Tourism Management 55 (2016) 276–286

Contents lists available at ScienceDirect

Tourism Management

journal homepage: www.elsevier.com/locate/tourman

Residents' perceptions of wine tourism development

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HIGHLIGHTS

- The study examines residents' perceptions of wine tourism development.
- Residents are neutral in their perceptions of local wineries in terms of personal benefits and community impacts.
- Demographics, wine enthusiasm, and trails' tourism comprehensiveness are associated with residents' perceptions.
- Personal benefits mediate residents' perceptions of community impacts.

ARTICLE INFO

Article history:
Received 2 February 2015
Received in revised form
24 February 2016
Accepted 25 February 2016
Available online xxx

Keywords:
Attitudes
Community Impacts
Personal Benefits
Residents' Perceptions
Wine trail
Wine tourism

ABSTRACT

Wine trails have been studied insufficiently within the tourism literature despite of their recent rapid development worldwide. In response, this study examines residents' perceptions of wine tourism development in terms of personal benefits and community impacts. It also explores whether residents' socio-demographics and levels of wine enthusiasm, and wine trails' tourism characterization influence residents' perceptions. Following a stratified random sampling procedure, residents living along two wine trails in the Piedmont region of North Carolina (U.S.) were surveyed. Results indicate that residents are neutral in their perceptions of the Piedmont wineries in terms of both personal benefits and community impacts. Residents' socio-demographics and level of wine enthusiasm, as well as the comprehensiveness of wine trails' tourism amenities were significantly associated with residents' perceptions. Results also indicate that personal benefits mediate residents' perceptions of community impacts. In addition to the oretical and methodological contributions, this paper outlines management implications for wine trails.

1. Introduction

Wine trails have grown considerably in numbers in the last decade around the world (America's Wine Trail, 2015; MacLeod & Hayes, 2013). Despite such popularity and their relevance to economic development (Bruwer, 2003), literature on wine trails is scant as the main body of wine tourism studies focuses predominantly on entire wine regions. The limited number of studies on wine trails has primarily examined marketing issues, such as identifying current and potential visitors, exploring marketing strategies for further development to attract new visitors (Hashimoto & Telfer, 2003; Jaffe & Pasternak, 2004), or has evaluated wine trails' performance in terms of visitors' satisfaction and managerial constraints (Correia, Passos Ascenção, & Charters, 2004). The extant wine tourism literature reveals a scarcity of studies assessing local residents' perceptions of wine trails, which is incongruent with the fact that residents are key stakeholders in regional tourism development (Jamal & Getz, 1995; Sautter & Leisen, 1999).

Limited understanding of local residents' perceptions of wine trails challenges trail planning and management. For example, the

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http://dx.doi.org/10.1016/j.tourman.2016.02.016
0261-5177/

lack of genuine community participation resulting from residents' distrust and uncertainty about tourism development is a significant constraint to developing and managing tourism routes (Briedenhann & Wickens, 2004). This is not surprising, considering residents' perceptions of tourism development are a main determinant for successful tourism (Gursoy & Rutherford, 2004) and residents' involvement is directly related to their support for tourism development endeavors (Gursoy & Rutherford, 2004; Teye, Sirakaya, & Sönmez, 2002).

Residents' perceptions of tourism development have been examined in terms of personal benefits (McGehee & Andereck, 2004), as a suite of economic, socio-cultural, and environmental impacts in surrounding communities (Byrd, Bosley, & Dronberger, 2009; Gursoy & Rutherford, 2004), or with regards to community satisfaction (Nunkoo & Ramkissoon, 2009). Some attributes have been found to influence residents' perceptions of tourism endeavors, including demographic characteristics (McGehee & Andereck, 2004), level of economic dependency on tourism sector activities (Liu & Var, 1986), and length of residence in the local community (Lankford & Howard, 1994). Geospatial attributes in terms of residence distance to a specific tourism attraction or town, have also drawn some researchers' attention for shaping residents' perceptions of regional tourism development (Gursoy, Jurowski, & Uysal., 2002; Harrill & Potts, 2003; Harrill, 2004; Jurowski & Gursoy, 2004; McGehee, Lee, O'Bannon, & Perdue, 2010; Raymond & Brown, 2007).

Albeit the existing collection of studies on residents' perceptions of tourism development, there is scarce information related to linear tourism settings and particularly wine trails. Filling this knowledge gap is pertinent taking into consideration the burgeoning of wine trails around the world and their suggested capacity to foster economic development that can span across cities, counties, and even countries. A better understanding of the attributes influencing residents' perceptions of wine tourism is also desirable from the management perspective as residents' support is fundamental to further tourism development and to enhance community satisfaction. Community stakeholders and policy makers can also use information on residents' perceptions to foster the sustainable development of local communities.

Thus, a study was conducted in the Piedmont region of North Carolina (U.S.) to examine residents' perceptions of local wine tourism covering a set of personal benefits as well as a suite of economic, socio-cultural and environmental impacts in surrounding communities. The Piedmont region was chosen as the study setting because it hosts the majority of wine trails in the state of North Carolina and because of their rapid, albeit recent, growth. Specifically, this study addressed three objectives: (1) assess residents' perceptions of local wine tourism development in terms of personal benefits and community impacts; (2) examine whether residents' socio-demographic characteristics and level of wine enthusiasm, and tourism characterization of wine trails are associated with residents' perceptions of local wine tourism development; and (3) examine the mediating effect of perceived personal benefits on perceived community impacts associated with local wine trails.

2. Literature review

Perceptions are mental interpretations of individual's experiences, which may be substantially different from reality (Lindsay & Norman, 1977; Pickens, 2005). Thus, in the tourism context, perceptions are examined to understand how stakeholders (e.g., local residents, tourists) interpret the impacts -positive and negative-of a given tourism development (e.g., wine trails). Given that perceptions inform individuals' attitudes (i.e., tendency to behave in certain way) and that both terms are closely related (Pickens, 2005), attitudes and perceptions are used interchangeably in many tourism studies and are measured with similar items and scales (Andereck & Nyaupane, 2011; McGehee & Andereck, 2004). The following paragraphs describe the theoretical evolution of residents' perceptions related to tourism development aiming to layout the rationale behind different approaches and measurements used in their assessment. Then, attributes found to influence residents' are summarized.

