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An Importance-Performance Analysis of the Bike Virginia Event

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Cover Page Footnote

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Road cycling has grown in popularity, and events that cater to these dedicated recreationists can fulfill needs for both participants and hosts alike. The Bike Virginia Tour is a 6-day cycling event that celebrates long distance riding while participants enjoy scenic and natural environments. This event is held at a new location within the state of Virginia each year and it has significant economic impacts for the host sites. Event location attributes lead directly to participant satisfaction and subsequent decisions of where to hold the event each year. The purpose of this study was to use Importance-Performance Analysis to investigate and evaluate host site attributes, in order to aid future decision-making as well as gain an understanding of the attributes that are important to this growing segment of recreationists. An online survey captured input from 294 respondents, and results were analyzed based on the sections of the event in which they participated. Attributes such as condition of roadways, friendliness of locals, nearby amenities, traffic conditions and availability of bike lanes were considered important by recreationists, though some were not met with satisfaction by the host site location. Additionally, when results are broken down by different host site locations, certain attributes shift in importance and satisfaction among cycling participants. Management implications include planning bike lanes according to local traffic patterns, establishing cycling event schedules that consider temporal traffic patterns, planning riding routes that make use of well-managed roads or established bike routes, and conducting an internal review of community constituents to ascertain their understanding and willingness to host cyclists.

Keywords: Importance-Performance Analysis, cycling, bike route planning

1.0 Introduction

Outdoor recreation and tourism have recently grown in popularity across many segments of participation throughout many areas of the United States. Bicycle recreation in particular has had tremendous growth in both on and off-road participation (Ritchie, 1997; Lamont, 2009; Lange, 2021). Specifically, road cyclists – those who ride on public roads or paved trails - tend to be dedicated participants, with disposable income and strong preferences for the types of conditions and attributes of the cycling experience they seek. Because of this, hosting events that cater to this committed group of participants, who also hold clear opinions as to the experiences they prefer, can be challenging.

1.1 Bike Virginia Tour

The Bike Virginia Tour, hosted each summer by the 501(C)(3) non-profit organization *Bike Virginia,* has continued to draw large groups of dedicated riders from across the globe for over 30 years. The Bike Virginia tour is an annual “6 day cycling festival of 1,700 riders from across the US and international locations…that travels around the Commonwealth to a different region each year… to feature Virginia’s most historic and scenic regions” (bikevirginia.org). The tour provides an opportunity for riders to experience different locations across the state and offers the host areas opportunities to experience this large influx of cycling enthusiasts.

Each year, the organization has to make decisions as to where to host the event, and being chosen as a host site has significant economic impacts (Duncan and Carroll, 2019) as well as opportunities for increased tourism, recognition, and pride within the community.

The Bike Virginia tour was cancelled due to COVID-19 in 2020 and 2021. However, in 2018 the Bike Virginia Tour was held in the New River Valley region of Virginia, which is located in the southwestern portion of the state and is traditionally less known and more remote than other locations that the tour has been held. To have the tour hosted in this region was certainly a boon for local business and tourism offices throughout the four-county region.

1.2 Host Sites

Located along the I-81 corridor in southwest Virginia lies the New River Valley. The scenic and historic region is "situated between the Blue Ridge Mountains to the south, and the Appalachian Mountains to the north, and is home to the nation's oldest river, the New River" (explorenewrivervalley.com). The New River Valley consists of one independent city (Radford) and four counties (Floyd, Giles, Montgomery, and Pulaski). These counties encompass ten interconnected towns (Blacksburg, Christiansburg, Dublin, Floyd, Glen Lyn, Narrows, Pearisburg, Pembroke, Pulaski, and Rich Creek) (newrivervalley.org). Though each of the small-town communities in the area has its own "unique and welcoming vibe," the "region is defined as a Metropolitan Statistical Area (Blacksburg-Christiansburg-Radford MSA) due to its high degree of economic and social integration" (newrivervalleyva.org).

The New River Valley is located between the mountains to the north and south, along the New River, and close to Claytor Lake, a 4,472 acre and 21-mile-long reservoir that "caters to the outdoor enthusiast and those that love the mountain lifestyle. It offers abundant recreation activity options for those who like to bike, trail run, hike, kayak, and more" (newrivervalley.org). As such, regional tourism is a vital component to the economic makeup of the region and the incomes of the populations of its interconnected towns. To illustrate this importance, Claytor Lake State Park alone brought an economic impact of $8.1 million to Pulaski County in 2017 (Virginia Outdoors Plan, 2018), a figure that is similar to the 2013 results (Virginia Outdoors Plan, 2013). The park's tourism impact is one that is consistently significant for the area. More generally, in 2016 tourism in the New River Valley saw expenditures of $266,471,176 for the area, accounting for 2,641 area jobs and over $6 million in local tax receipts (nrvdata.org). With a population of under 200,000, these tourism expenditures amounted to nearly $1,500 per capita, a sizeable sum for an area with a mean per capita income of approximately $23,000 (nrvdata.org).

While the New River Valley is home to a number of tourism and recreational activities, one regional goal has been to develop additional bike routes through the area and better connect the townships along the major, non-interstate roads for cyclists (Virginia Outdoors Plan, 2013). Improved biking access has been an area of demand for households in the region, with 46% of households requesting improved "Trails for Biking" in 2011 (Virginia Outdoors Plan, 2013). The Virginia Outdoors Plan (2018) shows a similar 46% request for "Trails", though it does not break down bicycling versus hiking trails in the same format as the 2013 plan did. However, bicycling continues to top the list for participation of all wheeled activities in the state (Virginia Outdoors Plan, 2018).

