Importance-performance analysis (IPA) of sustainable tourism initiatives: The resident perspective

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HIGHLIGHTS

- IPA of sustainable tourism initiatives applied to residents.
- IPA applied to three destinations with varying emphasis on sustainable tourism.
- IPA combined data-centered and scale-centered techniques to create cross hairs.
- County with most emphasis on sustainability in plan evaluated as most sustainable.
- Residents place high importance on sustainability but evaluate performance as low.

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ABSTRACT

While importance-performance analysis (IPA) is one of the most ubiquitous methodological tools utilized in tourism research, its supply-side application to residents has been lacking. Additionally, little research has examined residents' perceptions of sustainable tourism initiatives (STIs) or their community's performance on these STIs. Given this gap, this study conducted an IPA of resident attitudes towards STIs across three U.S. counties in the Commonwealth of Virginia with varying levels of emphasis placed on sustainable tourism within their strategic plans. The results revealed residents of the three counties placed uniformly high levels of importance on the STIs, but varied in their perceptions of performance. The county with the most emphasis placed on sustainable tourism within their plan was found to have the highest performance evaluations. Methodological and theoretical considerations are discussed in detail, including the placement of cross-hairs and how IPA can be situated within social exchange theory and Oliver's expectancy-disconfirmation paradigm.

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1. Introduction

Importance-Performance Analysis (IPA) is one of the most ubiquitous methodological tools within the tourism literature. It is commonly used to distinguish discrepancies between what stakeholders' think is an important component of a specific issue and their actual perceptions of how well the issue in being managed (Lai & Hitchcock, 2015; Oh, 2001). The widespread acceptance of IPA stems from its ability to provide "valuable and popular techniques for the management of tourism destinations," as well as its simplicity that allows for easy interpretation (Taplin, 2012, p. 29). Importance-performance analysis (IPA) allows researchers to visually identify gaps between stakeholders' perceptions of the importance of a specific attribute and the actual performance of a firm or destination on managing that attribute. By being able to simultaneously graph the mean importance and performance results for attributes, managers are able to see in which of the four quadrants the attribute falls: Quadrant I: "Concentrate Here," Quadrant II: "Keep Up the Good Work," Quadrant III: "Low Priority," and Quadrant IV: "Possible Overkill." Once this has been established, managers can then appropriate resources to adjust accordingly between importance and performance (Martilla & James,

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1977).

These types of analyses have been predominantly demand-oriented within the tourism literature with an overwhelming majority focused on the importance tourists' place on a certain experience, service, or product and how well a business or destination is doing at meeting the tourists' expectations (Chen, 2014; Chu & Choi, 2000; Coghlan, 2012; Deng, 2007; Sheng, Simpson, & Siguaw, 2014; Taplin, 2012; Tonge & Moore, 2007; Ziegler, Dearden, & Rollins, 2012). Others have taken a supply-side approach by asking experts within the destination to evaluate the importance and performance of different factors leading to the competitiveness of the destination (Dwyer, Cvelbar, Edwards, & Mihalic, 2012; Griffin & Edwards, 2012; Murdy & Pike, 2012) or the hospitality industry (Cvelbar & Dwyer, 2013).

While tourists, destination marketers, and those within the industry are certainly important stakeholders, residents are also important tourism stakeholders as they are the ones whose daily lives are impacted by the tourism industry. Frauman and Banks (2011) write that "local communities must be willing partners in the (tourism) process and their attitudes toward the industry and perceptions of tourism's impacts on their way of life must be continually assessed." Yu, Chancellor, and Cole (2011) recognize involving residents in the tourism planning process is "crucial" for successful sustainable tourism development, and Choi and Sirakaya (2006, p.1286) even place resident involvement as the "philosophical basis for sustainable community tourism." Even though the importance of residents' attitudes toward tourism is noted by many (see Nunkoo, Smith, & Ramkissoon, 2013), it has been rarely studied using IPA. According to Lai and Hitchcock's (2015) list of 59 IPA tourism studies, only one applies IPA to permanent residents' perceptions of tourism impacts within their community (e.g. Frauman & Banks, 2011). The scarcity of literature focused on residents' perceptions of which aspects of tourism are important and how their community is performing on these aspects is surprising given the well-acknowledged ability of residents to thwart plans for tourism development (Belisle & Hoy, 1980; Hawkins & Cunningham, 1996).

Given this gap in the tourism literature, it should not be surprising that there has also been limited analysis of how residents perceive the importance of sustainable tourism initiatives (STIs) and how well their community is doing at enacting them. The sustainable tourism literature includes extensive discussion of the definition of sustainability (Butler, 1999; Hardy, Beeton, & Pearson, 2002), the various paradigms of sustainable tourism (Clarke, 1997; Hunter, 1995), and the importance of empowering residents to sustainable tourism (Boley & McGehee, 2014; Cole, 2003; Scheyvens, 1999), but few studies have asked residents to evaluate which STIs they believe are important and how well their community is doing at enacting these specific STIs. There is a body of research on the indicators of sustainable tourism and what indicators make good barometers of tourism's sustainability (Ko, 2005), but as Roberts and Tribe (2008) mention, there are no single perfect indicators of sustainable tourism and researchers need to develop their own site specific indicators to limit criticism.