2.1. The theoretical evolution of residents' perceptions studies

Studies on residents' attitudes and perceptions in tourism communities date back to the 1960s, when the main focus was to examine the perceived positive impacts (i.e., benefits) derived from tourism development (Jafari, 1986). A decade later, when the deterioration of natural and cultural resources arose from tourism development started to be evident, benefits-related studies evolved to include negative impacts (Belisle & Hoy, 1980; Pizam, 1978). In this context, the Social Exchange Theory became a suitable framework to assess residents' perceptions of tourism development because it accounts for the complex and dynamic evaluations behind individuals' decisions seeking to maximize the value of their experiences (Andereck, Valentine, Knopf, & Vogt, 2005; Choi & Murray, 2010; Jurowski & Gursoy, 2004; Jurowski, Uysal, & Williams, 1997). Thus, individuals are likely to engage in a certain behavior if they perceive a positive exchange in which benefits outweigh costs (Andriotis, 2005; McGehee & Andereck, 2004; Nunkoo & Ramkissoon, 2011; Wang & Pfister, 2008). In the case of tourism, residents within a community are more likely to positively support or engage in tourism development if the benefits perceived from such development outweigh the costs (Andereck et al., 2005; Chen & Chen, 2010; Lankford & Howard, 1994; Perdue, Long, & Allen, 1990).

In the 1990s, researchers started focusing on the sustainability of tourism development that required a more holistic approach to integrate different stakeholders' (including residents') perceptions into the evaluation of an array of positive and negative impacts that tourism produces in the destination in the environmental, and socio-cultural, economic domains (e.g., Milman & Pizam, 1988; Perdue et al., 1990). Research on residents' perceptions also moved from macro (e.g., statewide) to micro approaches by exploring specific variables predicting residents' perceptions of tourism within communities (McGehee & Andereck, 2004). The quest for sustainability in the new millennium has triggered a renewed interest in residents' perceptions of tourism developments, especially related to the impacts on the environment and society (Gursoy, Chi, & Dyer, 2009; Northcote & Macbeth, 2006).

2.2. Measurements of residents' perceptions: community and personal approaches

Traditionally, studies assessing residents' perceptions of tourism development concentrate on the suite of impacts produced in the community and the environment (Andereck & Nyaupane, 2011). Common perceived benefits associated with tourism are increasing employment opportunities, improving quality of life of local residents, and cultural exchange between tourists and residents. Perceived negative impacts include the increase in the prices of goods and services, increase in traffic congestion, and damage to natural environment and landscape (Gursoy & Rutherford, 2004; Ko & Stewart, 2002). Theoretical advances related to tourism impacts and the complexity of individuals' attitudes, pushed toward

integrated approaches to understand residents' perceptions. Jurowski et al. (1997) introduced the evaluation of perceived tourism impacts within three dimensions (economic, social, and environmental), and their model was later challenged for the aggregation of costs and benefits into each dimension (Gursoy, Jurowski, & Uysal, 2002; Gursoy & Rutherford, 2004). Thus, six dimensions —positive/negative economic, socio-cultural, and environmental impacts— are more prevalent within the literature (Chen & Chen, 2010; Ko & Stewart, 2002; Kuvan & Akan, 2005; Vargas-Sanchez, Plaza-Mejia, & Porras-Bueno, 2009; Yoon, Gursoy, & Chen, 2001).

Perceived tourism impacts at the individual level —personal benefits— have also been examined. For example, McGehee and Andereck (2004) probed residents' personal benefits associated with tourism development with a two-item construct (i.e., "I would personally benefit from more tourism development in my community", "the amount I feel I benefit personally from tourism in my community"). Wang and Pfister (2008) further developed an eight-item scale to measure personal benefits along eight aspects: contributions to the economy, downtown revitalization, special events and programs, arts and cultural features, shopping and dining choices, recreation opportunity, historic homes, and community services. Although these studies verified the influence of personal benefits —especially indirect social values— in residents' perceptions, they failed to validate the scale developed to measure personal benefits. A more recent study of residents' perceptions of tourism impacts on quality of life, which integrated residents' perceptions of personal benefit as a mediator, confirmed the need to include a measure of personal benefit when examining residents' perceptions of tourism development (Andereck & Nyaupane, 2011).

Scarce are studies assessing residents' perceptions of linear tourism attractions, and the existing ones mostly focus on economic impacts. For example, Bowker, Bergstrom, and Joshua (2007) concluded that the Creeper Rail Trail in Virginia (U.S.) represents a high value asset for the local community because of the tourists' expenditures along the trail. Rural tourism routes in South Africa also showed to be economically beneficial for surrounding communities because they stimulate cooperation and partnerships among locals (Briedenhann & Wickens, 2004). Cultural benefits associated with linear tourism attractions have also been identified, especially in the form of increased community pride (Besculides, Lee, & Mccormick, 2002; Boley & Johnson Gaither, 2016). Cultural benefits were also reported in the U.S. as ethnic identification along Los Caminos Antiguos Scenic and Historic byway (Besculides et al., 2002) and as community cohesiveness along the Gullah Geechee Cultural Heritage Corridor Boley and Johnson Gaither (2016).

2.3. Attributes influencing residents' perceptions of tourism development

Several attributes, especially in terms of demographic characteristics, have been found to influence residents' perceptions of tourism development. Younger (McGehee & Andereck, 2004) or more educated (Korça, 1998) individuals tend to perceive tourism development more positively than others. However, such associations are inconclusive as other studies have found opposite results related to age (Tomljenovic & Faulkner, 1999) and education (Ahmed, 1986). Thus, it has been suggested that socio-demographic attributes do not influence residents' perceptions of tourism directly, but are mediated by perceived personal benefits (McGehee & Andereck, 2004; Purdue et al., 1990).

Residents who are business owners (Lankford, 1994) or financially dependent on the tourism industry (Deccio & Baloglu, 2002; Haralambopoulos & Pizam, 1996; Jurowski et al., 1997; Lankford & Howard, 1994) tend to positively welcome tourism developments as they perceive greater economic benefits derived from this industry. Community satisfaction is also related to residents' perceptions of tourism development (Ko & Stewart, 2002), although this relationship is not well understood (Nunkoo & Ramkissoon, 2011). Length of residence is found to be related with residents' perceptions of tourism development as well, but the direction and strength of the relationship is inconsistent across studies (Jurowski et al., 1997; Lankford & Howard, 1994; McGehee & Andereck, 2004).

