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Social Capital along Wine Trails: Spilling the Wine to Residents?

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Abstract: Social capital is a vital element of tourism development and sustainability, and has thus drawn significant attention during the past decade. Yet, this topic is still under-researched in the context of niche tourism, especially along linear tourism settings such as wine trails. As a major component of wine tourism, wine trails have been growing rapidly worldwide to further regional tourism development. To examine the level of social capital related with wine tourism, communities surrounding two wine trails in North Carolina (U.S.) were surveyed regarding the Trust, Information Sharing, Collective Action, Bonding and Bridging dimensions of social capital. Results indicated the Piedmont region has not yet fully developed the social capital associated with local wine trails, although residents perceived somewhat strong Collective Action derived from this growing tourism niche. Visitation frequency to wine trails was found to be significantly associated with all dimensions of wine tourism social capital. This study advances the wine tourism scholarship concerning social capital along wine trails (e.g., integrating main dimensions into one scale). It also sheds light on wine trail development and management, suggesting local wineries and wine trails invest greater effort in forging community bonds, especially among older residents, and bridging with local businesses.

Keywords: social capital; tourism development; winery; wine tourism; wine trail

1. Introduction

Wine trails have the capacity to attract visitors and boost local economy, and hence are increasingly being developed globally [1–3]. The U.S. alone has 289 wine trails across the country [4]. Despite the spur of wine trails and their economic capacity, research on wine trails as compared to the general wine tourism, is limited in number and scope. Existing studies on wine trails have mainly focused on either marketing issues, such as profiling visitors and exploring marketing strategies [5,6], or performance evaluation with regard to visitors' satisfaction and managerial restraints [7].

By involving various businesses and services along the trails to work together, wine trails present a natural cooperation network [8] and facilitate community bonding [9]. Strong intra-network cooperation and interaction among actors (e.g., neighbors, citizens, government) brings economic, social and civic benefits for communities, including residents' increased participation and commitment to a community [10], and thus is essential for trail success [8]. In this sense, social capital—the cornerstone of social relations, ties and networks and key to establishing intra-network cooperation [11]—becomes critical to the development of successful wine trails [12].

Social capital has been suggested for having a spatial dimension [13]. Spatial proximity, a key characteristic of local networks in industrial districts [14], helps the formation of network ties and facilitates interactions [15]. However, a straightforward connection between social capital and spatial

attributes is still lacking in the literature [16], which suggests a need to further understand how social capital and spatial attributes are associated, particularly in linear tourism settings such as wine trails.

Research of social capital in the tourism field is increasing but still relatively insufficient [17]. Recent tourism studies examined social capital either at the community level, as associated with regional tourism development [18,19], or in specific niche tourism settings such as ecotourism [20], volunteer tourism [21], rural tourism [22], craft beverage tourism [23], and even wine tourism [24]. Despite of different measurement scales used, these studies suggest general positive effects of social capital with regard to tourism development.

Research exploring social capital with incorporated spatial attributes in linear tourism settings such as wine trails is scarce, yet much needed, as such research could optimize trail development and management, engage communities and spread tourism development benefits. Researchers [25] document that social capital greatly influences community participation, while a lack of which is considered by trail managers a significant constraint to tourism trail planning and management [26]. Social capital therefore was being acknowledged essential to tourism trail development success.

Given the potential capacity of wine trails to spread benefits within surrounding communities, the limited information related to the spatial dimension of social capital in linear tourism settings, and the need of such information for informing trail management, this study examines the level of social capital in communities along wine trails in the Piedmont region of North Carolina (NC). The Piedmont region has been growing rapidly in wine industry and the wine tourism sector, comprising the most wine trails in NC, and was thus chosen for this study. Specifically, this study aimed to: (1) identify the level of perceived social capital in communities along wine trails; and (2) examine whether residents' demographic characteristics, relationship with the Piedmont region and wine trails, and trails' spatial attributes are associated with communities' perceived social capital along wine trails.