Despite this recommendation from Roberts and Tribe (2008), most of the sustainable tourism literature has focused on developing universal indicators of sustainable tourism without first asking residents which aspects of sustainability they find important and worthy of emphasizing (Choi & Sirakaya, 2006; Manning, 2004; Mearns, 2011). In essence, residents' uniform acceptance of STIs across the triple bottom line of environmental, social, and economic sustainability has been taken for granted by researchers and not empirically investigated (Dwyer, 2005; Elkington, 1997; Stoddard, Pollard, & Evans, 2012). The literature has not explored the notion that there may be a hierarchy of sustainability

preferences by residents that are location specific. A better understanding of residents' perceptions of the importance and performance of these STIs will provide those within the tourism industry empirical support and clarity on where scarce resources should be appropriated to increase resident satisfaction with the industry, as well as maximize the potential for sustainability. IPA of STI's also has implications for the resident attitude literature, which has been measuring resident perceptions of the positive and negative environmental, social, economic impacts of tourism for years (Choi & Sirakaya, 2006; McGehee & Andereck, 2004; Perdue, Long, & Allen, 1990) but has yet to fully embrace IPA as a way to simultaneously gauge residents' perceptions of the importance of STIs and their corresponding performance across the triple bottom line. The simultaneous evaluation of the importance and performance of STIs provides resident attitude researchers with an innovative application within the context of social exchange theory (Ap, 1992) and Oliver's (1980) expectancy disconfirmation paradigm. Theoretically the discrepancies between residents' evaluations of importance and performance will shed light on their satisfaction with the current state of tourism development and explain why they support or oppose future tourism development within the community.

This study attempts to address these gaps by conducting an IPA of resident attitudes towards sustainable tourism initiatives across three counties (Floyd, Botetourt, and Franklin County, Virginia) with varying levels of emphasis placed on sustainable tourism. The three counties were chosen based upon the heterogeneity apparent in their strategic tourism plan's emphasis on sustainable tourism. This provides the ability to apply the IPA mentioned above to three separate counties in order to test for differences in the importance placed on different aspects of sustainable tourism and perceived performance across the three counties of interest. Additionally, this format facilitates a test of validity for the segmentation strategy used to choose the counties. If the residents of the three counties perceive the performance of the STIs in alignment with the level of emphasis placed on sustainability within their tourism plans, it would provide credence to using published tourism plans as one de facto method to assess a destination's emphasis on sustainability. The article continues with a review of the limited previous work conducted on IPA within the sustainable tourism and resident attitude literature, as well as some of the methodological issues associated with conducting IPAs such as where to place the crosshairs.

2. Literature review

2.1. IPA in the context of sustainable tourism and resident attitudes

Importance-performance analyses have been plentiful within the broader tourism literature. Lai and Hitchcock (2015) recently reviewed 59 separate studies embracing the technique, demonstrating the flexibility of IPA and its ability to be easily adapted to destinations as a whole, as well as stakeholders of restaurants, hotels, and tourism attractions such as ski areas, hot springs and zoos. The wide acceptance of IPA stems partly from the clear managerial implications it provides on where to allocate limited resources (Sever, 2015). Sörensson and von Friedrichs (2013) also attribute its popularity to its ability to identify strengths and weaknesses within a firm or destination and its potential to be used as an alternative to the SERVQUAL framework (Parasurman, Zeithaml, & Berry, 1988).

While IPA enjoys popularity across the broader hospitality and tourism literature, its application within the sustainable tourism literature has been limited to a few studies investigating what hoteliers, tourists and residents perceive as important aspects of

sustainable tourism and how well their firm, travel destination or community is doing at enacting these sustainable tourism initiatives across the triple bottom line (economic, environmental, and social sustainability) (Cvelbar & Dwyer, 2013; Frauman & Banks, 2011; Sörensson &von Friedrichs, 2013). For example, Cvelbar and Dwyer (2013) asked Slovenian hospitality managers to rate the importance and performance of their hospitality firms on various sustainability indicators across the triple bottom line. Their results reveal that the first priority of hospitality managers' is the financial performance of their firms, with the indicators pertaining to financial performance falling in the "Concentrate Here" quadrant. Managers perceived maintaining positive relationships with customers and limiting energy and water consumption as areas to "Keep up the Good Work." Other sustainability indicators such as maintaining positive relationships with employees, focusing on environmental awareness, and relationship with the community fell into the "Possible Overkill" category. These results reveal that there is a clear hierarchy among Slovenian hoteliers when it comes to triple bottom line sustainability and that there is an entrenched view that neglecting a focus on financial sustainability could threaten a hotel's ability to be solvent and reach other sustainability goals such as environmental or socio-cultural sustainability if they were to go out of business (Cvelbar & Dwyer, 2013, p. 487). This hierarchy of sustainable priorities is of interest to the present study because with the limited amount of research into resident attitudes towards sustainable tourism, it is unknown which categories of the triple bottom line residents are satisfied with or would like to see improved.

Sörensson and von Friedrichs (2013) utilize IPA to evaluate the importance tourists' place on different sustainable tourism initiatives (STI) and the corresponding performance in Bologna, Italy. Their results found significant differences between national and international tourists in the degree of importance they place on sustainable tourism. Sörensson and von Friedrichs (2013) results reveal that national tourists place a higher level of importance on sustainable tourism than international tourists. While there were significant differences between national and international tourists in the level of importance place on sustainable tourism, perceptions of Bologna's performance were fairly uniform across the two groups. Both ranked Bologna's performance across the STIs as slightly above average with a rating of 7.2 out of 10. One aspect of Sörensson and von Friedrichs' (2013) work that is particularly pertinent to this study is its application of IPA to two different types of tourist groups. This allows for comparing the two groups' STI quadrant placements as well as the use of MANOVA and ANOVA to compare their perceptions of sustainable tourism. This type of analysis is pertinent to the present study as there are three different counties being investigated, and MANOVA and ANOVA will help answer the question of whether or not residents within the three counties have different perceptions of the importance and performance of various STIs across the triple bottom line.