Residents' perceptions of tourism development also appear to be influenced by geospatial factors (Belisle & Hoy, 1980; Harrill, 2004; Jurowski & Gursoy, 2004; Keogh, 1990; Mansfield, 1992; Raymond & Brown, 2007). However, past studies only focused on specific attractions (e.g., recreational areas) or entire tourism destinations (e.g., Gursoy et al., 2002; Harrill & Potts, 2003). Yet, results from these studies are not conclusive. Some researchers found that residence proximity to a tourism area increases the awareness of the benefits of tourism development (Belisle & Hoy, 1980; Mansfield, 1992; Sheldon & Var, 1984), while others found distant residents perceived more favorably tourism impacts and development (Harrill & Potts, 2003; Jurowski & Gursoy, 2004; Raymond & Brown, 2007).

3. Research methods

3.1. Study setting

This study focused on neighboring communities along the Haw River and Surry County wine trails located in the Piedmont region of North Carolina (U.S.), where nine of the 23 wine trails in the state are located (Fig. 1). The Piedmont covers 5875 square miles in 12 counties and is home to 646,333 households with an average median household income of $41,873 (US Census Bureau, 2010). Only 18% of the residents have at least a Bachelor's degree, and 17% of households live below poverty level (US Census Bureau, 2010). Besides the growing wine industry, the Piedmont has previously known for its textile, tobacco and furniture industries. However, the latter three industries have experienced a decline and falling in employment this past decade (Denniston, 2006).

The Haw River and Surry County wine trails were selected for this study because they have unique geospatial and tourism characteristics that can facilitate the identification of factors associated with residents' perceptions. According to Xu, Leung, and Barbieri (2016), both wine trails share similar geospatial characteristics in terms of the number of composing wineries ($n = 4$), length (Haw River = 43 miles; Surry County = 32 miles), and their easy and close access from a highway (Haw River = .08 miles; Surry County = .02 miles). However, these two trails differ on the comprehensiveness of their tourism offerings; Haw River is highly comprehensive in terms of variety of tourism amenities while Surry County is moderately comprehensive. Thus, including both trails serve to evaluate the effect of the comprehensiveness of tourism offerings on residents' attitudes while holding constant other attributes (e.g., wine trail length, accessibility).

3.2. Survey instrument

A survey questionnaire was developed to collect information on residents' socio-demographic characteristics and level of wine enthusiasm as well as their perceptions of local wine trails. Socio-demographic data queried were age in years (continuous), level of education (5 categories from high-school degree to advanced degree), and whether they own their current residence (dichotomous). Length of residence in their current neighborhood in years (continuous) was also collected. Frequency of visits to the nine Piedmont wine trails was queried using a five-point Likert scale

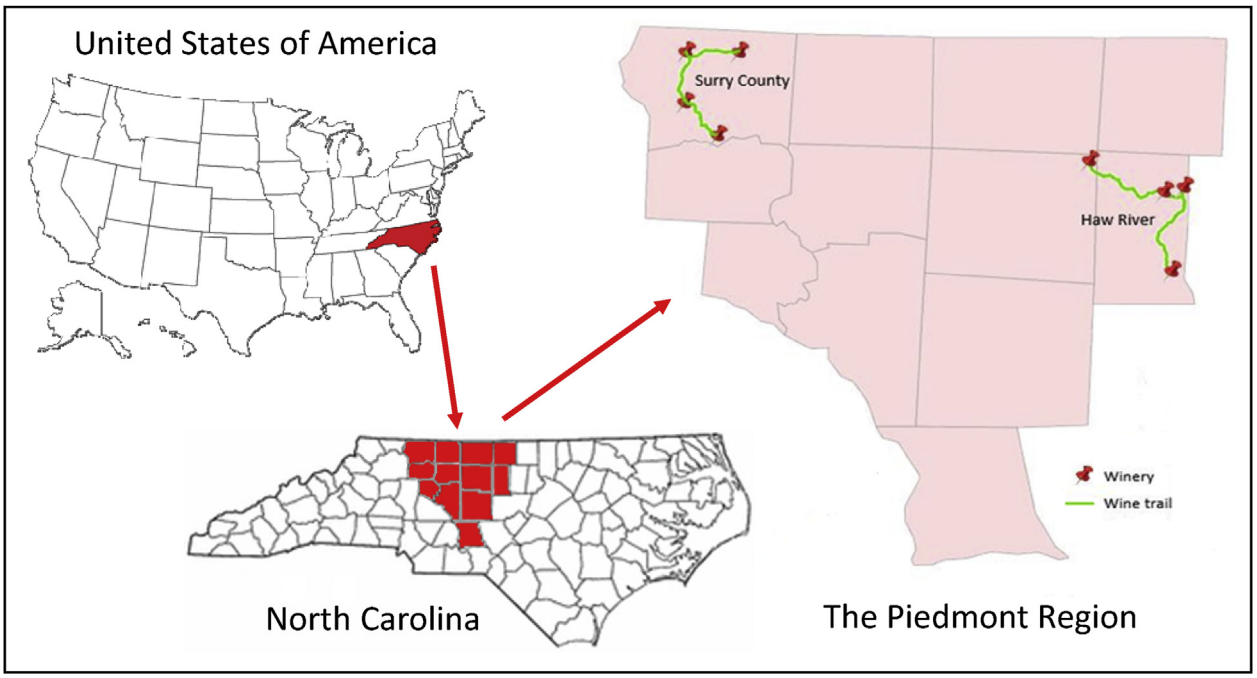

Fig. 1. Study wine trails location in the Piedmont Region (NC, USA).

("1 = never"; "5 = frequently"). Residents' level of wine involvement was queried through five statements (all in dichotomous form) in terms of whether a household member is a subscriber to a wine-related magazine, a member of a wine club, a member of a wine-related organization, a follower of online wine-related social media, or a participant of any informal wine social group.