Driven by the study objectives, the next section includes an exhaustive literature review to support the need for this study and identify measurement scales most suitable to address the study purposes. Then, the research methods section details the survey instrument, designed to collect data from residents along wine trails of the chosen region, as well as the statistical analysis (e.g., multivariate linear regressions) performed. The following sections report the results obtained and discuss them in view of extant literature, and the conclusion section summarizes the practical and scholarly implications derived from this study.

2. Literature Review

2.1. Social Capital

Social capital has been extensively studied across disciplines (e.g., sociology, political science, economics) since the 1990s, with varying definitions depending on the specific problems to be addressed [27]. Putnam [28] described social capital as “features of social organization such as networks, norms, and social trust that facilitate coordination and cooperation for mutual benefit” (p. 67). As a multi-dimensional construct [29], social capital commonly incorporates dimensions of trust, information sharing, collective action, and networks [30,31].

Trust refers to the expectation community members have in other members' good intentions and actions [32]. As such, it enables community members to communicate between each other [33] and to engage in actions that otherwise would not have been possible [34]. Considering that trust is the foundation to weave intra-network social interactions and cooperation [35], which in turn enhances the quality of a network [22], it is viewed as one critical component of social capital [36].

Information sharing refers to the extent of the exchange of critical information that may facilitate collaboration between parties [37], and captures the reciprocal nature of information flow within a network that furthers access to broader resources [11]. Factors that may determine the significance of information sharing include the content and quality of the information, as well as when and how it is shared [37]. Considering its contribution to the success of community economic development and

the dynamic nature of the industry, information sharing is highly valued in tourism [18]. Sourcing sufficient and reliable information about tourism helps potential entrepreneurs tap into emerging opportunities and fully evaluate the feasibility of new tourism enterprises [25].

Collective action is broadly defined as “actions taken by members of a group to further their common interest” [38]. Through collective action, small entrepreneurs within a community are capable of mobilizing social relations that can improve their economic performance and create new opportunities for growth [39], while at the community level, local problems can be addressed more effectively [40]. Long-term collective action, especially related to tourism development, leads to community collaboration [41]. Worth noting, effective collective action results from mutual trust [42] and depends on the quality of the existent social networks [22].

Social networks are fundamental in building social capital [43] as they “glue” people together [18,23]. Social networks comprise two dimensions of social capital: bonding, defined as the internal relationships that occur horizontally within a community, and bridging defined as the way bonded groups reach out to others outside the community for information, resources and support [18,44]. A community cannot be defined solely by either bonding or bridging social capital, but rather an integration of both. Yet, some argue that bonding social capital is a necessary antecedent for bridging social capital [45].

2.2. Social Capital in Tourism Studies

In light of its crucial role in community development [30], social capital was examined by many tourism studies within the general and niche development scopes. Considered as a durable asset, social capital fits many tourism frameworks and concepts, such as stakeholder involvement, organizational networks, and partnerships [17,18]. Overall, these studies have examined social capital at both the regional/community and the organizational/individual scales [17].

At the regional/community level, research has looked into the synergistic relationships between tourism and social capital. The first line of research has identified how existing social capital within a community was instrumental to developing community-based ecotourism in Gambia [20] and increasing the effectiveness of community-driven rural tourism in South Korea [19]. Other researchers [23] unveiled that both bridging and bonding social capital also help facilitate collaboration among stakeholders and the creation of a craft-beverage tourism destination. The second line of research examined the impacts of tourism on social capital, concluding that tourism can enhance social capital through bridging with networks outside the community, creating public spaces for social interaction, and even establishing local tourism organizations [27,46]. McGehee et al. [18] took a further step, scrutinizing how social capital interacts with other forms of capital (e.g., built, natural, financial, human) in regional tourism development.

At the organizational/individual scale, research has mainly concentrated on tourism entrepreneurship. For example, both Grängsjö and Gummesson [47], and Wang and Xiang [48] examined cooperative efforts and marketing alliances of tourism businesses through reciprocal exchange of resources. Others found that trust and social network ties were important to both prospective and current tourism and related business owners in terms of starting and operating their businesses [12,25,49]. Some studies also investigated from the tourists’ perspective [27] suggesting that tourism creates and strengthens social ties between families and friends [50] and fosters interactions with others [51].

