, Ohio, Maryland, and New York. There were also 79 racers coming from foreign countries. The detailed breakdown of racers by residence can be seen in Figure 2.

**Figure 2: Racers’ State of Residence**

Source: 2018 West Virginia Spartan Race Survey and authors’ calculations

Note: *Outside of US includes foreign countries and US territories (e.g., Puerto Rico, Guam). Some racers participated in more than one race. We assume these crossover racers have the same distribution as their population universe. We use the information to avoid double-counting when calculating the total number of racers.*
This 2018 Spartan Race attracted racers of all ages. The most well represented age categories at the 2018 West Virginia Spartan Race were ages 30-34 and 35-39, both having over 1,600 racers each. There was a large turnout in the youngest category of under 20 years old, which includes child participants. The oldest category, 55 years or older, had more than 200 racers (Figure 3).

**Figure 3: Racers’ Age Distribution**

![Bar chart showing age distribution of racers](chart.png)

*Source: 2018 West Virginia Spartan Race Survey and authors’ calculations*

*Note: Some racers participated in more than one race. We assume these crossover racers have the same distribution as their population universe. We use the information to avoid double-counting when calculating the total number of racers.*
3 Methodology

The first step to estimate the total economic impact of the 2018 Spartan Race is estimating the direct spending made in the local economy by the event. This represents the event’s direct output impact, which in this case came from two sources: first, the event organizers, as they purchased materials, office supplies, meal and beverages, etc. necessary for the event, and second, the racers and spectators, as they paid for lodging, food and beverages, gas, etc. during their stay. The raw data needed to calculate the direct impact is provided by the Spartan Inc. This raw data includes information on the number of racers participating, racers’ place of residence, average total spending that each racer made during their stay, the type of lodging and the number of nights racers stayed in the area, and racers’ mode of transportation. It is important to note that the spending made by West Virginians is not included as part of the direct impact. This is because local West Virginians would not stay in a hotel or motel, and would spend money on food and beverages anyway even if the event did not take place.

The total economic impact of Spartan Race event, however, is not limited to the direct impact above, but also includes the secondary economic impacts accrued as these expenditures are re-spent throughout the rest of the economy. For example, as racers or spectators purchase food and beverages from restaurant, the restaurants will increase production by purchasing more food and beverage materials. Consequently, the suppliers of these food and beverage materials will increase their production, which in turn will cause the next suppliers to increase their production, and so on. All of this additional economic activity that stems from the purchase of food and beverages is referred to as indirect impacts. In addition, these restaurants and all the subsequent suppliers employ numerous workers, part of whose income will be spent in the West Virginia economy, generating additional impact. This activity associated with employees spending their income in the state is referred to as induced impacts. These indirect and induced impacts together form what is known as the “multiplier effect.” The original stimulus to the economy from the operation’s total expenditures is re-spent multiple times through the rest of the economy. The combined direct impact and secondary impacts constitute the total economic impact of the Spartan Race event.

To estimate the indirect and induced impact we use IMPLAN, an economic impact assessment software system. It provides a detailed model of the West Virginia economy that outlines how trade-flows among industries interact with key economic indicators such as employment, income, output, and tax revenue.

4 Economic Impact of the West Virginia’s 2018 Spartan Race

In this section we estimate the economic impact of the 2018 West Virginia’s Spartan Race event. The raw data is provided by the Spartan Inc., which comes mainly from a survey that they conducted, as well as from the registration. We start this section with a discussion of the survey results, followed by the economic impact analysis.

In Figure 4 we show the types of accommodation that racers used during their stay. About 62 percent stayed in a hotel or motel, and 6 percent stayed in another type of commercial place such as vacation home rental and condo. Other racers either stayed in a tent, RV, or camping ground (5 percent), stayed with friends or family (3 percent), or used other accommodations (6 percent). About 18 percent of racers, most of whom must be West Virginians, did not stay overnight, and thus did not need accommodation.
Figure 4: What Accommodation Racers Used During Their Stay? (N = 354)

- Hotel / Motel: 62%
- Did Not Stay Overnight: 18%
- Vacation Home Rental (Air B&B, etc): 6%
- Tent / RV / Camping: 5%
- Other: 6%
- With Friends/Family Living in the Area: 3%

Source: 2018 West Virginia Spartan Race Survey
In Figure 5 we show the number of nights racers stayed in West Virginia during the weekend of the Spartan Race. Of all racers that stayed overnight, most stayed for two nights (56 percent), followed by those staying for one night (29 percent). The rest (15 percent) stayed for three nights or more.