Scale instruments (set of qualitative statements associated with a quantitative metric unit; Trochim, 2001) to measure resident's perceptions of tourism development are not standardized yet (Lankford & Howard, 1994) most likely because the nature and strength of the tourism impacts vary across the types of attraction and the characteristics of the surrounding community. Therefore, two measurement scales were constructed to assess residents' perceptions of local wine trails at the personal (i.e., Personal Benefits) and community (i.e., Community Impacts) levels based on the extant literature. The Personal Benefits scale was constructed based on items first suggested by McGehee and Andereck (2004) and later adapted by Wang and Pfister (2008), and Andereck and Nyaupane (2011); the Community Impacts scale was developed with statements modified from Ko and Stewart (2002) and Smith, Anderson, Davenport, and Leahy (2013). It is appropriate to clarify that the nature of most items included in the Community Impacts scale are generally interpreted as either positive (e.g., beauty of local landscapes) or negative (e.g., littering). However, three items that could have divergent interpretations were interpreted based on the prevalent literature as follows: "Tranquility of the community" and "Small-town feeling of the community" as positive impacts, and "Real estate cost and property tax" as negative impact.

The personal benefits scale included in the survey comprised seven items representing two dimensions: *Personal Enhancement* depicted benefits directly reaching the participant life (4 items; e.g., "My property value has increased"; "I have more opportunities to participate in recreational activities"); *Community Sentience* captured a set of personal benefits that residents indirectly experience as a result of the enhancement of their community (3 items; e.g., "I feel my community is a better place to live", "I care more about my community's natural resources"). All personal benefits were measured using a Likert five-point scale (1 = "strongly disagree"; 5 = "strongly agree"). The community impacts scale used in the study comprised 24 items representing three dimensions of perceived positive and negative impacts: *Economic Impacts* (8 items; e.g., "Economic stability of the community"; "Prices of goods and services"), *Socio-cultural Impacts* (8 items; e.g., "small town feeling of the community", "crime in the community"), and *Environmental Impacts* (8 items; e.g., "quality of public infrastructure and facilities", "traffic congestion and parking problems"). Items were measured using a five-point Likert scale (1 = "significantly decreased"; 5 = "significantly increased").

3.3. Sampling and survey procedures

A stratified random sample of 663 households residing in communities within a 10-mile buffer around each wine trail was drawn (Haw River = 401 households; Surry County = 262 households). The stratification was designed to represent all zip codes within the study site (32 zip codes) and to capture households of varying distance from the wine trails. Only zip codes with at least five percent of their areas falling within the 10-mile buffer were included. One-half of the sample from each wine trail was randomly drawn within a 5-mile buffer, and the other half within a 5–10 mile buffer.

The drop-off/pick-up method for household survey research was used and consists of delivering questionnaires by hand to residences within study communities. This method was chosen as it reduces non-coverage error, increases response rate (Steele et al., 2001), and thus, is suitable for surveying small rural communities such as the study sites. Data collection spanned two and half months (October–December, 2013) and involved a two-day procedure. Surveys were dropped off on weekends; the field researcher knocked on the door of sampled households, explained the study purposes. If the resident agreed to take part in the survey, they were handed a bag containing the survey instrument and a cover letter, and asked to hang the completed survey (in the supplied bag) on their doorknob on a designated date for pick-up. Pick-

ups were scheduled during weekdays (2–3 days after drop-off). If no package was hung on the doorknob, the researcher left a stamped envelope along with a brief note asking residents to mail their completed surveys back. This procedure was implemented after an attempt to drop-off the surveys with no personal contact resulted in a very low response rate during the first week of data collection along Haw River.

A total of 344 surveys were collected (294 picked-up; 50 mailed back) representing an overall response rate of 51.9%. Specifically, 164 surveys were collected from the Haw River area (144 picked-up; 20 mailed back; 40.9% response rate) and 155 from the Surry County surroundings (140 picked-up; 15 mailed-back; 59.2% response rate). The lower response rate along the Haw River was because of the method employed during the first week of data collection (dropping off the survey at selected households with no personal contact) which was modified to increase participation as aforementioned. A total of 300 completed surveys were included for analysis after excluding 44 surveys that were returned entirely or mostly blank (e.g., only demographic section was reported). Surveys returned with most questions answered were included in the analysis; tables denote the number of valid responses per question (n).

3.4. Data analysis

Data analysis included descriptive statistics, reliability tests, and multivariate regressions ($p < .05$). Descriptive statistics were used to outline respondents' characteristics (e.g., demographic composition, level of wine enthusiasm), and their perceptions of local wineries and wine trails (i.e., personal benefits; community impacts). Cronbach's alphas were computed to test the internal reliability of items comprising each dimension of personal benefits (*Personal Enhancement*, *Community Sentience)* and community impacts (*Economic, Socio-cultural, Environmental*), respectively; .33 corrected item score was used as the criterion to retain an item within a dimension (Ho, 2006). Then, the grand means for personal benefits and each impact dimension were calculated; overall mean scores of personal benefits and impacts were also calculated. To standardize measurements, item statements stating that Piedmont wineries increased “real estate and property tax”, “prices of goods and services”, “economic inequality among residents”, “crime in the community”, and “overcrowding in public area” were reverse coded for calculating dimension and overall means.

Multivariate regressions were used to examine the influence of residents' socio-demographics, their level of wine enthusiasm, and wine trail tourism characterization on residents' perceived personal benefits and community impacts associated with local wineries. Specifically, three consecutive regression paths were followed. First, residents' socio-demographics (age, education level, residence ownership, length of residence in current neighborhood), level of wine enthusiasm (wine involvement, visit frequency to Piedmont wine trails), and wine trail tourism characterization (High versus Moderate) were regressed to residents' perceived personal benefits of local wineries (*Personal Enhancement*, *Community Sentience*, overall personal benefits). Given the categorical nature of the tourism characterization of the study wine trails (Haw River = High; Surry County = Moderate), it was entered into the model in a dichotomous form (Haw River, otherwise). In the second path, those same seven independent variables were regressed to four indicators of perceived community impacts (*Economic, Socio-cultural, Environmental*, overall). In the third path, to confirm its mediating role, residents' personal benefits were regressed to their perceived *Economic, Socio-cultural and Environmental* impacts of local wineries.