Cycling in the New River Valley is an important source of tourism and recreation as the region is home to "more than 30 road rides, 58 optional/alternate routes, and nearly a dozen off-road rides" (Simmons, et al, 2015). With relatively low traffic volumes when not on the interstate, the "New River Valley features an extensive secondary road network that interconnects community centers, neighborhoods, and open landscapes. The routes meander along valley bottoms, through meadows,

across hilltops, and offer a panoramic view of mountain sides, streams, and an abundance of wildlife" (Simmons, et al, 2015).

Though the annual tour is hosted in regions across the state, it has been held specifically in the New River Valley region in 2002, 2011, and 2018. In the most recent tour, Bike Virginia 2018 was held in the city of Radford and the county of Pulaski from June 22-27. The first three days of the event were hosted in Radford with a campsite established in the city's Bisset Park. The second three days of the event were hosted in Pulaski County with a campsite in Dublin, VA at Claytor Lake State Park. Participating cyclists were able to register for the Radford portion, the Dublin portion, or both portions of the event. According to Bike Virginia's registration records for 2018, there were 1,625 total participants with 36% attending Radford only, 10% attending Dublin only, and 54% doing both the Radford and Dublin portions of the event.

1.3 Importance Performance Analysis

Due to the importance and benefits of attracting and sustaining such large cycling events, it is imperative that government officials, tourism offices, recreation managers, stakeholders, and event planners understand what these participants are seeking and how the host sites are measuring up to these interests (Dwyer et al, 2016; Rasovska et al, 2021). One tool that is invaluable to understand how visitors perceive the importance of certain attributes, coupled with how these visitors evaluate the performance of the site for delivering these attributes, is Importance-Performance Analysis (IPA). IPA is a simple and effective instrument that is widely used across very diverging applications within the recreation and tourism field, that results in direct management action areas to focus limited resources. IPA works by measuring the level of importance respondents place on certain attributes of a site, experience, or opportunity, and then having these respondents also indicate how the site or experience performed on these attributes. Typically, this is done through survey questions on site or shortly after a visit, and the results allow stakeholders to quickly see areas of importance that may need more attention or work. Typically results provide a four-quadrant graphic that can have *importance* on the y-axis, and *performance* on the x-axis, though these have been depicted with either attribute on either axis (Mimbs, et al. 2020; Hendricks, Schneider, Budruk, 2004; Gill, Bowker, Bergstrom, Zarnoch, 2010).

The four quadrants are depicted and labelled accordingly where an area of high importance and high performance would indicate "keep up the good work," whereas an area of high importance but low performance would show as "concentrate efforts here." The final two quadrants would be low importance and high performance or "possible overkill" and low importance and low performance which would be "low priority" (Figure 1.).

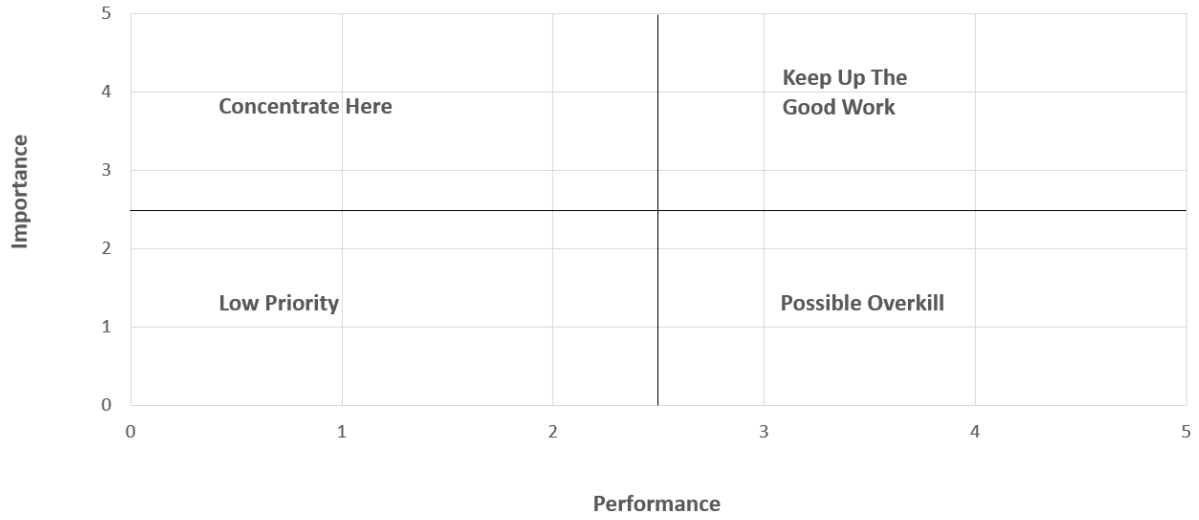


Figure 1. Importance-Performance matrix

Importance-Performance has been used in many areas, with its earliest use being at car dealerships (Martilla and James, 1977), and has grown quickly within the recreation and tourism arena in studies on skiing (Hudson and Shepard, 1998), trout stream access points (Mimbs et al. 2020), perceptions of elected and appointed officials of recreation sites (Powers et al. 2021), to examine tourist security issues (Jurado, and Moatovelle, 2019), and evaluations of user perceptions of greenways (Samuel and Boley, 2019). IPA has been used in evaluating experiential learning programs (Pitas, Murray, Olsen and Graef, 2017), assessing differences in perceptions of site attributes between frequent and infrequent visitors (Gill, Bowker, Bergstrom, Zarnoch and Stanley, 2010), in conjunction with benefit-based management (Hendricks, Schneider, Budruk, 2004), in marine recreation contexts (Jang, Cho, and Lee, 2020; Simpson et al., 2020; Lukoseviciute, and Panagopoulos, 2021), assessing resident evaluations of public parks (Liu, Mehlaf and Gray, 2019), and to evaluate public spaces on a university campus (Addas, Maghrabi, Goldblatt, 2021). Luck (2015) used IPA to assess backpackers' evaluation of conditions they encountered. IPA has also been used to evaluate nature-based tourism development efforts (Marasinghe, Perera, Simpson, and Newsome, 2021), in therapeutic recreation contexts (Scholl, Glanz, and Davison, 2006), to determine passenger perceptions of airport services (Prebezac, Mikulic, and Jurkovic, 2010), to evaluate perceptions of theme parks (Cheng, Jingjing, and Ling, 2016), and in destination management applications (Hailong and Jimura, 2019; Erbas and Percin, 2015; Hunt, Scott, Richardson, 2003; Rasovska, Kubikova, and Ryglova, 2021; Mustafa, Omar, and Mukhiar, 2020; Lacher, and Harrill, 2010).