Frauman and Banks (2011) offer one of the only studies to apply the IPA framework to residents. They utilized a unique blend of the IPA and Limits of Acceptable Change (LAC) framework in order to assess 4 different resident groups' perceptions of which triple bottom line features make Watagua Co. NC USA a desirable place to live. Their findings revealed that location of residence within the county and status as permanent residents vs. second home owners were the most influential factors regarding perceptions of the importance and performance of these environmental, socio-economic, and socio-cultural features of the county. This provides credence for the examination of permanent resident's attitudes toward sustainable tourism as potentially differing from second homeowners or seasonal migrants (Sheng et al., 2014).

While these studies contribute to the body of knowledge regarding how hoteliers, tourists, and residents perceive the importance and performance of sustainable tourism, supply-side research focused on residents' perceptions of sustainable tourism is still limited (Lai & Hitchcock, 2015). This is surprising given that the resident attitude literature has frequently used social exchange theory to identify residents' perceptions of the positive and negative environmental, social, and economic impacts of tourism as predictors of support for tourism (García, Vázquez, & Macías, 2015). Social exchange theory explains residents' attitudes as function of an internal cost-benefit analysis of all the positive and negative impacts of tourism (Ap, 1992; Perdue et al., 1990). If residents perceive the environmental, social, and economic benefits of tourism as greater than the costs, then they tend to support tourism within their community. This cost-benefit analysis of triple bottom line impacts has been operationalized as either three separate scales measuring the environmental, social, and economic impacts of tourism (e.g. Jurowski, Uysal, & Williams, 1997) or by authors who have combined the triple bottom line impacts into two separate scales measuring resident perceptions of the positive and negative impacts of tourism (e.g.Andereck & Vogt, 2000; Boley, McGehee, Perdue, & Long, 2014; McGehee & Andereck, 2004).

Overall, the literature supports social exchange theory and the importance of understanding resident perceptions of tourism's impacts across the triple bottom line. However, little is known about how important each impact is to the resident and the corresponding performance of how well the local tourism industry is managing the impact. This is an important distinction because without the simultaneous measurement of the importance and performance of tourism impacts, or in this case, sustainable tourism initiatives (STIs), researchers only have a unidimensional perspective of the STI. For example, past studies have primarily asked residents to state their level of agreement with statements such as "Tourism provides incentives for protection and conservation of natural resources in ————— County" (Boley et al., 2014). This unidimensional perspective does not provide managers with prescriptions on where to focus their efforts. It solely tells them if this positive or negative impact is present.

IPA adds an extra layer of contextualization to resident attitude research by not single-handedly asking residents to evaluate the extent to which they agree or disagree with a statement about an impact of tourism, but by measuring residents' perceptions of both the importance of the STI as well as the county's performance on the STI. This provides managers with a clearer picture of where to hone their efforts on sustainable tourism. IPA also has implications for the application of social exchange theory because by simultaneously taking measures of importance and performance, researchers can calculate discrepancies between the two and use these gap scores to predict support for tourism using the same social exchange theory logic, as well as other theories such as Oliver's expectancy-disconfirmation paradigm (Oliver, 1980).

In recognition of the limited application of IPA to resident attitudes towards tourism and the many benefits of using the technique, this study seeks to apply an IPA of sustainable tourism indicators to residents of three counties with varying degrees of emphasis placed on sustainable tourism as evidenced by their strategic tourism plans. By administering the IPA to residents in three counties with different levels of emphasis on sustainable tourism, it allows for testing which indicators of sustainable tourism are uniformly viewed as important and which ones vary across the three counties. It also provides the ability to look at residents' perceptions of how well the counties are performing on these indicators and see if residents' perceptions of performance align with the county's emphasis on sustainable tourism as seen within their strategic tourism plan.

3. Methods

3.1. Cross-hair placement in importance-performance analyses

As mentioned previously, IPA is a commonly applied form of analysis within tourism research, primarily due to its clear managerial implications. However, Azzopardi and Nash (2013, p.222) recognize that the methodological technique is "surrounded by conceptual, methodological, and measurement ambiguity." This shroud of ambiguity stems from a variety of limitations commonly acknowledged within the IPA literature. The most controversial limitation pertains to the subjective decision researchers have to make over where to place the cross-hairs within the Importance-Performance matrix (Oh, 2001). Martilla and James (1977), the first researchers to employ IPA, suggest using the median values of the scale for the placement of the cross-hairs. This technique is commonly referred to as "scale-centered" IPA because the cross-hairs are simply placed in the middle of the 5-point or 7-point Likert scale used to measure importance and performance. While Oh (2001) acknowledges that this is the most transparent way to place the cross-hairs, it also carries some limitations. For example, when the scale-centered approach is used, Taplin (2012, p. 29) writes that most attributes often fall in "the 'keep up the good work' quadrants as respondents tend to give high performance and importance ratings". These inflated importance and performance scores are attributed to what Oh (2001, p. 622) refers to as "ceiling-effects" because researchers "tend to use a selected set of key-therefore, 'important' already in its own right-attributes to measure importance."

In reference to this problem of "ceiling-effects," some researchers have suggested using a data-centered approach, placing the cross-hairs at the mean responses of the importance and performance items measured respectively (Azzopardi & Nash, 2013). According to Taplin (2012, p. 29), this data-centered approach has "the advantage that attributes are compared relative to each other, which is appropriate if management is considering shifting limited resources between attributes." This also effectively solves the problem of 'ceiling effects' by ensuring that salient attributes are graphed according to their relative importance and performance, which ensures more dispersion of attributes across the four IPA grids and clearer managerial implications for where to allocate scarce resources.