Preliminary statistical tests were conducted to examine whether demographic composition of residents within the 10 mile buffer of the two wine trails were comparable. Results showed no significant differences in key demographic characteristics (age, $t = -.833$, $p = .405$; level of formal education, $\chi^2 = 2.15$; $p = .708$; pre-tax household income, $\chi^2 = 1.51$, $p = .912$) between both groups, thus supporting treating them as one sample.

4. Results

4.1. Respondents profile

Most respondents were female (58.4%) and 46.6% were middle-aged between 46 and 65 years old ($M = 52.3$); they had different levels of formal education, ranging from a high-school degree or less (23.5%) to at least a four-year college degree (28.2%). Almost half (49.1%) of the respondents were full-time employees. Notably, 31.5% were retired, which is consistent with the senior age composition of respondents. Nearly half (48.6%) of respondents reported a pre-tax annual household income less than $50,000, also consistent with the overall relatively low incomes in the region; 28.6% earned at least $75,000 annually (Table 1). The majority (84.0%) of respondents owned their current living place. Respondents were rooted in their community, having lived 38 years on average in their current neighborhood.

Few respondents (10.2%) indicated that at least one member of their household was involved with wine-related activities; out of them, most (6.4%) had a low involvement level, being engaged in only one of the listed activities. Following online wine-related social media (4.7%) and being a member or friend of a wine club (4.7%) were the most typical ways of being involved. Study respondents were somewhat frequent wine-trail visitors. In the past three years, 47.9% have visited at least once a winery located in the Piedmont region and 29.1% outside the Piedmont (Table 2). Within the same time-frame, about one fifth of respondents had visited Haw River (20.4%) or Surry County (26.0%) wine trails. Other Piedmont wine trails respondents visited, although to a lesser extent, were the Yadkin River (15.7%) and Lexington Loop (11.0%).

4.2. Personal benefits perceived from local wine trails

Overall, respondents perceived limited personal benefits ($M = 3.14$) associated with winery development in the Piedmont (Table 3). Respondents agreed that the winery and wine tourism development in the Piedmont has influenced them to care more about their community's cultural ($M = 3.31$) and natural ($M = 3.31$) resources, but slightly disagreed that wine trails increases their property value ($M = 2.92$) or quality of life ($M = 2.96$). Cronbach's tests showed high internal reliability among the *Personal Enhancement* ($\alpha = .817$) and *Community Sentience* ($\alpha = .859$) dimensions of perceived personal benefits obtained from wineries. Considered by dimensions, respondents' perceived personal benefits were more pronounced regarding the sentience toward their community ($M = 3.26$) than to their individual enhancement ($M = 3.05$).

Overall, respondents perceived that their communities were not strongly benefited after Piedmont wineries were established ($M = 3.21$; Table 4). They did not perceive major negative impacts derived from the establishment of wineries in their communities either, although they reported a slight increase in their real estate and property taxes ($M = 3.28$) and the prices of goods and services in their local communities ($M = 3.20$). Examined by dimensions, *Socio-cultural* impacts were most positively rated ($M = 3.24$; $\alpha = .853$), closely followed by *Economic* ($M = 3.23$; $\alpha = .885$) and *Environmental* ($M = 3.17$; $\alpha = .847$) impacts. Within the *Economic* dimension, most respondents reported that Piedmont wineries

Table 1
Overall characteristics and level of involvement with wine-related activities of respondents' households.

Household & wine involvement Indicators	Number of respondents	Percent of respondents
Household income (n = 237)		
Less than $25,000	48	20.3%
$25,000 – $49,999	67	28.3%
$50,000 – $74,999	54	22.8%
$75,000 – $99,999	39	16.4%
$100,000 or more	29	12.2%
Mean		(2.8)[a]
Home ownership (n = 294)		
Home owners	247	84.0%
Home renters	47	16.0%
Number of years living in current neighborhood (n = 221)		
Less than 3 years	26	9.2%
3 – 5 years	38	13.4%
6 – 10 years	44	15.5%
11 – 20 years	52	18.4%
21 – 34 years	50	17.7%
35 – 50 years	51	18.0%
51 years or more	22	7.8%
Mean (in years)		(38.0)
Household involvement with wine-related activities[b] (n = 295)		
Subscriber to a wine-related magazine	6	2.0%
Member or friend of a wine club	14	4.7%
Member of a wine-related organization	2	.7%
Follower of online wine-related social media	14	4.7%
Respondent of any informal wine social groups	11	3.7%
No connection with any wine-related activity	265	89.8%
Wine involvement index[c] (n = 295)		
None	265	89.8%
One	19	6.4%
Two	8	2.7%
Three or more	3	1.1%

[a] Measured on a 5-point scale ranging from "Less than $25,000" (1) to "$150,000 or more" (6).
[b] Percentages sum to more than 100%, as respondents were able to select multiple categories.
[c] Index constructed by adding the five indicators of wine-related activities ("1 = Yes"; "0 = No").

Table 2
Visit frequency to wine trails in and outside the Piedmont in the past three years.

Wine trails	Never	Rarely	Occasionally	Sometimes	Frequently	Mean[a]
Overall wine trails visitation						
Piedmont wine trails	52.1%	16.7%	19.4%	6.4%	5.4%	1.96
Outside the Piedmont	70.9%	17.1%	6.7%	5.0%	.3%	1.47
Study wine trails (n = 300)						
Haw river	79.6%	11.0%	6.7%	1.7%	1.0%	1.33
Surry county	74.0%	8.3%	11.7%	3.3%	2.7%	1.52
Other piedmont wine trails (n = 300)						
Yadkin river	84.3%	5.3%	7.4%	1.0%	2.0%	1.31
Upper Yadkin	90.3%	2.7%	4.4%	1.3%	1.3%	1.21
Lexington loop	89.0%	4.6%	4.7%	.7%	1.0%	1.20
Swan Creek	91.7%	3.0%	3.3%	1.0%	1.0%	1.17
Scenic 421	93.3%	2.0%	2.3%	1.4%	1.0%	1.15
Piedmont heritage	92.3%	4.7%	2.0%	.3%	.7%	1.12
Midlands	96.8%	1.9%	.7%	.3%	.3%	1.06

[a] Measured on a 5-point Likert scale ranging from "Never" (1) to "Frequently" (5).

Table 3
Residents' perceived personal benefits associated with Piedmont wineries.