Importance-Performance is not without its methodological issues. Some studies have indicated that IPA should separate groups of respondents (e.g., tourists from residents) in the data (Boley, McGehee, and Hammett, 2017; Mimbs et al., 2020), while others have suggested that merely reporting IPA results falls short of conducting statistical analyses on results to look for significant differences in reported scores (Gill, Bowker, Bergstrom, and Zarnoch, 2010; Lai and Hitchcock, 2015). The scales used in IPA studies also often range from three-point scales to seven-point scales. This is not an issue within each individual study but does make comparisons across studies more challenging (Hendricks, Schneider, Budruk, 2004). The appropriate form of central tendency is also debated (Hendricks, Schneider, Budruk, 2004), though Martilla and James (1977) suggested using mean if median and means are close.

In this study, these methodological issues are almost entirely circumvented. First, this is because the sample is treated as a homogenous group since it is comprised of participants of one cycling event. Second, the use of the mean in this study was a good measure of central tendency since mean and median were quite close. Finally, the scale used in this study was a 5-point scale for *performance* and a 4-point scale for *importance* which effectively gave *performance* slightly more variability, allowing greater detail in results to be teased out for the *performance* variable. These scales are widely used and easily interpreted by respondents, and no plans for cross study comparisons are forecasted, which is one of the challenges of the various scales used in IPA studies. In short, the researcher must choose a scale to use that makes sense based on the data sought, and intuitive sense to both researchers and respondents, as the authors have done in this study.

Importance-Performance Analysis can function as a powerful tool to help evaluate experiences such as participation in a major event. By gathering data on what attributes are perceived as important and how the host community or event is delivering on these attributes, direct and effective management efforts for future applications can be identified. Using IPA on the Bike Virginia event will produce direct management action items and help stakeholders to focus limited resources in order to have the most valuable impact on visitor satisfaction for future events.

2.0 Methods

An online survey was developed by the authors to capture visitor perceptions and the economic impacts of the event. The authors coordinated with the Bike Virginia organization to ensure the survey design maximized gathered information but was also kept brief in accordance with the organization's wishes. As the organization also provides participants with its own event evaluation survey, the authors also ensured that the perception questions focused on the area more than the operations of the event itself. This was done to avoid overlap that may reduce responses for either survey instruments. The attributes included were those deemed the most central to the specific nature of the cycling event. Roadway conditions, the availability of bike lanes, and traffic conditions seemed of particular relevance, while the perceptions of the local population and the area's amenities were attributes that would be useful to more general tourism enterprises as well. These attributes also paired well with the economic data collected regarding lodging and other local expenditures.

Twelve days after the event, potential respondents were emailed a Qualtrics survey link through the Bike Virginia organization's registration list by Bike Virginia staff on behalf of the authors of this study. The Qualtrics survey link was embedded into an emailed letter in accordance with the authors' organizational IRB procedures. The link remained active from July 9 until August 11, 2018, providing respondents a one-month period in which to respond. This period of length seemed appropriate given the detailed spending information requested by the survey and the saliency of visitor perceptions. Information on respondents' general demographics, spending patterns, and perceptions of the region was requested in order to provide the authors a clear picture of the study population, their economic impact, and their opinions of the localities as tourist destinations. The majority of respondents completed the survey within the first two weeks of its availability.

The survey contained screening questions to allow participants to select whether they participated in either Radford, Dublin (Claytor Lake), or both portions of the event. This allowed researchers to break down Importance-Performance data based on which locations the respondents participated. Respondents were asked to indicate their level of satisfaction with several attributes measured on a scale of 1 (very unsatisfied) to 5 (very satisfied) with 3 being "neutral". See Appendix

A for an excerpt of the survey. The economic impact portion of the survey has been omitted for brevity. Detailed information on the economic impacts of this event is reported in Duncan and Carroll (2019). These measurements were used as the *performance* measures. Respondents were also asked to indicate how important each of these attributes was in impacting their likelihood of returning to the host destination(s) on a scale of 1 (not at all) to 4 (a lot). This information provided the *importance* measures.

3.0 Results

Bike Virginia's registration records indicate that in 2018 there were 1,625 total participants with 36% attending the Radford only section, 10% doing the Dublin only section, and 54% doing both the Radford and Dublin portions of the event. Each attendee was sent a link to the electronic survey and 294 usable surveys were returned for a response rate of 18%. Of those respondents, approximately 30% of the sample completed only the Radford portion of the event, about 11% completed the Dublin portion, and approximately 59% completed both the Radford and Dublin portions of the event. The percentages of the respondents participating in this study for each portion of the event are very close to the actual percentages of participation according to the Bike Virginia registration records (30% vs. 36%; 11% vs. 10%; and 59% vs. 54%). This suggests that the survey sample is a sound representation of the full participant population.