While the data-centered approach has this advantage, it does not solve other methodological limitations commonly associated with IPA such as how to interpret attributes that fall in close proximity to discriminating thresholds (Bacon, 2003; Tarrant & Smith, 2002) or how to interpret the attributes that fall into the "Overkill" category. Attributes that fall into the "Overkill" category are especially problematic since performance exceeding expectations is commonly a positive performance metric within the management literature because of its strong link to customer satisfaction (Oh, 2001). With this in mind, a degree of caution needs to be taken before transferring resources away from overperforming features. This could cause a drop in customer satisfaction if these features are what Kano, Seraku, Takahashi, and Tsuji (1984) refers to as "basic/threshold attributes" whose presence does not lead to satisfaction, but whose disappearance could lead to dissatisfaction.

A third option used by some IPA researchers to remedy limitations is to employ an upward sloping 45° diagonal line to distinguish between areas where performance exceeds importance (P > I) or where performance falls below importance (P < I) (Azzopardi & Nash, 2013; Bacon, 2003). This 45-degree diagonal line is referred to by Bacon (2003) as an iso-priority diagonal line because it provides a visual line of "where all points on it has equal

priorities for improvement (I=P)" (cited in Azzopardi & Nash, 2013, p. 222). The use of an iso-priority line provides researchers with the ability to employ gap analysis and tap into social exchange theory within the context of Oliver's (1980) expectancy-disconfirmation paradigm, which states that a customer's satisfaction with a product or attribute will be based upon the difference between their expectations and their performance evaluations of that product or attribute (Oliver, 1980). If performance evaluations are higher than expectations (P > E), then there is a positive disconfirmation and the customers will likely by satisfied. If there is a negative disconfirmation (E > P), then the customers will likely be dissatisfied. Incorporating the 45-degree diagonal line into IPA allows researchers to identify attributes which have positive disconfirmations (P > I) and negative disconfirmations (I > P) (Sever, 2015).

As can be seen by the many different methods available for conducting IPA, researchers have the latitude to set the discriminating parameters based on the individual study. As such, researchers have a responsibility to be clear about why certain methods are chosen and how the interpretation of the results would change if other cross-hairs were used.

3.2. County segmentation based on emphasis on sustainable tourism

Prior to conducting the research, Virginia counties and cities with official strategic tourism plans as of 2012 were identified (N = 14/134) and analyzed to determine their emphasis on sustainable tourism. The identification phase included in-depth searches of each of the 134 counties and cities within the Commonwealth of Virginia to determine which had published tourism plans. The search process included visiting each county/city's government website, each county/city's chamber of commerce website, and using internet search engines with key words of "———— County Virginia Tourism Plan." The search process yielded 14 counties/cities with strategic tourism plans.

Next, the plans were evaluated according to the level of emphasis each placed on 13 common indicators of sustainable tourism suggested by Choi and Sirakaya (2006); Fernandez & Sanchez Rivero (2009), and Miller (2001) (Table 1). Each indicator was ranked on a scale from 0 to 10 where 0 represented "not mentioned within the plan," 5 represented "mildly important," and 10 equated to "vital/of primary importance." After each plan was analyzed and rated, an average score for each dimension of the triple bottom line (environmental, socio-cultural, and economic sustainability) was calculated and then multiplied by 3.33 to create a scaled score between 0 and 100. For example, if a county's environmental sustainability score was 6.5 and its socio-cultural sustainability and economic sustainability score were 4.2 and 8.0 respectively, the three scores were each multiplied by 3.3 to create a total score of 61.7/100. The counties and cities were then ranked based upon their perceived level of emphasis on sustainable tourism with a score of 100 representing the highest possible level of emphasis on sustainable tourism development and 0 representing no emphasis on sustainable tourism.

Using the above sustainable tourism indicators and the total scores calculated for each county, three counties, one each representing 'low'(0–33), 'medium' (34–67), and 'high' (68–100) levels of emphasis on sustainable tourism, were selected after controlling for level of tourism development, each county's economic condition, and type of tourism product. Per capita tourism expenditures were used to measure level of tourism development, which is in keeping with previous research (Long, Perdue, & Allen, 1990; Látková & Vogt, 2012). Economic condition of the area was controlled for using unemployment rates due to the potential

Table 1
Triple bottom line indicators of sustainable tourism from the literature.

Indicators	Literature
Economic Sustainability	
Economic Leakage/Local Business Development	Choi & Sirakaya, 2006; Manning, 2004; Mearns, 2011
Seasonality	Manning, 2004; Mearns, 2011
Economic Impact (Jobs and Revenue)	Choi & Sirakaya, 2006; Fernandez & Sanchez Rivero, 2009; Manning, 2004; Mearns, 2011
Tourist Satisfaction/Focus on Repeat Visitors	Choi & Sirakaya, 2006; Manning, 2004; Mearns, 2011
Socio-Cultural Sustainability	
Resident Involvement	Choi & Sirakaya, 2006; Manning, 2004; Mearns, 2011
Community Benefits/Quality of Life	Mearns, 2011
Cultural Heritage Conservation	Choi & Sirakaya, 2006; Manning, 2004; Mearns, 2011
Land Zoning Policy	Choi & Sirakaya, 2006; Manning, 2004
Partnerships and Collaboration	Mearns, 2011
Environmental Sustainability	
Environmental quality	Choi & Sirakaya, 2006; Fernandez & Sanchez Rivero, 2009;
Tourism's Resource Use (Water and Energy)	Fernandez & Sanchez Rivero, 2009; Manning, 2004; Mearns, 2011
Green/Eco Certification	Fernandez & Sanchez Rivero, 2009; Manning, 2004
Scale/Carrying Capacity	Fernandez & Sanchez Rivero, 2009; Manning, 2004; Mearns, 2011

'doomsday' effect that could cause a community with a suffering economy to have higher support for tourism (Perdue et al., 1990). Lastly, the region of the tourism destination and subsequently the type of tourism product within the destination was taken into account by choosing destinations along the Blue Ridge Parkway who promoted themselves as nature and culture-based rural destinations.