Personal benefits (n = 291)	Strongly disagree	Somewhat disagree	Neutral	Somewhat agree	Strongly agree	Mean[a]
Personal enhancement (α = .817)						**3.05**
My understanding of other cultures has increased	3.4%	8.3%	57.4%	29.2%	1.7%	3.18
I have more opportunities to participate in recreational activities	4.1%	9.3%	56.2%	27.7%	2.7%	3.16
The quality of my personal life has improved	6.5%	10.3%	65.7%	16.1%	1.4%	2.96
My property value has increased	4.7%	14.0%	67.5%	12.0%	1.7%	2.92
Community sentience (α = .859)						**3.26**
I care more about my community's cultural resources	2.4%	6.2%	51.9%	36.8%	2.7%	3.31
I care more about my community's natural resources	3.1%	4.5%	52.5%	35.5%	3.4%	3.31
I feel my community is a better place to live	5.1%	9.3%	52.4%	30.8%	2.4%	3.16
Overall perceived personal benefits (mean)						**3.14**

[a] Measured on a 5-point Likert scale ranging from "Strongly disagree" (1) to "Strongly agree" (5).

Table 4
Residents' perceived impacts of Piedmont wineries on local communities.

Impacts by dimensions ($n = 284$)	Significantly Decreased	Decreased	Stayed the same	Increased	Significantly Increased	Mean[a]
Economic impacts ($\alpha = .885$)						**3.23**[b]
Tourists' spending	1.8%	1.5%	29.2%	60.6%	6.9%	3.69
Variety of local businesses	1.8%	1.1%	40.1%	49.8%	7.2%	3.60
Number of local businesses	2.5%	1.8%	49.3%	42.4%	4.0%	3.43
Number of jobs	4.0%	2.2%	46.0%	45.3%	2.5%	3.40
Real estate and property tax	2.6%	.7%	66.3%	27.1%	3.3%	3.28
Prices of goods and services	2.5%	1.1%	72.3%	21.5%	2.6%	3.20
Economic stability of the community	2.2%	3.6%	70.4%	22.3%	1.5%	3.17
Economic inequality among residents	2.2%	4.1%	80.4%	11.8%	1.5%	3.06
Socio-cultural impacts ($\alpha = .853$)						**3.24**[c]
Variety of cultural activities	2.2%	1.5%	42.3%	47.8%	6.2%	3.54
Conservation of local heritage	2.2%	1.1%	63.7%	29.6%	3.3%	3.31
Sense of community identity	2.2%	1.8%	66.4%	26.7%	2.9%	3.26
Quality of life of Piedmont residents	2.5%	1.5%	68.0%	26.5%	1.5%	3.23
Number of local recreational facilities	1.9%	1.1%	75.3%	19.9%	1.8%	3.19
Small town feeling of the community	2.2%	5.8%	67.5%	22.7%	1.8%	3.16
Quality of public services	2.5%	1.1%	83.6%	11.3%	1.5%	3.08
Crime in the community	3.6%	4.0%	83.6%	7.7%	1.1%	2.99
Environmental impacts ($\alpha = .847$)						**3.17**[d]
Beauty of local landscapes	2.5%	1.1%	43.5%	45.3%	7.6%	3.54
Environmental consciousness	2.6%	.3%	67.8%	26.3%	3.0%	3.27
Health of local ecosystems	2.6%	1.9%	67.5%	26.2%	1.8%	3.23
Tranquility of community	2.6%	4.8%	67.6%	23.2%	1.8%	3.17
Quality of public infrastructure and facilities	1.8%	1.1%	80.5%	15.1%	1.5%	3.13
Traffic congestion, parking problems	2.5%	2.5%	81.2%	12.3%	1.5%	3.08
Overcrowding in public areas	2.6%	2.5%	81.1%	13.1%	.7%	3.07
Littering	3.6%	6.9%	81.1%	6.9%	1.5%	2.96
Overall perceived impacts (mean)						**3.21**

[a] Measured on a 5-point Likert scale ranging from "Significantly decreased" (1) to "Significantly increased" (5).
[b] The dimensional mean for *Economic Impact* is calculated after reversing means for "real estate and property tax", "prices of goods and services", and "economic inequality among residents".
[c] The dimensional mean for *Socio-cultural Impact* is calculated after reversing means for "crime in the community".
[d] The dimensional mean for *Environmental Impact* is calculated after reversing means for "traffic congestion and parking problems", "overcrowding in public areas", and "littering".

Table 5
Multiple linear regressions of residents' socio-demographic characteristics and level of wine enthusiasm, and wine trails' tourism attributes on residents' personal benefits.

Independent variables	Personal benefits (standardized β and significance)		
	Overall	Personal enhancement	Community sentience
Age	−.061	−.072	−.036
Education level	.047	.067	.017
Residence ownership (Yes, otherwise)	.022	−.003	.046
Visit frequency to Piedmont wine trails	.310***	.289***	.298***
Household wine involvement	.164**	.173**	.135**
Length of residence in current neighborhood	−.063	−.054	−.067
Wine trail tourism type (High, otherwise)	.095	.077	.105*
Model statistics			
R	.416	.412	.376
R^2	.173	.170	.141
p-value	<.001	<.001	<.001

*p < .10 **p < .05 ***p < .001.

increased tourists' spending (67.5%; $M = 3.69$) and the variety of local businesses in the area (57.0%; $M = 3.60$). Increase in the variety of cultural activities ($M = 3.54$) and the beautification of local landscapes ($M = 3.54$) were perceived as the most positive impacts under the *Socio-cultural* and *Environmental* dimensions, respectively.

4.3. Factors associated with residents' perceptions of wine trails

Multivariate regressions showed that residents' socio-demographic characteristics, their level of wine enthusiasm, and the tourism characterization of wine trails were associated with their overall perceived personal benefits ($R^2 = .173$, $p < .001$) and its two dimensions, *Personal Enhancement* ($R^2 = .170$, $p < .001$) and *Community Sentience* ($R^2 = .141$, $p < .001$; Table 5). When controlling for other variables, respondents' visitation frequency to Piedmont wine trails and their involvement in wine-related activities were positively associated with their overall perceived personal benefits ($\beta = .310$, $p < .001$; $\beta = .164$, $p = .007$), *Personal Enhancement* ($\beta = .289$, $p < .001$; $\beta = .173$, $p = .004$), and *Community Sentience* ($\beta = .298$, $p < .001$; $\beta = .135$, $p = .028$). Additionally, residents living close to wine trails with a higher and more comprehensive level of tourism amenities are more likely to recognize the benefits derived from local wine development.