Sixty-nine percent of participants were over 55 years old. Sixty-five percent of the sample were male, and 35% were female. The average distance travelled to attend the event was 356 miles, and 98% percent of respondents indicated that the Bike Virginia event was their main reason for coming to the host location. Economic impacts of the event were significant, with $1.76 million generated at the base site and $644,000 of off-site spending. Average onsite spending per person for those attending Radford only was $499, while Dublin only was $702, and for those attending both portions of the event was $822 per person. Offsite spending averages were $397 for Radford only, $430 for Dublin only, and $393 for those attending both portions of the event. The majority of the spending was on lodging, followed by restaurants, and then groceries. A detailed breakdown of spending can be found in Duncan and Carroll (2019).

The attributes measured for Importance-Performance were *availability of bike lanes, traffic conditions, nearby amenities, friendliness of locals,* and *condition of roadways.* The location of the "crosshairs" of the Importance-Performance measurement grid were located at 3.5 for *performance* (which is halfway between "neutral" and "satisfied") and 2.5 for *importance* (which is halfway between "a little" and "moderate") (Graph 1).

For those participants that attended both sections of the event, all attributes were deemed *important* and impacted their likelihood of returning *moderately.* Additionally, respondents were *satisfied* with all attributes except *availability of bike lanes* (Figure 1).

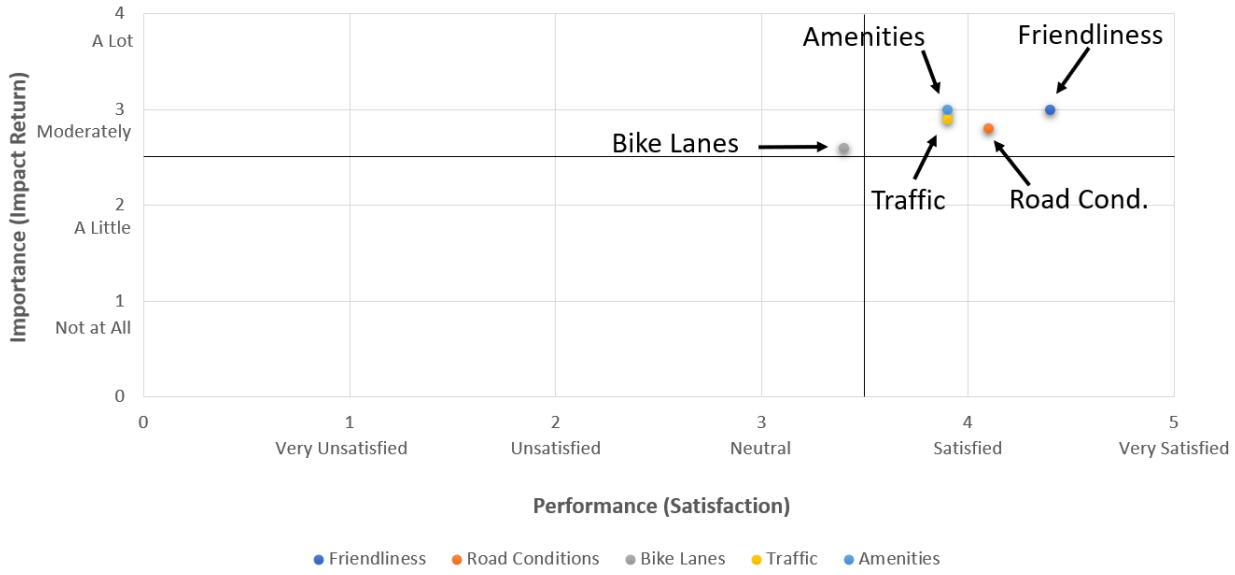


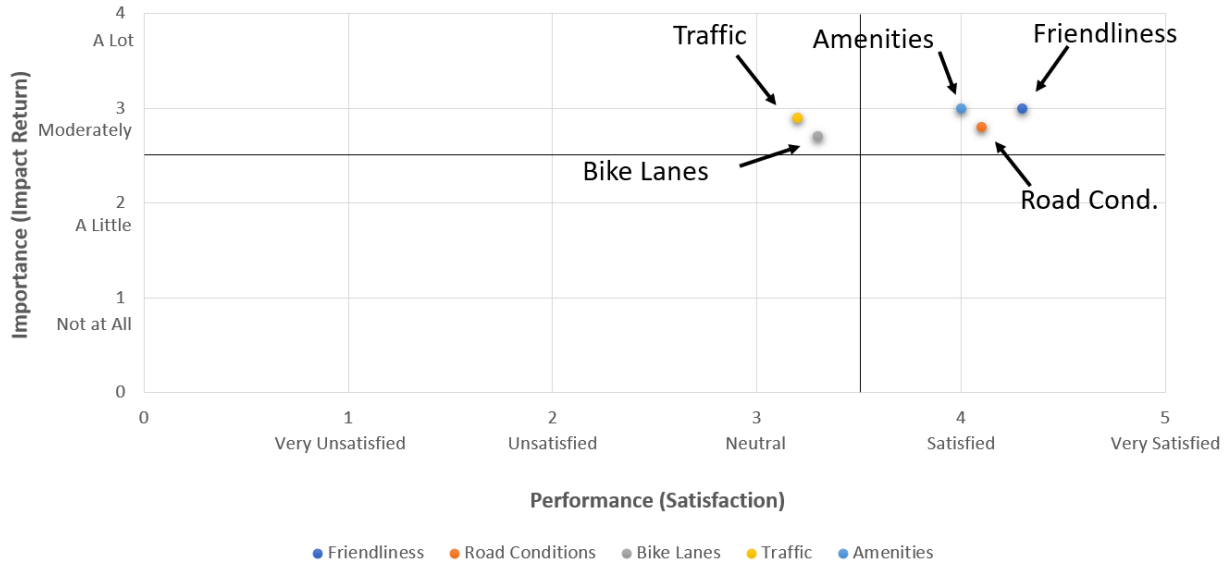
Figure 1. Importance-Performance graph for participants of both portions of the Bike Virginia event

The most important attributes were *amenities* and *friendliness of hosts,* and these attributes also scored high for performance. The highest performance scores were found for *friendliness of hosts*, and *road conditions* (Table 1).