With these factors accounted for, Floyd County (82.8), Botetourt Count (59.7), and Franklin County (27.7) along the Blue Ridge Parkway were selected as sites for the IPA. This was based upon the heterogeneity of their 'perceived emphasis on sustainable tourism' score and the homogeneity in their per capita tourism expenditures, economic condition, location, and tourism product (Table 2). The three counties have similar per capita tourism expenditures, ranging between US$1400 to US$1,600, and unemployment rates between 5 and 6%, but varying levels of emphasis on sustainability tourism development (Bureau of Labor Statistics, 2012).

Tourism in Floyd County (population 15,390) brings in US$639,000 in local tax receipts and is primarily centered around the town of Floyd's vibrant musical heritage, which includes a weekly 'Friday Night Jamboree' at the Floyd Country Store where locals and tourists alike gather to listen to the region's bluegrass music (VATC, 2014). Botetourt County's (population 33,154) tourism contributes US$1.4 million in local tax receipts and includes tourism offerings of wineries, a canoe trail down the state recognized scenic James River, Civil War heritage sites, and the town of Fincastle, which served as the capitol of the western frontier during British Colonial times (VATC, 2014). Franklin County's (population 56,411) tourism brings in US$2.7 million in local tax receipts; its two primary attractions are Smith Mountain Lake and its moonshine heritage that has spurred Hollywood movies, popular press books, and recent reality television shows (VATC, 2014).

3.3. Survey methods

Following the segmentation of counties based upon their tourism plan's emphasis on sustainable tourism, 15 sustainable tourism initiatives (STIs) were incorporated into a survey instrument and administered to residents to measure their perceptions of how important each STI was and the corresponding performance of their county on that STI. These 15 STIs were primarily adapted from

Table 2
Counties chosen for the IPA.

County	Economic				Socio-Cultural					Environmental			
	Economic Leakage / Local Business Development	Seasonality	Economic Impact (jobs & Revenue)	Tourist Satisfaction/ Repeat Visitors	Resident Involvement	Community Benefits / QOL	Cultural Heritage Conservation	Land zoning policy	Partnerships & Collaboration	Environmental Quality	Resource Use (Water & Energy)	Green Certification	Scale
Floyd County	10	5	10	10	8	10	10	10	10	10	7	0	10
Botetourt County	10	0	10	8	5	10	10	10	8	5	0	5	0
Franklin County	5	3	10	0	3	7	2	0	5	2	0	0	0

County	Econ. Average	Socio-Cultural Average	Env. Average	Scale Out of 100	2011 Pop.	2011 Exp. (millions)	Per capita Tourism Exp. (thous.)	Unemployment (Sept. 2012)
Floyd County	8.8	9.6	6.8	82.8	15,378	$21.8	$1.42	5.70%
Botetourt County	7.0	8.6	2.5	59.7	32,928	$49.7	$1.51	5.30%
Franklin County	4.5	3.4	0.5	27.7	56,419	$91.9	$1.63	5.60%

* Each sustainable tourism indicator was assigned a 1—10 score based upon its presence and level of emphasis within each county's strategic tourism plan.

Hao, Long, and Hoggard's (2014) study of coastal property owner's perceptions of sustainable tourism. The other STIs were adapted from the literature on sustainable tourism indicators to measure residents' perceptions of the STIs across the triple bottom line (Choi & Sirakaya, 2006; Fernandez & Sanchez Rivero, 2009; Miller, 2001). A list of the 15 STIs is provided in Table 4.

The data collection method consisted of a self-administered, door-to-door, pen and paper questionnaire using a census-guided systematic random sampling scheme commonly used within resident attitude research (McGehee & Andereck, 2004; Perdue et al., 1990; Woosnam, 2012). This sampling scheme was chosen based upon its ability to best garner a representative sample of community residents, increase response rates, and include under-represented groups that may be left out from other sampling methods (Woosnam, 2008). During the six-week period of data collection, 1784 households were visited with 1021 individuals answering the door. Out of the 1021 individuals intercepted, 37 were not permanent residents or heads of the household. Of the remaining 984 households, 900 residents were willing to participate with 84 declining for a participation rate of 91%. Of the 900 questionnaires distributed, 777 were collected for a response rate of 79%. While there was a high initial response rate, MANVOA in SPSS required listwise deletion of missing data resulting in 502 of the 777 returned surveys being used in the data set (162 in 'Floyd', 168 in 'Botetourt County', and 172 in 'Franklin County'). This resulted in 51% of the 984 intercepted residents following through and being included in the study.

The sample from Floyd, Botetourt, and Franklin Counties was representative of the region. Respondents were slightly more female (50.4%) than male (49.6%) with 65.7% having some college education or higher and a majority of residents having average household incomes in the range of US$30,000 to US$59,999. The average age was 54.9 years old and the average respondent had been living in their respective county for 28.5 years. Additionally, the sample was predominantly Caucasian, which is indicative of the Blue Ridge Highlands Area of Virginia (Table 3).