Significant results were also obtained when residents' socio-demographic characteristics, their level of wine enthusiasm, and wine trails' tourism characterization were regressed on the overall perceived impacts of wine trails on communities ($R^2 = .120$,

Table 6
Multiple linear regressions of residents' socio-demographic characteristics and level of wine enthusiasm, and wine trails' tourism attributes on residents' perceived impacts of wineries on communities.

Independent Variables	Perceived impacts (standardized β and significance)			
	Overall	Economic	Socio-cultural	Environmental
Age	.158**	.005	.169**	.212**
Education level	.096	.128**	.085	.049
Residence ownership (Yes, otherwise)	.109	.196**	.070	.001
Visit frequency to Piedmont wine trails	.240***	.124*	.263***	.211**
Household wine involvement	.035	−.033	.060	.068
Length of residence in current neighborhood	−.175**	−.216**	−.131*	−.164**
Wine trail tourism type (High, otherwise)	.044	−.119*	.110*	.080
Model statistics				
R	.346	.354	.359	.325
R^2	.120	.125	.129	.106
p-value	<.001	<.001	<.001	.001

*$p < .10$ **$p < .05$ ***$p < .001$.

$p < .001$), as well as their comprising *Economic* ($R^2 = .125$, $p < .001$), *Socio-cultural* ($R^2 = .129$, $p < .001$), and *Environmental* ($R^2 = .106$, $p = .001$) dimensions (Table 6). When controlling for other variables, older respondents tend to have more positive perceptions of wine trails overall ($\beta = .158$, $p = .019$) as well as on *Socio-cultural* ($\beta = .169$, $p = .012$) and *Environmental* ($\beta = .212$, $p = .002$) impacts. Residents with a higher education level and who own their current living place tend to have a more positive attitude on the *Economic* ($\beta = .128$, $p = .042$; $\beta = .196$, $p = .004$) impacts. Respondents' frequency of visits to Piedmont wine trails and their length of residence in their neighborhood were significantly associated with their overall perceived impacts of local wineries ($\beta = .240$, $p < .001$; $\beta = -.175$, $p = .011$) as well their perceptions on the *Economic* ($\beta = .124$, $p = .051$; $\beta = -.216$, $p = .002$), *Socio-cultural* ($\beta = .263$, $p < .001$; $\beta = -.131$, $p = .054$) and *Environmental* ($\beta = .211$, $p = .001$; $\beta = -.164$, $p = .018$) impacts. However, the effect of these variables were in opposing directions; the more residents visited local wineries, the more they acknowledged their impacts, while the longer they have lived in the area, the less recognizant they were of the wine tourism impacts on their communities. A more comprehensive tourism offer along the wine trail (i.e., Haw River) was negatively associated with perceived *Economic* impacts ($\beta = -.119$, $p = .054$) but positively associated with the perceived *Socio-cultural* impacts ($\beta = .110$, $p = .071$) of wine trails.

Results showed residents' perceived personal benefits were associated with the perceived *Economic* ($R^2 = .121$, $p < .001$), *Socio-cultural* ($R^2 = .448$, $p < .001$), and *Environmental* ($R^2 = .295$, $p < .001$) impacts derived from local wine tourism development, suggesting a mediating effect of personal benefits on residents' perceived impacts of wineries on the communities (Table 7). Among personal benefits, a perceived opportunity to participate in recreational activities was positively associated with their perceptions of *Economic* ($\beta = .235$, $p = .015$), *Socio-cultural* ($\beta = .298$, $p < .001$) and *Environmental* ($\beta = .280$, $p = .001$) impacts. Respondents' perceived increase in their property value was significantly associated with their *Socio-cultural* ($\beta = .153$, $p = .004$) and *Environmental* ($\beta = .136$, $p = .021$) perceptions of wine tourism development. Within the *Community Sentience* dimension, residents who feel their communities became better places to live because of wine trail development tended to hold more favorable opinions of the *Socio-cultural* ($\beta = .368$, $p < .001$) and *Environmental* ($\beta = .179$, $p = .042$) impacts of wine trail development.

5. Discussion and implications

This study, which documents local residents being relatively neutral in their perceptions of the Piedmont wine tourism development, challenges the general positive attitudes associated with other types of tourism development (Andereck & Vogt, 2000; Gursoy & Rutherford, 2004; McGehee & Andereck, 2004). These results may be associated to the relatively early stage of wine tourism development in this region, as many previous studies were conducted in well-developed, high-density tourist areas (Harrill & Potts, 2003; Sheldon & Var, 1984; Williams & Lawson, 2001). Also contrary to the extant literature (McGehee & Andereck, 2004; Vargas-Sanchez et al., 2009), study respondents recognized wine trails' socio-cultural benefits to a greater extent than economic ones. These results may be explained by the prominence of

Table 7
Multiple linear regression of personal benefits on residents' perceived impacts of wineries on communities.

Independent Variables - personal benefits	Dependent Variables – perceived impacts (standardized β and significance)		
	Economic	Socio-cultural	Environmental
Personal enhancement			
My understanding of other cultures has increased	−.013	−.055	.061
I have more opportunities to participate ina recreational activities	.235*	.298**	.280**
The quality of my personal life has improved	.014	−.106	−.061
My property value has increased	−.012	.153**	.136*
Community sentience			
I care more about my community's cultural resources	−.195	−.017	.022
I care more about my community's natural resources	.150	.141	.042
I feel my community is a better place to live	.162	.368**	.179*
Model statistics			
R	.348	.670	.543
R^2	.121	.448	.295
p-value	<.001	<.001	<.001

*$p < .05$ **$p < .001$.

respondents residing in their current neighborhood for a long time which may have a greater awareness of local cultural activities or may have developed over time a high appreciation for local socio-cultural values. The large proportion of retirees in the sample may also help explain that cultural benefits are valued higher than economic ones as the natural and cultural richness of the Piedmont drives people to move into this region after retirement.