Attribute	Importance	Performance
Amenities	3.0	3.8
Bike Lanes	2.6	3.4
Friendliness of Hosts	3.0	4.4
Road Conditions	2.7	4.2
Traffic Conditions	2.8	3.8

Table 2. Importance-Performance scores for participants of both portions of the Bike Virginia event

When the sample is broken down by which portion of the event they attended, the results shift. For the Radford only participants, *condition of roadways, friendliness of locals,* and *nearby amenities* all appear *important* and respondents are generally *satisfied* with them. *Traffic conditions* and *availability of bike lanes* were both considered *important* by respondents, however they both fell short on *performance* (Figure 2).



Graph 2. Importance-Performance graph for participants of the Radford portion of the Bike Virginia event

For the Radford section of the event, the highest scoring attributes for importance were again found for *amenities* and *friendliness of hosts,* and the performance scores were still satisfactory (Table 2). Highest performance measures were similarly found for *friendliness of hosts,* and *road conditions.*

Attribute	Importance	Performance
Amenities	3.0	4.0
Bike Lanes	2.6	3.3
Friendliness of Hosts	3.0	4.3
Road Conditions	2.7	4.2
Traffic Conditions	2.8	3.2

Table 2. Importance-Performance scores for participants of the Radford, VA portion of the Bike Virginia event

For those attending the Dublin only section of the event, *condition of roadways, friendliness of locals,* and *nearby amenities* were all considered *important* and respondents were *satisfied* with them. T*raffic conditions* were considered *important* by respondents, but the *performance* on this measure was low. Interestingly, *availability of bike lanes* diminished in *importance,* and also scored low on *performance* (Figure 3).

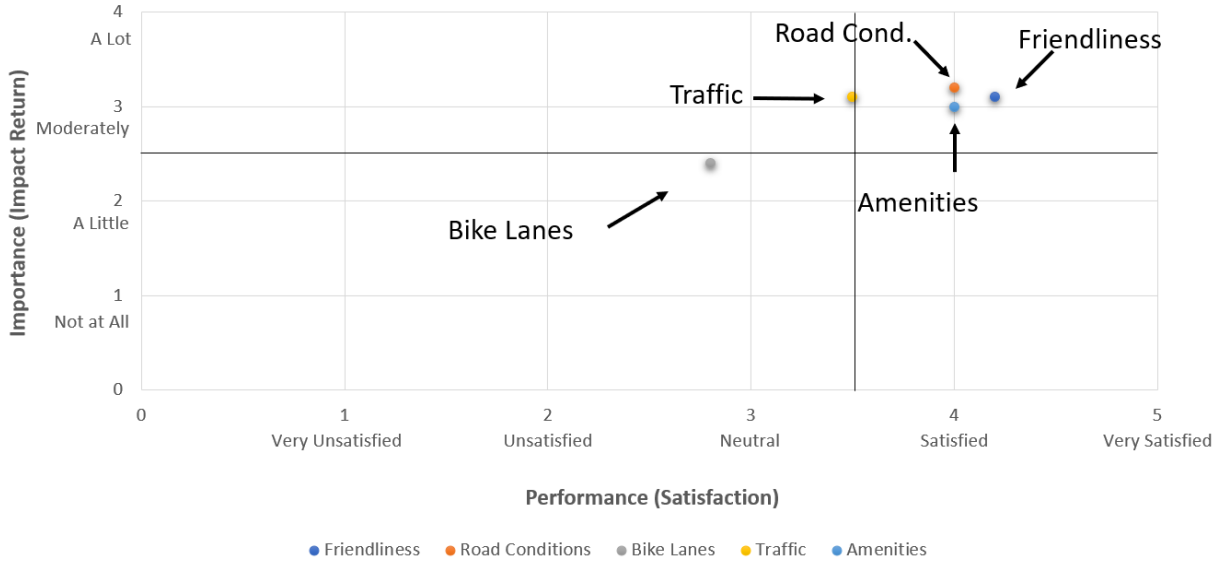


Figure 3. Importance-Performance graph for participants of the Dublin portion of the Bike Virginia event

The highest scores for importance during the Dublin portion of the event were found for *friendliness of hosts, road conditions,* and *traffic conditions* (Table 3). Performance was highest for *friendliness of hosts, road conditions,* and *amenities.*

Attribute	Importance	Performance
Amenities	3.0	4.0
Bike Lanes	2.4	2.8
Friendliness of Hosts	3.1	4.2
Road Conditions	3.1	4.0
Traffic Conditions	3.1	3.5

Table 3. Importance-Performance scores for participants of the Dublin, VA portion of the Bike Virginia event

4.0 Conclusions and Implications

Bike Virginia appears to provide major economic impacts for the host locations. Significant economic impacts were documented, and host communities should be aware of the importance of recognizing the attributes that attendees find important, and how the host community performed on these attributes. This information provides feedback to be used in planning and design of future host endeavors.