3.4. Cross-hair selection

As mentioned previously, a critical decision within the IPA process is where to place the cross-hairs because the subjective decision will effectively change the interpretation of the results and which quadrants an attribute will fall into (Azzopardi & Nash, 2013; Oh, 2001; Taplin, 2012). Based upon a review of the pros and cons of the options available (e.g. scale-centered, data-centered, and iso-priority diagonal line) and the nature of the study, a hybrid approach to cross-hair selection was taken. The mean importance scores for the 15 sustainable tourism initiatives were 3.93, 3.80, and 3.93 for Floyd County, Botetourt County and Franklin County respectively. The mean performance scores were 2.82, 2.64 and 2.64 for Floyd County, Botetourt County, and Franklin County respectively. If the scale-centered approach was taken, all STIs would have fallen into either Quadrant 1: "Concentrate Here" or Quadrant 2: "Keep Up the Good Work" given the high importance scores across the three counties. To remedy this, the data-centered approach was used for the "Importance" axis. This decision moved the x-axis from 3.0 to 3.93, 3.80, and 3.93 for Floyd, Botetourt and Franklin Counties respectively. This ensured that all importance scores were interpreted relative to the importance of other STIs within the county. Conversely, the performance means of the three

counties (e.g. 2.82, 2.64 and 2.64) all fell below the midline of the performance scale (3.0). Since it did not seem appropriate to reward performance that was actually below the middle of the scale's average, a scale-centered approach was used to set the performance axis at 3.0 for each county, effectively producing a hybrid approach to setting the cross-hairs. An iso-priority diagonal line at 45° was also overlaid to visually demonstrate which STIs fell above the line, indicating dissatisfaction (I > P), and which STIs fell below the line, indicating satisfaction (P > I). While the results are discussed with this blended perspective in mind, all three options (data-centered, scale-centered, and iso-diagonal line) will be visible on each IPA graph to show how the interpretation of the findings could change based upon the decision of where to place the cross-hairs. This more nuanced approach will provide richer, more complex findings than if a single approach were utilized.

4. Results

In order to test for differences between the levels of importance placed on the 15 STIs and their corresponding performance across the three counties, two separate MANOVAs, one on the importance measures and one on the performance measures, were conducted. MANOVA was chosen over its univariate counterpart, ANOVA, because MANOVA controls for the experiment wide error rate, also referred to as Type 1 error (Hair, Black, Babin, & Anderson, 2010). Multiple ANOVAs using the same set of independent variables and different dependent variables run the risk of finding statistically significant differences when they do not exist because the differences are tested for using the 0.05 significance level repeatedly (Hair et al., 2010).

Prior to interpreting the MANOVA, the Box's M Tests were referenced to see if the assumption of equality of variance-covariance matrices was met. The Box's M Tests were significant, indicating that the variance-covariance matrices were not equal across the groups (Importance Box's M = 449.1; $p = .000;$ Performance Box's M = 426.0; $p = .000$). While this is an important assumption with MANOVA, Hair et al. (2010, p. 365) write that "a violation of this assumption has minimal impact if the groups are of

approximately equal size (i.e., Largest group size ÷ smallest group size < 1.5)." Using this formula from Hair et al. (2010), the largest group (Franklin County = 172) was divide by the smallest group (Floyd County = 162) to determine if the significant Box's M Tests were problematic. The ratio between largest group and smallest group was 1.06. With this number being significantly below 1.5 and Hair et al.'s (2010) assertion that MANOVA is a robust statistical technique when there are equal group sizes, the decision was made to continue with the use of MANOVA.

The results of the first MANOVA revealed that even though the three counties placed different levels of emphasis on sustainability within their tourism plans, there was no statistical difference amongst residents across the three counties in the importance they placed on the STIs (Table 4). The MANOVA test statistics of Wilks' Lambda and Hotelling's Trace were not significant at the 0.05 level. The univariate ANOVAs provided within the broader MANOVA also revealed no significant differences in level of importance placed on the 15 STIs. Residents uniformly evaluated the importance of all the STIs as high, with a mean score of 3.95 on a 5-point scale.

The STIs that residents reported as most important across the three counties focused on resident quality of life and tourism's potential impact on the counties' cultural heritage and natural resources. For example, the STIs related to air quality, water quality, and the natural environment had a high average importance rating of 4.5. Even though all STIs were evaluated as relatively important, the lowest ranking initiatives were economically-oriented, including supporting local tourism businesses, making the county a four season tourism destination, increasing tourism jobs within the county, and providing opportunities for residents to participate in tourism development decisions. These findings are surprising given the sustainable tourism literature's emphasis on the importance of enhancing tourism economic impact to communities (Akama & Kieti, 2007; Saayman & Saayman, 2006) and empowering communities to take control of tourism development (Boley & McGehee, 2014; Scheyvens, 1999). It appears that the Latin motto of "primum non nocere." (First, do no harm)" would be important for managing tourism in these counties where they are very concerned about tourism degrading the quality of their natural and

cultural resources.

Even though the importance-based MANOVA found no significant differences between the counties, the performance-based MANOVA did reveal that there were significant differences in residents' perceptions of how well the counties were implementing the STIs. Both Wilks' Lambda and Hotelling's Trace were significant at the 0.05 level (Table 4). Post-Hoc tests revealed Floyd County had significantly higher performance ratings than the other counties when the 15 STIs were averaged (2.82 compared to 2.64 and 2.64 for Botetourt and Franklin counties, respectively). The individual ANOVAs provided within the broader MANOVA revealed that Floyd County residents felt the county was doing a better job at "Supporting local tourism businesses," "Providing tourists with a quality visitor experience," "Preserving the county's culture and heritage, and "Developing green certified tourism businesses" than the other two counties. Floyd County also had a significantly higher performance mean on all the STIs combined ($p < 0.02$) which supports the evaluation of their strategic tourism plan as having a stronger emphasis on sustainability. It should be noted that even though Floyd County's performance on these STIs was significantly higher, the mean score of 2.82 still falls below the mid-point of the 5-point Likert Scale used to measure performance. It appears that all three counties are under performing on the 15 STIs measured; Floyd County's residents simply perceive them as doing the best.