Research on wine tourism has examined social capital at both the regional/community and organizational/individual scales, but to a lesser extent, as compared to the broader literature on tourism related social capital. Hall [52] highlighted that networks and social capital were critical to the success of food and wine tourism development in rural New Zealand. Franken et al. [12] identified the importance of social capital in supporting wine entrepreneurs establishing operations in new regions in the U.S. Although some researchers have examined wine tourism regional development focusing on winery businesses’ competition and competitive behaviors [52,53], this literature review yields no information on the level of community social capital associated with wine trails.

Regardless of the scales used, the existing literature indicates that social capital is closely associated with the success of tourism development and vital to the evaluation of a region's readiness to undertake tourism development [18,54]. Despite being widely recognized for its benefits, social capital is also noted for potentially having negative consequences associated, including the conformity among community members that may result in conflicts, erosion of privacy within the community, and power imbalance among members of community in terms of decision-making [19]. Recognizing and managing potential negative consequences of social capital contributes to the sustainable niche tourism development for communities [55].

2.3. Measurements of Social Capital in Tourism

Several instruments have been proposed and used to measure social capital in tourism studies. Based on Flora's [30] Community Capitals Framework, McGehee et al. [18] used eight item statements to evaluate the bridging and bonding dimensions of social capital among tourism stakeholders in Virginia. Length of residence was found to be significantly associated with the overall tourism-related social capital and bonding dimension of social capital [18]. Grootaert, Narayan, Jones, and Woolcock [56] proposed a comprehensive social capital assessment tool for World Bank in six sections (i.e., groups and networks, trust and solidarity, collection action and cooperation, information and communication, social cohesion and inclusion, empowerment and political action).

Granovetter [57] identified the structural (which emphasizes the presence/absence of network ties, configuration, and norms) and relational embeddedness (defined as quality and strength of social ties, including trust) of social capital. Nahapiet and Ghoshal [58] added the cognitive dimension of social capital which is more subjective and includes reciprocity and shared codes by community members. Zhao et al. [25] designed a 10-item scale consisting of the structural, relational, and cognitive dimensions of social capital for the rural tourism businesses study in China and found that both relational and cognitive social capital were marginal on the probability of tourism start-up. Nahapiet and Ghoshal [58] acknowledged that many of the items for each of the three social capital dimensions were highly interrelated, which suggests taking other approaches, such as the measurement tool developed by Grootaert et al. [56], to address social capital.

Previous studies have also tested the relationship between different attributes and social capital. Length of residence [18], income [59], socio-economic status [60], and level of education [28] were found to be positively associated with overall perceived social capital. However, no significant association was found between the level of tourism involvement and overall social capital [18]. The sparsity of these results, especially in the context of linear tourism settings, calls for further examination.

Westlund et al. [16] postulated that social capital had a spatial dimension. In the local networks of industrial districts, spatial proximity lubricates the mobilization of resources within the milieu and allows an intricate network of informal contacts among actors [61]. Larsen and Bærenholdt [62] also noted the spatial component of social capital in sports tourism events. Although proximity builds network ties and facilitates interactions [63] and may affect network success [52], few studies have recognized it when examining social capital in tourism studies. Most of the previous studies used nodal areas (i.e., specific communities or towns) as the study settings [18,19,25]. Thus, a straightforward connection between spatial attributes and social capital has not emerged [16,17] and the association between both concepts is yet to be examined.

3. Research Methods

This study was conducted in the Piedmont region of NC, home to nine of the state's 23 wine trails. The Piedmont region covers 5875 square miles in 12 counties with 646,333 households living in the region [64]. The average median household income in this region is \$41,873, with 17% of households living below poverty level and over 82% of the residents without a Bachelor's degree [64]. The Piedmont was historically reliant on its textile, tobacco and timber (furniture) industries, but saw a

downturn in all three industries in the past few decades. Since then, the region has placed great efforts in developing the wine industry [65] and has become the heart of NC wine country [66].