4.1 Overall Sample

Looking at the sample as a whole, respondents overall indicated that all attributes were important and impacted their likelihood of returning. This means that *condition of roadways, friendliness of locals, nearby amenities, traffic conditions* and *availability of bike lanes* were all considered *important*. For large-scale cycling events, these attributes should certainly be considered during planning and implementation. All these attributes showed satisfactory performance in the overall sample, except *availability of bike lanes.* This is not surprising as this region is predominantly characterized by rural secondary roads that tend to be narrow, with few if any bike lanes outside of Radford city limits. Even within city limits, bike lanes are concentrated mostly around the downtown

and Radford University area. If the city seeks to attract future cyclists and cycling events, new road projects should certainly contain plans for increased bike lanes for this type of travel.

4.2 Radford Sample

When the data were analyzed for those attending only the Radford portion of the event, there were some shifts in results. *Condition of roadways, friendliness of locals,* and *nearby amenities* were *important* and respondents were generally *satisfied* with them. *Traffic conditions* and *availability of bike lanes* however, were both considered *important* by respondents, but they were evaluated low for *performance.* This indicates that bike lanes and traffic conditions are particular areas that the city could focus on to improve the likelihood of a return of this type of event and visitor. Additionally, this event took place during summer, where the Radford population greatly decreases due to Radford University students being gone for summer break. Perhaps a consideration of current traffic patterns, and identification of where bike lanes are most needed to ensure commuter safety and recreational access to major attractions, would be very valuable in this and similar locations. With the tremendous economic impacts that a return of this event could bring, these items may become significant areas of focus for future city planning and development efforts.

4.3 Dublin Sample

When the data were analyzed for those attending only the Dublin portion of the event, another shift in results was identified. *Condition of roadways, friendliness of locals,* and *nearby amenities* were deemed as important and respondents indicated solid performance for these items. *Traffic conditions* were similarly indicated as important but performance on this item suffered. This may be due to the fact that the Dublin portion of the event took place from a Monday to Wednesday, where traffic conditions can be higher due to daily commutes. Interestingly, *availability of bike lanes* dropped for importance, and also scored low for performance. This is not very surprising as this area is very rural, and cyclists may not expect bike lanes to be present on these country roads, and indeed they are not.

4.4 Management Implications

For potential host sites planning to attract cyclists or host cyclist-specific events it would be recommended that they consider several attributes within their community. First, the *availability of bike lanes*, which can have direct impacts upon the riding experience, sense of safety, and general enjoyment of the experience should be carefully considered. *Traffic conditions* are closely linked to bike lanes and should be considered on a temporal scale. For example, understanding your community and its traffic patterns can have a significant impact on the experience of cyclist visitors or event participants. Similarly, *road conditions*, can significantly affect the riding experience. Planning riding routes that make use of recently paved roads or established bike routes can be very effective at ensuring a positive experience from cycling visitors. Visitors come with their own set of needs as they are outside of their normal area of life and work. Therefore, *nearby amenities* can have a powerful impact on their ability to meet their needs and ultimately have a satisfactory experience. Positioning bike routes for events and establishing event centers within easy reach of nearby amenities seems sensible and worthy of planning into event design. Finally, *friendliness of locals* seems to impact satisfaction and likelihood of returning to an event for cyclists. For this reason, it is advisable that a community aspiring to host a large-scale cycling event or attract cyclists in general take an internal look at their community constituents, and the motivations and abilities of the local community to welcome cycling visitors. Because road cyclists are putting themselves in a vulnerable

position when sharing roadways with automobiles, having a community that understands and has compassion for cyclists can be very important.

Importance-Performance continues to be a useful tool for recreation experience evaluation and provides valuable information for those charged with making management and planning decisions. The information it provides is intuitive, and easy to use in order to help guide future recreation management action and planning. As used in this study, IPA provides direct input for effective event design, tourism planning, and recreation management.

4.5 Future Research

A tool such as IPA can be used in a multitude of scenarios, and is useful for recreation planning. Future research in cycling events could look at different aspects of the event, host communities, and site conditions. To effectively evaluate the event, attributes such as *ease of registration, value-cost relationships, availability of information, effective communication,* and *overall satisfaction* could be helpful to investigate. For the host community, attributes such as a *welcoming atmosphere, local support,* and *availability of information* could be valuable. Finally, for site conditions, attributes such as *cyclist-friendly routes, aid stations, terrain, bailouts, lodging options,* and *other amenities* could be helpful information to collect and evaluate.

Literature Cited

Addas, A., Maghrabi, A., and Goldblatt, R. (2021) Public Open Spaces Evaluation Using Importance-Performance Analysis (IPA) in Saudi Universities: The Case of King Abdulaziz University, Jeddah. *Sustainability*, 13 (2).

Boley, B.B., McGehee, N.G., and Hammett A.L.T. (2017) Importance-performance analysis (IPA) of sustainable tourism initiatives: The resident perspective, *Tourism Management*, 58 (1).

Cheng, Q., Jingjing, G., and Ling, S. (2016) Fuzzy importance-performance analysis of visitor satisfaction for theme park: the case of Fantawild Adventure in Taiwan, China. *Current Issues in Tourism*, 19 (9).

Duncan, T.K. and Carroll, J. (2019). The Economic Impact of Bike Virginia. *Virginia Economic Journal*, 1 (1).

Dwyer, L., Dragicevic, V., Armenski, T., Mihalic, T., and Cvelbar, L.K. (2016) Achieving destination competitiveness: an importance-performance analysis of Serbia. *Current Issues in Tourism*, 19 (13).

Erbas, E. and Percin, N. (2015). Competitive Importance Performance Analysis (CIPA): An Illustration from Thermal Tourism Destinations* *Business and Economics Research Journal*, 6 (4).

Gill, J., Bowker, J. M., Bergstrom, J. and Zarnoch, S. (2010) Accounting for trip frequency in importance performance analysis. *Journal of Park and Recreation Administration*, 28 (1).