IPA graphs visually depicting residents' importance and performance ratings of the 15 STIs were subsequently developed for each county and provide those within the tourism industry specific recommendations on where to allocate resources toward sustainable tourism (Figs. 1–3). The IPA graphs include the data-centered cross-hairs as "solid lines," the scale-centered cross-hairs as "dashed lines," as well as a 45° iso-diagonal line representing where importance and performance evaluations are equal.

Interestingly, across all the counties no STIs fellow below the iso-diagonal line. This indicates the importance placed on the STIs was higher than their performance evaluations. The t-tests for differences between level of importance placed on each STI and the

corresponding evaluation of performance also revealed that for each of the 15 STIs, importance ratings were significantly higher than performance ratings (Table 4). This indicates a need across all counties to take tourism impacts more seriously and to better manage the industry in regards to these STIs. Based upon social exchange theory and the expectancy-disconfirmation paradigm logic, it would also lead one to believe that residents are generally dissatisfied with how the current tourism industry's impacts are being managed s and that with this discrepancy between importance and performance ratings, residents would be unlikely to be supportive of tourism development.

The IPA graphs reveal many similarities between the three counties, as well as a few differences (Table 5). Similarities were mostly in Quadrant 1: "Concentrate Here" and Quadrant 3: "Low Priority." Across all three counties, Quadrant 1: "Concentrate Here" STIs included "Ensuring tourism development does not exceed ____ County's resources," "Increasing residents' quality of life in ____ County," and "Protecting ____ County's water quality."

Similarities also existed in Quadrant 3: "Low Priority" and included the following STIs: "Making ____County a four season tourism destination," "Increasing tourism jobs within ____County," "Providing opportunities for everyone in ____County to participate in tourism development decisions," "Enacting land zoning policies in ____County," Increasing partnerships amongst community members in ____County," "Developing green certified tourism businesses within ____County," and "Limiting tourism development to the appropriate scale for ____County".

The few significant differences in quadrant placement arose mainly from Floyd County's stronger performance on many of the STIs. For example, the STIs of "Protecting ____County's air quality," "Conserving ____County's natural environment," and "Preserving ____ County's culture and heritage" all fell into Quadrant 2: "Keep up the Good Work." The only other county to rank an STI in this quadrant was Franklin County on "Preserving ____ County's culture and heritage." Not surprisingly, Floyd County's stronger performance on the STIs also resulted in the STIs "supporting local

tourism businesses" and "striving to provide tourists with a quality visitor experience" being located in Quadrant 4: "Overkill". The reader should be reminded that these quadrants are based upon a cross-hairs placement using a blended scale-centered and data-centered approach. If the scale-centered approach alone were used, based upon the high importance reported on the STIs nearly all would fall in Quadrant 1: "Concentrate Here" or Quadrant 2: "Keep Up the Good Work." If the data-centered approach was solely used, then there would be more STIs with Quadrant 2: "Keep Up the Good Work" and Quadrant 4: "Low Priority."

5. Discussion and conclusion

This study sought to add to the limited use of IPA within the sustainable tourism and resident attitude literature by applying IPA to residents across three tourism destinations in order to test for differences in the importance placed on different aspects of sustainable tourism and perceived performance across the three

counties of interest. The results from this IPA reveal that residents generally thought that all of the STIs were important (Mean 3.95), but varied in their perceptions of how their counties were doing at implementing them (Mean = 2.70). Interestingly, STIs geared more towards maximizing the economic benefits of sustainable tourism were seen as lower priorities. This deviates from the literature's traditional emphasis on increasing the economic multipliers of tourism within the local community (Akama & Kieti, 2007; Saayman & Saayman, 2006). Additionally, political empowerment was also ranked lower than quality of life, deviating from the previous research on resident involvement and empowerment (Cole, 2006; Boley & McGehee, 2014). Both of these areas were outranked by respondents' high prioritization of resident's quality of life, supporting the literature of Andereck and Nyaupane, (2011) and Kim, Uysal, and Sirgy (2013).

There are several potential explanations for this finding. Perhaps these destinations are in early stages of tourism development (e.g. per capita tourism expenditures ~$1500/person) where the economic promises of tourism are secondary to ensuring tourism does not destroy what residents have come to value most about their communities. If further research reveals this to be the case, tourism advocates can use this information to ensure that tourism development plans sustain and preserve the area's environmental quality and that tourism does not degrade places deemed by locals to have social and recreational significance. For example, tourism advocates could employ techniques such as Participatory GIS (PPGIS) mapping to help residents voice their concerns over tourism negatively impacting certain areas of their community (Bahaire & Elliott-White, 1999; Brown & Weber, 2013). This would help ensure that tourism developers are aware of areas deemed important by locals and that strategies can be developed to either steer tourists away from these areas or to minimize tourists' negative impacts in these areas if they are deemed an essential part of the tourism product being offered.

Conversely, residents may view tourism as important to their quality of life in terms of leisure pursuits or other non-work components of their lives, but they may have the impression that employment related to tourism is not a preferred career path. If this is also found to be part of the explanation for this finding, tourism advocates may want to embark on a public relations campaign which highlights the full spectrum of career opportunities in tourism. Similarly, raising awareness of the economic value of tourism in the community may be in order.

Regardless of the explanations of the findings, this study provides credence for other tourism destinations to take the time and resources to undertake IPA studies. Uniform acceptance of all STIs by residents across the triple bottom line cannot be assumed. Each destination will have its own set of issues that correspond to site-specific variations in the level of importance placed on each STIs. In other words, from a theoretical perspective the value of each social exchange is not consistent and will vary across communities.