Considering their unique spatial-tourism features which serve to identify factors associated with communities' social capital, both Haw River and Surry County wine trails were included in the study. Both trails share similar spatial attributes with regard to the number of composing wineries ($n = 4$), length (Haw River = 43 miles; Surry County = 32 miles), and proximity to highway (Haw River = 0.08 miles; Surry County = 0.02 miles); however, they differ in terms of the comprehensiveness of the trail's tourism service offerings (Haw River—highly comprehensive; Surry County—moderately comprehensive) and trail spatial patterns (Haw River—wineries cluster in the center of the trail; Surry County—wineries evenly spread along the trail) [3]. Such comparison contributes to the difference in wine trail types based on their spatial and tourism characteristics (Haw River—superior; Surry County—moderate). Hence, including both trails aids the evaluation of the effects of the (a) comprehensiveness of tourism offerings and (b) trail spatial patterns on communities' level of social capital while holding other variables (e.g., trail accessibility and length) constant.

3.1. The Design of Survey Questionnaire

A survey questionnaire was designed to query residents' socio-demographic information, their relationship with the Piedmont region, and the community's level of social capital associated with local wineries along wine trails. Socio-demographic information garnered included gender, age, level of education, annual household income before taxes, number of years living in the region, and the frequency of visit to the Piedmont wine trails in the last three years ("1 = never"; "5 = frequently"). Residents were also queried on their perceived relationship between Piedmont wineries and local communities.

Informed by the literature [18,56], a modified scale was used to assess a community's level of social capital associated with wine trails. The modified scale comprised 18 items representing five dimensions of social capital: Trust (3 items; e.g., "I trust wineries to make decisions that protect community interests"), Information Sharing (4 items; e.g., "I can easily find information about local winery-related events"), Collective Action (4 items; e.g., "I will volunteer in local winery-related events if needed"), Bonding (3 items; e.g., "I talk to neighbors about visiting local wineries"), and Bridging (4 items; e.g., "I have acquaintance(s) who own or manage a local winery"). These items were measured in a five-point Likert-type scale (1 = strongly disagree; 5 = strongly agree).

3.2. Sampling and Data Collection

Altogether, 663 households (Haw River = 401; Surry County = 262) from communities within a 10-mile buffer of the two wine trails were surveyed using stratified random sampling. These households were selected to represent all 32 zip codes that had more than five percent of its area within the buffer of the trails, and to capture distance differences to wine trails (i.e., the sample of each wine trail was split and randomly selected using 5-mile as the threshold).

A drop-off/pick-up method, commonly used in small or compact geographic areas (especially in rural communities), was adopted to distribute surveys in this study to reduce non-coverage error and increase response rate [67]. The field researcher showed up at selected households and elaborated the study purposes. If residents agreed to participate, the researcher dropped off the surveys inside a bag, and asked the residents to hang the completed survey in the provided bag on the doorknob on the scheduled date (2–3 days after the drop-off) for pick-up. If no surveys were hung on the doorknob on the day for pick-up, the researcher left a stamped envelope for the households and asked them in a brief note to mail back the surveys once completed.

In total, 334 surveys (Haw River—164, 40.9% response rate; Surry County—155, 59.2% response rate) were collected, representing an overall 51.9% response rate. Haw River had a relatively lower response rate likely due to the lack of face-to-face interaction with selected households during the first week of survey drop-off; the method was modified thereafter to include two attempts for face-to-face

interaction prior to leaving the materials without interaction. After removing any partially completed surveys, 300 questionnaires were retained for statistical analysis.

3.3. Data Analysis

The analyses performed in this study include descriptive statistics, Cronbach's alphas, and multiple linear regressions ($p < 0.05$). Descriptive analysis was performed to delineate respondents' socio-economic profiles, their relationship with the Piedmont region and wine trails, and communities' social capital associated with local wineries along wine trails. Cronbach's reliability tests were used to examine the internal reliability of items within each dimension (Trust, Information Sharing, Collective Action, Bonding, Bridging) of social capital; the 0.33 corrected item score was used as threshold to retain an item within a dimension [68]. Retained items were averaged to create a composite score of each social capital dimension; an overall social capital mean score (of all items) was also calculated.