An important and intriguing finding of this study is that the comprehensiveness of tourism amenities offered by the entire wine trail was negatively associated with perceived economic impacts but positively associated with the perceived socio-cultural impacts of local wine development. From the management perspective, these findings are important as they may suggest that the more 'touristic' destinations become, the more they encroach themselves, thus limiting further economic spread in local communities. In this sense, results suggest place more emphasis in developing policies rewarding the establishment of partnerships between wineries and local entrepreneurial developments. From the scholarship perspective, this finding is intriguing because it indicates the need for more empirical research to further explore whether other tourism indicators (e.g., existence of a dominant winery in the wine trail) influence residents' perceptions of wine tourism development. Empirical research could look at whether regions with a mature wine tourism industry have a significantly more positive view of the impacts that wineries and wine trails have on their communities.

This study also provides methodological implications. For example, the modified scale used in the study to measure personal benefits was developed in response to the necessity to more comprehensively capture residents' personal benefits (McGehee & Andereck, 2004; Wang & Pfister, 2008). High internal reliability of this enriched scale and its two dimensions (Personal Enhancement; Community Sentience) suggests that this scale could serve as a baseline to measure personal benefits in relation to other types of themed touring routes or tourism destinations overall. Although this study was designed to control for the geospatial characterization (e.g., trail length) of wine trails to isolate the effect of their tourism comprehensiveness on local residents, future research is needed to evaluate whether different geospatial indicators (e.g., levels of accessibility, road connectivity) is associated with residents' perceptions as the only spatial attribute previously evaluated in the literature is distance (Belisle & Hoy, 1980; Jurowski & Gursoy, 2004; Mansfield, 1992; Sheldon & Var, 1984; Tyrell & Spaulding, 1984).

Overall limited awareness among residents of the benefits derived from wine tourism development suggests that managers of wineries and other tourism facilities put more effort on communicating and educating residents about the positive impacts that tourism bring to local communities. Local residents might visit local wineries more often if local winery managers use traditional marketing (e.g., flyers) or social media (e.g., Facebook, Twitter) campaigns to increase awareness of the benefits of their businesses to the local communities. Since young adults appeared to have stronger positive perceptions of the wineries than older respondents, marketing campaigns might be more successful if it specifically targeted young adults. Also, when crafting their messages, Piedmont wineries' managers should capitalize on residents' overall positive perceptions about Piedmont wineries in increasing tourists' spending, diversification of local businesses, variety of cultural activities, and beautification of local landscapes.

Since the frequency of visits to local wineries was positively associated with the perceived personal benefits attained from Piedmont wine trails, winery managers might also promote popular wine-related activities (e.g., informal wine social groups, online wine-related social media) with special incentives for local residents, such as discounts or courtesy wine tastings (Lockshin & Spawton, 2001), thus increasing perceived personal benefits. To capture a larger scope of residents as potential visitors, non-wine related events and gatherings (e.g., weddings, birthday parties, concert, art exhibition) should also be expanded and hosted for local residents. These types of promotions can generate an initial buzz among locals that may result in positive word-of-mouth referral, and ultimately business loyalty (Lockshin & Spawton, 2001). In addition to increasing *Personal Enhancement* and *Community Sentience*, a more focused approach to marketing and developing wine trails in the Piedmont region can also boost its positive *Economic* impacts in the region especially related to wine tourism job opportunities and economic contributions to local economies.

Finally, winery-driven efforts to bridge the wine tourism industry with local residents should capitalize on the increased socio-cultural benefits delivered to surrounding communities as these are a tangible manifestation of residents' increased quality of life. Along the same line of thought, policy makers could foster a variety of programs (e.g., seminars, events) to disseminate the benefits of local wineries to a greater extent and help forge a stronger and more cohesive community pride and bonding.

5.1. Limitations and future research

Interpretation of study results and their implications should be taken with caution, mainly because of two limitations. First, although the two wine trails selected for this study represent different types of wine trails based on their tourism comprehensiveness (Xu et al., 2016), they are not comprehensive of the variety of wines trails that exist in North Carolina, the U.S. or other countries. Compared to wine trails found in well-developed wine tourism regions, choosing wine trails in the Piedmont at an early stage of their wine tourism development helped minimize the interference of other unrelated factors when examining the influence of trail tourism characterization, and residents' level of wine enthusiasm and socio-demographics on residents' perceptions. It could serve as a baseline for future follow-up or longitudinal studies. However, it is acknowledged that the selected wine trails may differ from those in more developed regions in the U.S. (e.g., Napa valley in California) and in other countries (e.g., Italy, Spain). Second, although the sample size is adequate for this study, it is still relatively small in number as compared to traditional studies related to tourism attitudes. The small sample size limited the possibility to conduct more sophisticated statistical analysis to examine, for example, the role of geospatial attributes on residents' perceptions.

In addition to the aforementioned theoretical and methodological contributions and practical implications, this study sheds light for future research. The incorporation of specific tourism characterization of wine trails illuminates the integration of considerations on tourism amenities and potentially geospatial characteristics when examining the personal benefits of residents living in linear tourism settings, or surrounding niche tourism destinations, which require further exploration. It will also be productive to look at the influence of geospatial attributes on residents' perceptions of wine trails in areas where the wine industry and wine tourism are more mature.

6. Conclusions

This study examined residents' perceptions of wine trails in the Piedmont region where wine tourism has been developed recently, and identified the association of the residents' socio-economic and level of wine enthusiasm, and the comprehensiveness of wine trail

tourism amenities with residents' perceptions. Specifically, this study found that wineries' managers should increase their efforts to educate local residents about the positive impacts they produce in the surrounding areas and to provide more benefit opportunities to a greater number of residents to increase favorable attitudes among locals. Policy development towards similar ends should also be forged as to increase community bonding through wine-related activities. Such understanding of residents' perceptions along wine trails illuminates the optimization of route management in the future, and more importantly, the sustainable development of local community with regards to genuinely involving residents and maximizing their benefits.

This study also contributed to the scholarship of tourism overall, and touring routes and wine tourism in particular, by extending tourism residents' attitudes studies to linear tourism settings. In particular, the personal benefit scale developed for this study appeared not only suitable for fulfilling this study's purposes but also for expanding the personal benefits scale to capture two dimensions – *Individual Enhancement* and *Community Sentience* (McGehee & Andereck, 2004; Wang & Pfister, 2008).

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