Hailong, W., and Jimura, T. (2019). Exploring an Importance–Performance Analysis approach to evaluate destination image. *The Journal of the Local Economy Policy Unit.* 34 (7).

Hendricks, W., Schneider, I. and Budruk, M. (2004) Extending Importance performance Analysis with Benefit Based Segmentation. *Journal of Park and Recreation Administration*, 22 (1).

Hudson, S. and Shepard, WH G. (1998). Measuring service quality at tourist destinations: An Application of importance-performance analysis to an alpine ski resort. *Journal of travel & tourism marketing,* 7 (3).

Hunt, K., Scott, D., and Richardson, S. (2003) Positioning Public Recreation and Park Offerings Using Importance Performance Analysis. *Journal of Park and Recreation Administration*, 21 (3).

Jang, D. Woojeong, C. and Lee, K. (2020). A Study on the Development Strategy for Marine Leisure Tourism: Using the Importance Performance Analysis (IPA) Method, *Sport Mon*, 18 (1).

Jurado, K. and Moatovelle, P. (2019) Assessment of tourist security in Quito city through importance-performance analysis. Tourism: *An International Interdisciplinary Journal*, 67 (1)

Keith, S. and Boley, B. (2019) Importance-performance analysis of local resident greenway users: Findings from Three Atlanta BeltLine Neighborhoods. *Urban Forestry and Urban Greening*, 44 (126426).

Lacher, G. and Harrill, R. (2010). Going beyond sun, sand, and surf? An importance-performance analysis of activities in a 3S resort destination. *E-review of Tourism Research*, 8 (4).

Lai, I.K.W and Hitchcock, M. (2015) Importance-performance analysis in tourism: A framework for researchers. *Tourism Management*, 48 (1).

Lamont, M. (2009). Reinventing the Wheel: A Definitional Discussion of Bicycle Tourism. *Journal of Sports and Tourism*, 14 (1).

Lange, D. (2021). Cycling - statistics and facts. Retrieved February 23, 2021. https://www.statista.com/topics/1686/cycling/#topicHeader__wrapper

Liu, H., Mehlaf, J. and Gray, J. (2019) Public Perception of Parks and Recreation. *Recreation, Parks, and Tourism in Public Health*, 3, 17-26. DOI:10.2979/rptph.3.1.03

Luck, M. (2011) An Importance-Performance Analysis of Backpackers at Robinson Crusoe Island Resort, Fiji. *School of Hospitality and Tourism*, ISSN: 1997-2520; e-ISSN: 2014-4458.

Lukoseviciute, G. and Panagopoulos, T. (2021) Management priorities from tourists' perspectives and beach quality assessment as tools to support sustainable coastal tourism. *Ocean and Coastal Management*, 208 (105646).

Marasinghe, S. Perera, P. Simpson, G. and Newsome, D. (2021) Nature-based tourism development in coastal wetlands of Sri Lanka: An Importance-Performance analysis at Maduganga Mangrove Estuary. *Journal of Outdoor Recreation and Tourism*, 33 (100345).

Martilla, J. and James, J. (1977). Importance-Performance Analysis. *Journal of Marketing*, 41 (1).

Mikulic, J. (2019). Derived-importance performance analysis as a tool to identify priorities for destination product development. *Business Excellence*, 13 (1).

Mimbs, B., Boley, B., Bowker, J.M, Woosnam, K. and Green, G. (2020). Importance-performance analysis of residents' and tourists' preferences for water-based recreation in the Southeastern United States. *Journal of Outdoor Recreation and Tourism,* 31, (100324).

Mustafa, H., Omar, B. and Mukhiar, S. (2020) Measuring destination competitiveness: an importance-performance analysis (IPA) of six top island destinations in Southeast Asia. *Asia Pacific Journal of Tourism Research*, 25 (3).

NRVC Data Dashboard. 2021. Retrieved December, 9, 2021. http://nrvdata.org/

New River Valley. 2021. New River Valley: A Natural Fit" Retrieved December 9, 2021. http://nrvdata.org/

Pitas, N. Murray, A. Olsen, M. and Graefe, A. (2017) A Modified Importance-Performance Framework for Evaluating Recreation-Based Experiential Learning Programs. *Journal of Extension*, 55 (1).

Powers, S., Pitas, N., Barrett, A., Graefe, A. and Mowen, A. (2021). Local Policy Makers' Community Priorities and Perceived Contributions of Parks and Recreation. *Journal of Park and Recreation Administration*, 39 (3).

Prebezac, D., Mikulic, J. and Jurkovic, P. (2010). Passenger perceptions of airport service performance – a three-dimensional importance performance analysis. *Acta Turistica*, 22 (2).

Rasovska, I., Kubickova, M. and Ryglova, K. (2021) Importance-performance analysis approach to destination management. *Tourism Economics*, 27 (4).

Rithcie, B.W. (1998) Bicycle Tourism in the South Island of New Zealand: Planning and Management Issues. *Tourism Management*, 19 (6)

Samuel, J. and Boley, B. (2019). Importance-performance analysis of local resident greenway users: Findings from Three Atlanta BeltLine Neighborhoods. *Urban Foresty and Urban Greening*.

Scholl, K., Glanz, A. and Davison, A. (2006) Importance-Performance Analysis of Supportive Recreation Inclusion Services: Community Agency Perspective. *Journal of Park and*

Recreation Administration, 24 (2)

Simmons, G., Harrah, K., Pynn, D., Eustis, J., Oravetz, T. and J. McGlumphy. 2015. "Cycling in the New River Valley," New River Valley Regional Commission and New River Valley Bicycle Association. Retrieved June 3, 2019: http://nrvrc.org/cyclingguide/

Simpson, G., Patroni, J., Teo, A., Chan, J. and Newsome, D. (2020) Importance-performance analysis to inform visitor management at marine wildlife tourism destinations. *Journal of Tourism Futures*, 6 (2).