Multiple linear regressions were computed to test the effects of respondents' attributes and trail spatial attributes on communities' level of social capital associated with wine trails. Independent variables include residents' demographics (age, level of formal education, and pre-tax annual household income) and their relationship with the Piedmont region and wine trails (length of residence in the Piedmont region, visitation frequency to the Piedmont wine trails, perceived Piedmont wineries and communities' relationship). Two spatial attributes were also included as independent variables: distance from respondents' residence to closest winery (using ArcGIS software), and spatial-tourism characterization of the wine trail where Haw River represents a superior spatial-tourism wine trail (given the categorical nature of trail characterization, Haw River was set as default and represented by 1) and Surry County a moderate one (for the same aforementioned reason, set as otherwise) [3]. Dependent variables were the composite scores of each social capital dimension and all items aggregated.

4. Results

Most of the respondents were female (58.4%), between 36 and 65 years old (65.1%, $M = 52.3$), and with no college degree (53.0%; Table 1). Consistent with their education level, 48.6% had an annual household income below \$50,000 before tax. The majority of respondents were rooted in the Piedmont region, with an average of 38 years of residence in the region (Table 2). Out of all wine trails in the Piedmont region, respondents visited the two study wine trails the most (Surry County, 26%; Haw River, 23.2%), to which they also felt most connected (Surry County, 24.7%; Haw River, 20.8%). However, 40.6% did not feel any connection with the Piedmont wine trails. Almost half (44.9%) of respondents believed an overall good to excellent relationship existed between Piedmont wineries and local communities; still, 27.7% of respondents did not know how to evaluate such a relationship.

Table 1. Socio-demographic profile of responding residents.

Socio-Demographic Indicators	Number of Respondents	Percentage of Respondents
Gender ($n = 296$)		
Female	173	58.4%
Male	123	41.6%
Age ($n = 292$, $M = 52.3$)		
18–25 years old	19	6.5%
26–35 years old	27	9.3%
36–45 years old	54	18.5%
46–55 years old	61	20.9%
56–65 years old	75	25.7%
66–75 years old	41	14.0%
76 years or older	15	5.1%
Level of education ($n = 298$, $M = 2.6^1$)		
High school graduate or less	70	23.5%
Some college	88	29.5%

Table 1. Cont.

Socio-Demographic Indicators	Number of Respondents	Percentage of Respondents
Two-year college degree	56	18.8%
Four-year college degree	57	19.1%
Advanced degree	27	9.1%
Pre-tax household income ($n = 237, M = 2.8$ ²)		
\$25,000 or less	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%

¹ Measured on a Likert scale where “High school graduate or less” (1) to “Advanced degree” (5). ² Measured on a Likert scale where “\$25,000 or less” (1) to “\$150,000 or more” (5).

Table 2. Indicators of communities’ relationship with the Piedmont region and wine trails.

Attachment Indicators	Number of Respondents	Percentage of Respondents (Both Trails)
Length of residence in the Piedmont ($n = 221, M = 38.0, SD = 20.6$)		
10 years or less	28	12.7%
11–20 years	28	12.7%
21–30 years	33	14.9%
31–40 years	29	13.1%
41–50 years	34	15.4%
51 years or more	69	31.2%
Visit frequency (at least once) to the Piedmont wine trails ($n = 300$)		
Surry County	78	26.0%
Haw River	61	23.2% ¹
Yadkin River	47	15.7%
Lexington Loop	33	11.0%
Upper Yadkin	30	9.7%
Swan Creek	25	8.3%
Piedmont Heritage	23	7.7%
Scenic 421	20	6.7%
Midlands	10	3.3%
Wine trail most connected to ($n = 280$)		
Surry County	71	24.7%
Haw River	56	20.8%
Yadkin River	14	4.9%
Lexington Loop	8	2.8%
Piedmont Heritage	8	2.8%
Swan Creek	4	1.4%
Upper Yadkin	3	1.0%
Scenic 421	3	1.0%
Midlands	0	0.0%
None	113	40.6%
Perceived Piedmont wineries and community relationship ($n = 294, M = 3.5$ ² , $SD = 1.0$)		
Excellent	26	8.6%
Good	107	36.3%
Average	48	16.5%
Fair	22	7.3%
Poor	11	3.6%
I don’t know	80	27.7%

¹ Percentages sum to more than 100%, as respondents were able to select multiple categories. ² Measured on a Likert scale where “Poor” (1) to “Excellent” (5), “I don’t know” was not included in calculating the mean.