**Figure 5: How Many Nights Racers Spend During the Event? (N = 279)**

Source: 2018 West Virginia Spartan Race Survey
In Figure 6 we show the area in the state in which racers stayed during the event. Glen Jean, West Virginia is quite close to other small towns such as Oak Hill, but can also be easily accessed from larger, nearby areas such as Beckley and Charleston. For racers that stayed overnight in the area, 70 percent reported staying in Southern West Virginia. Others reported staying elsewhere, with 10 percent staying in Charleston, and 20 percent staying somewhere not listed.

**Figure 6: Which Area Did Racers Stay During the Event? (N = 298)**

- Southern WV (Beckley, Princeton, Oak Hill, Fayetteville) 70%
- Other Area 20%
- Charleston 10%

*Source: 2018 West Virginia Spartan Race Survey*
The Spartan Race drew many people to visit West Virginia. Such an outdoor and adventure-oriented activity has the same nature as many other attractions in West Virginia. The survey asked if racers plan to return to participate in the West Virginia Spartan Race. The majority of the racers (64 percent) reported that they plan to return to West Virginia. The remaining portion of racers were unsure (30 percent) or do not plan to return to West Virginia (6 percent) (Figure 7). The results suggest that there is a good chance another Spartan Race will take place in West Virginia next year, generating another economic impact for the state economy. Moreover, a return racer is more likely to stay overnight due to their familiarity with the area. The more racers returning could increase the average number of racers staying overnight, which in turn increase the average spending and eventually the overall economic impact of the event.

**Figure 7: Do You Plan to Return to West Virginia? (N = 318)**

![Pie chart showing responses to the question: Do you plan to return to West Virginia? Yes: 64%, Maybe: 30%, No: 6%](image-url)
Using the information provided by the Spartan Inc. as well as from the survey results, we calculate the average spending made by each racer for lodging, meal and beverages, etc. per night. Applying the average spending to non-local racers according to the number of nights they stayed and the type of accommodation they used, we obtain the estimate of racers’ total spending. Adding the spending that the organizers made on local goods and services gives us the estimate of the event’s total direct spending of $3.6 million. This represents the event’s direct output impact. We estimate that this output supported, on an annualized basis, 22 workers who earned a total employee compensation of $0.6 million.

As this direct spending circulated in the state economy, we estimate it generated $1.0 million in secondary output impacts, resulting in a total economic impact of $4.6 million in output. We also estimate that the secondary impact supported 8 additional jobs in the state economy, resulting in a total employment impact of 30 jobs. The overall economic activity associated with the race is estimated to generate a total of $66.4 thousand in selected state and local tax revenue (Figure 8).

**Figure 8: Economic Impact of West Virginia’s 2018 Spartan Race**

<table>
<thead>
<tr>
<th>Impact</th>
<th>Direct</th>
<th>Indirect and Induced</th>
<th>Total</th>
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<td>1.0</td>
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<tr>
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<td>8</td>
<td>30</td>
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<td>Employee Compensation (million $)</td>
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<td>0.3</td>
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</tr>
<tr>
<td>Taxes (thousand $)</td>
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<td>--</td>
<td>66.4</td>
</tr>
</tbody>
</table>

Notes: Tax Revenue impact includes sales, personal income, and corporation net income taxes. Individual components may not sum to total due to rounding.

The total output impact of $4.6 million above considers only dollars spent in the West Virginia economy associated with the 2018 Spartan Race. It is important to note that some of the impact associated with the event is intangible and as a result is difficult to quantify. An example of a major non-quantifiable impact is the exposure that the state’s tourism gets from hosting the event to participants from all over the US as well as abroad. The nature of the Spartan Race itself, which promotes natural and outdoor challenges, fits well with West Virginia’s theme of being a destination for great outdoor experiences. A consolidated effort by interested parties in the state may be able to make this event into an even larger event, thus generating greater economic impact for the state economy.
About the Bureau of Business and Economic Research

Since the 1940s, the BBER’s mission has been to serve the people of West Virginia by providing the state’s business and policymaking communities with reliable data and rigorous applied economic research and analysis that enables the state’s leaders to design better business practices and public policies. BBER research is disseminated through policy reports and briefs, through large public forums, and through traditional academic outlets. BBER researchers are widely quoted for their insightful research in state and regional news media. The BBER’s research and education/outreach efforts to public- and private-sector leaders are typically sponsored by various government and private-sector organizations.

The BBER has research expertise in the areas of public policy, health economics, energy economics, economic development, economic impact analysis, economic forecasting, tourism and leisure economics, and education policy, among others. The BBER has a full-time staff of three PhD economists and one master’s-level economist. This staff is augmented by PhD student research assistants. The BBER also collaborates with affiliated faculty from within the College of Business and Economics as well as from other parts of WVU.

To learn more about our research, please visit our website at http://www.be.wvu.edu/bber.