Tahir, A. and Meltem, C. (2011). Importance-Performance Analysis: A Sample About Destination Management. *Aegean Academic View*, 11 (4).

Virginia Department of Conservation and Recreation. 2013. "2013 Virginia Outdoors Plan," Retrieved January 24, 2019: https://www.dcr.virginia.gov/recreational-planning/vop2

Virginia Department of Conservation and Recreation. 2018. "2018 Virginia Outdoors Plan" Retrieved November 9, 2020: https://www.dcr.virginia.gov/recreational-planning/document/vopall2018.pdf

Wu, H. and Jimura, T. (2019). Exploring an Importance-Performance Analysis approach to evaluate destination image. *Local Economy: The Journal of the Local Economy Policy Unit*. 34 (7).

Appendix A: Bike VA Perception Survey Questions

<table>
<tr><th colspan="2">ABOUT YOUR TRIP (EVERYONE ANSWERS)</th></tr>
<tr><td>What distance did you travel to attend Bike Virginia (in miles)?
0-10 10-20 20-30 30-50 Other _____

HOUSEHOLD MEMBERS ON TRIP
1 2 3 4 5 6 Other
Total Write In
(including yourself)
0 1 2 3 4 5 Other
Number under 18 Write In
years</td><td>MAIN DESTINATION OF TRIP (Choose One)

Radford
Dublin/Claytor Lake
Both Radford and Dublin/Claytor Lake

NIGHTS AWAY FROM HOME ON ENTIRE TRIP
NONE
Number of nights you plan to be away from home on entire trip nights</td></tr>
<tr><th>IF ANY NIGHTS AWAY FROM HOME</th><th></th></tr>
</table>

LODGING NIGHTS (have or plan to spend in each location before returning home from trip)

	Dublin/ Radford # of nights	Claytor Lake # of nights
Event Headquarters	_____	_____
Hotel, resort, lodge, etc.	_____	_____
Motel		
B&B	_____	_____
Campground/RV Park	_____	_____
Other paid lodging	_____	_____
Private home or cottage	_____	_____
(unpaid)		
Other unpaid lodging		

NUMBER OF DIFFERENT DAYS VISITED/PLAN TO VISIT RADFORD ON *THIS* TRIP

WRITE IN # OF DAYS

EVERYONE ANSWERS

HOUSEHOLD MEMBERS WHO WENT TO EVENT

	1	2	3	4	5	6	Other
Total (including yourself)							WRITE IN
	0	1	2	3	4	5	Other
Number under 18 years							WRITE IN

EVERYONE ANSWERS

IMPORTANCE OF EVENT IN DESTINATION CHOICE

Choose the number below that best describes how important Bike Virginia was in your decision to visit Radford on this trip, where 0 indicates *no influence* and 10 is that Bike Virginia *is the main single reason* for visiting Radford on this trip.

No Influence — Main Reason — Don't Know

0 1 2 3 4 5 6 7 8 9 10 X

IS THIS TRIP REPLACING A DIFFERENT TRIP?

Would you have come to Radford or Dublin/Claytor Lake in the next three months if you had not come at this time for Bike Virginia?

Radford	Dublin/Claytor Lake
No	No
Yes	Yes

FUTURE TRAVEL PLANS

Choose the number below that best describes the likelihood (in percentages) of returning to the area in the next 2 years?

Radford:

Not at all	Not Likely	Maybe	Probably	Definitely
0%	25%	50%	75%	100%

Claytor Lake/Dublin:

Not at all	Not Likely	Maybe	Probably	Definitely
0%	25%	50%	75%	100

ABOUT YOU AND YOUR HOUSEHOLD (OPTIONAL)

Age of Participants (Check all that apply)

18-24 years old
25-34 years old
35-44 years old
45-54 years old

GENDER

Male
Female

Perception of the Experience:

How many times have you visited to following locations before this trip?

Radford: 0 1 2 3 4 5 6 7 8 9 10 11 or more
Claytor Lake State Park: 0 1 2 3 4 5 6 7 8 9 10 11 or more

Please rate your Overall Satisfaction with **Radford** for the following attributes AND how much each attribute influences your decision to make a return trip

	Overall Satisfaction						Influence on Decision to Return			
	1 Very Unsatisfied	2 Unsatisfied	3 Neutral	4 Satisfied	5 Very Satisfied		1 Very Little	2 A Little	3 Somewhat	4 A lot
Friendliness of Locals	1	2	3	4	5		1	2	3	4
Roadway Conditions	1	2	3	4	5		1	2	3	4
Availability of Bike Lanes	1	2	3	4	5		1	2	3	4
Traffic Conditions	1	2	3	4	5		1	2	3	4
Amenities	1	2	3	4	5		1	2	3	4

Please rate your Overall Satisfaction with **Claytor Lake Sate Park** for the following attributes AND how much each attribute influences your decision to make a return trip

_____	Overall Satisfaction						Influence on Decision to Return			
	1 Very Unsatisfied	2 Unsatisfied	3 Neutral	4 Satisfied	5 Very Satisfied		1 Very Little	2 A Little	3 Somewhat	4 A lot
Friendliness of Locals	1	2	3	4	5		1	2	3	4
Roadway Conditions	1	2	3	4	5		1	2	3	4
Availability of Bike Lanes	1	2	3	4	5		1	2	3	4
Traffic Conditions	1	2	3	4	5		1	2	3	4
Amenities	1	2	3	4	5		1	2	3	4