4.1. Social Capital toward Wine Trails

Each dimension of social capital had a high internal reliability (Trust, $\alpha = 0.827$; Information Sharing, $\alpha = 0.839$; Collective Action, $\alpha = 0.781$; Bonding, $\alpha = 0.860$; Bridging, $\alpha = 0.906$; Table 3), based on Cronbach’s tests. Overall, respondents noted an overall moderate level ($M = 3.00$) of social capital associated with Piedmont wineries. When examined by dimensions, Collective Action was most highly rated ($M = 3.18$), closely followed by Trust ($M = 3.07$) and Information Sharing ($M = 3.07$), while Bonding ($M = 2.77$) and Bridging ($M = 2.91$) were the least highly rated.

Table 3. The association of community's social capital with Piedmont wineries.

Items by Dimensions (<i>n</i> = 290)	Strongly Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Strongly Agree	Mean ¹
Trust ($\alpha = 0.827$)						3.07
I trust winery to make decisions that protect community interests	11.5	5.9	38.5	41.0	3.1	3.18
Local residents trust winery to make decisions that protect community interests	10.1	10.1	42.5	35.2	2.1	3.09
My community has a shared vision for local winery development	9.7	10.4	55.3	23.2	1.4	2.96
Information sharing ($\alpha = 0.839$)						3.07
I can easily find information of local winery-related events	6.6	7.6	30.0	51.0	4.8	3.40
I know where to find information of local winery-related events	7.3	7.6	32.5	48.4	4.2	3.35
My community has a forum to discuss winery-related concerns	9.8	16.1	63.2	10.2	0.7	2.76
My community has a forum to discuss winery-related opportunities	10.1	16.4	62.6	10.1	0.7	2.75
Collective action ($\alpha = 0.781$)						3.18
Local winery supports community need	6.2	4.5	44.6	40.2	4.5	3.32
People in my community participate in local winery-related events	8.0	8.0	41.3	38.9	3.8	3.23
I will volunteer in local winery-related events if needed	16.2	16.2	48.6	18.6	0.4	2.71
Local winery participates in community events	4.5	4.2	32.4	53.0	5.9	3.52
Bonding ($\alpha = 0.860$)						2.77
I attend private parties at local winery	14.5	12.8	50.2	20.4	2.1	2.83
I talk to my neighbors about visiting local winery	13.4	15.2	49.7	20.0	1.7	2.81
I hang out with friends at local winery	18.4	14.0	48.6	17.0	2.0	2.70
Bridging ($\alpha = 0.906$)						2.91
I have acquaintance own or manage local wine-related business	12.4	11.7	49.7	22.4	3.8	2.93
I attend events hosted by local wineries and other businesses	14.7	9.3	45.5	28.8	1.7	2.93
I have acquaintance who own or manage a local winery	14.1	11.4	50.3	20.7	3.5	2.88
I attend events co-hosted by several local winery	15.4	12.3	44.9	25.7	3.5	2.86
Overall Community's Social Capital						3.00

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

When examined by specific item statements, most respondents agreed that local wineries participated in community events (58.9%; $M = 3.52$; Collective Action dimension), and that they could easily find information of local winery-related events (55.8%; $M = 3.40$; Information Sharing dimension) and knew where to find information of local winery-related events (52.6%; $M = 3.35$; Information Sharing dimension). Conversely, a third of respondents would neither hang out with friends at local wineries (32.4%; $M = 2.70$; Bonding dimension), nor volunteer in local winery-related events if needed (32.4%; $M = 2.71$; Collective Action dimension).