Another interesting finding from this study was the strong level of importance placed on STIs with significantly lower levels of performance evaluations. No single STI was found to outperform the level of importance placed on it by residents. Using social exchange theory (Ap, 1992) and the expectancy-disconfirmation paradigm logic (Oliver, 1980), those within the tourism industry have the ability to increase resident satisfaction with tourism by working to change these negative disconfirmations (I > P) into positive disconfirmations (P > I). This may prove challenging for those within the tourism industry because it appears that residents place high levels of importance on STIs while they are also very critical of the tourism industry's impacts within the community. IPA and the graphed iso-priority diagonal line provide a clear depiction of the gaps between performance and importance, but they do not speak to potential remedies for increasing resident evaluations of performance. Perhaps, coupling of IPA with in-depth interviews or focus groups could help better understand the reasons for the low performance ratings and explore residents preferred solutions.

A core component of this study was also the application of three separate IPAs across three counties with varying levels of emphasis placed on sustainable tourism. The purpose of choosing three counties with identified varying levels of emphasis placed on sustainable tourism was to test if the residents' evaluation of performance on the STIs would align with the county tourism plan's emphasis. Using this type of segmentation strategy was also embraced because while the sustainable tourism literature has many articles pertaining to indicators of sustainable tourism (Choi & Sirakaya, 2006; Fernandez & Sanchez Rivero, 2009; Hao, Long, & Hoggard, 2014; Miller, 2001), almost all of them require primary data collection to determine whether or not a destination's tourism industry is sustainable. By applying these sustainable tourism indicators to destinations' published strategic tourism plans, it allowed for comparisons to be made using secondary data. This saved time and money and provided the ability to use the secondary data in the site selection process for the primary data collection. The MANOVA and subsequent post-hoc test results confirmed that Floyd County, the county with the highest level of emphasis on sustainable tourism within its plan, was evaluated as performing most favorably. While the results showed Floyd County to be the most sustainable of the three destinations, the practical

difference was only slight (2.8 vs. 2.6 on a 5-point scale). The small practical differences in level of performance across the STIs could possibly be attributed to the nature of respondents inflating levels of importance for sustainable tourism while being overly critical at the same time. This type of strategic responding is often undertaken by stakeholders who think that their stronger responses will effectively send a message to those in charge. It is not clear if that is happening here, but if is occurring, it should be equivalent across the three counties and the significant difference would be attributed more to the counties' actual performance rather than the residents trying to send a message to those within the tourism industry.

5.1. Limitations and future research

As with all research this study has limitations. The use of county-level strategic tourism plans as sources to determine a county's emphasis on sustainable tourism is potentially problematic. While the results of this study demonstrate that the county with the most emphasis on sustainable tourism in their plan was perceived by its residents as the most sustainable in practice, no counties without strategic tourism plans were included in the study. Perhaps the process of creating a strategic tourism plan alone puts a destination on the path toward sustainability because they are actively considering the future. It is suggested that future research utilizing this methodology include destinations where there are no published tourism plans in order to have a more inclusive sample.

Another limitation eluded to earlier is the sole use of quantitative methods. While IPA and MANOVA provided the ability to visually depict residents' responses and to test for differences across the three counties, some questions remain unanswered. For example, we do not know why residents perceive and report low performance in some of the categories. The use of a quantitative methodology also prohibits the inclusion of site-specific sustainable tourism initiatives in the questionnaire, nor does it provide opportunity for respondents to speak to other initiatives. Similarly, only STIs from the literature were chosen. To alleviate this multi-pronged problem, future research could couple in-depth interviews and/or focus groups with IPA to dive deeper into why residents perceive the county's performance on the initiatives the way they do as well as learn more about site-specific indicators of sustainable tourism.

IPA also carries the limitation of researchers having to subjectively decide where to place the cross-hairs within the analysis (Azzopardi & Nash, 2013; Oh, 2001; Taplin, 2012). This study applied a hybrid cross-hair selection process with the knowledge that a pure data-centered or scale-centered approach would have produced different results. In an effort to be as nuanced as possible, this study provided all cross-hair options on each IPA graph. It is recommended that other IPA studies explore this technique so that the reader can see how the STIs may have fallen into different quadrants if different discriminating criteria were used.

Given the limited application of IPA to resident attitudes toward tourism, there are many future research opportunities. The combination of IPA scales with Perdue, Long, and Allen's (1990) model of resident attitudes towards tourism could reveal heretofore unrecognized relationships between resident attitudes and measures of importance and performance of STIs. Perhaps the level of importance residents place on sustainable tourism is an antecedent to their support for tourism development. Using the logic from social exchange theory and Oliver's (1980) disconfirmation paradigm, the more emphasis residents place on sustainable tourism, the harder it will be to satisfy them. This hypothesis could easily be tested for by including a summated scale of importance as an antecedent to support for tourism. Specifically, this could test the notion that the better the destination's performance on these STIs, the more supportive the residents would be of the tourism industry. A summated measure of performance could also be used within a regression equation of a structural equation model to test this hypothesis. Another approach for future research on residents' attitudes towards tourism could be to subtract the importance mean from the performance mean (P–I) and use the gap score as a predictor of support for tourism. In theory, the more positive the gap score, the more favorable the residents' evaluations of the tourism industry would be.

By now it should be evident that this study only signifies an initial step toward more robust use of IPA and STIs. Additional research combining the two concepts, along with other mainstays of resident attitude research, will help those interested in sustainable tourism to better understand the importance residents place on sustainable tourism, how residents perceive their communities are doing at enacting sustainable tourism, and the relationship between sustainable tourism and support for tourism overall.

Appendix A. Supplementary data

Supplementary data related to this article can be found at http://dx.doi.org/10.1016/j.tourman.2016.10.002.

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