4.2. Factors Associated with Community's Social Capital

Multiple linear regressions indicated that residents' socio-demographic characteristics, relationship with the Piedmont region and wine trails, and spatial attributes were significantly associated with the overall social capital ($R^2 = 0.250$, $p < 0.001$), and four of the social capital dimensions—Collective Action ($R^2 = 0.165$, $p = 0.026$), Information Sharing ($R^2 = 0.135$, $p = 0.001$), Bonding ($R^2 = 0.296$, $p < 0.001$), Bridging ($R^2 = 0.337$, $p < 0.001$; Table 4). Controlling for other variables, visitation frequency to Piedmont wine trails was positively associated with the overall social capital ($\beta = 0.326$, $p < 0.001$), and all social capital dimensions: Trust ($\beta = 0.071$, $p = 0.118$), Information Sharing ($\beta = 0.169$, $p = 0.025$), Collective Action ($\beta = 0.220$, $p = 0.004$), Bonding ($\beta = 0.369$, $p < 0.001$), and Bridging ($\beta = 0.420$, $p < 0.001$). None of the spatial attributes showed a significant association with social capital while controlling for other variables.

Table 4. The associations of residents' socio-demographic characteristics, relationship with Piedmont wineries, spatial attributes, and community's social capital.

Independent Variables	Social Capital (Standardized β and Significance)					
	Overall	Bonding	Bridging	Trust	Collective Action	Information Sharing
Age	−0.095	−0.126	−0.105	−0.064	−0.069	−0.058
Education level	−0.046	−0.065	−0.124	−0.025	−0.039	0.109
Annual household income	0.110	0.062	0.135	0.067	0.094	0.113
Length of residence in the Piedmont	0.116	0.097	0.124	0.076	0.125	0.096
Visit frequency to Piedmont wine trails	0.460 *	0.511 *	0.546 *	0.213 *	0.349 *	0.244 *
Relationship with Piedmont wineries	0.080	0.059	0.050	0.001	0.107	0.135
Residence distance to closest winery	0.046	0.037	−0.020	0.090	0.088	0.012
Spatial-tourism type ¹	0.025	0.071	0.040	0.065	−0.019	−0.091
Model statistics						
R	0.500	0.544	0.581	0.267	0.406	0.368
R ²	0.250	0.296	0.337	0.071	0.165	0.135
p-value	<0.001	<0.001	<0.001	0.118	<0.001	0.001

¹ Haw River is set as the default spatial-tourism type; * $p < 0.05$.

5. Discussion and Implications

Residents perceived an overall good relationship between the Piedmont wineries and local communities, which suggests that wineries are active in their communities by being present and involved in their surrounding communities. However, the relationship appears to be one-directional, as residents acknowledge the presence of wineries in community events, but do not perceive wineries as a place to hang out with friends. Given that a quarter of the respondents were unable to rate the winery–community relationship, there is still much room for increasing wineries' involvement in the communities. Residents perceived low levels of Bonding and Bridging, which suggests wineries should place future efforts in forging relationships with local communities to increase positive attitudes toward their businesses [11], and reaching out to other businesses and organizations outside the community to foster economic growth [69].

The overall moderate level of social capital associated with the Piedmont wine trails and its non-significant association with spatial attributes (i.e., residence distance to winery, trail spatial-tourism types) is likely related to the inception stage of wine tourism in the region and the resulted limited residential interests in wine related activities. Nonetheless, it is critical to build wine-related social

capital in the study region as communities with higher levels of social capital attain more desired socio-economic outcomes and are more likely to prosper [18,36,70]. Likewise, it is important that wineries increase the trust of their industry among their neighbors, as it can improve the communication network [33] that could in turn help with branding local wineries [17,35], and facilitate collective action that supports tourism development [20,22].

The positive association between residents' visitation frequency to local wineries and communities' wine-related social capital suggests the need for wineries and wine trails to increase their marketing efforts to capture local residents as visitors. Doing so should be a priority, since most residents had never visited the Piedmont wine trails. As results indicate, increased local visitation could enhance residents' perceptions of social capital. Furthermore, results show that residents' age was negatively associated with the overall and all dimensions of social capital. In this regard, emphasis should be placed on increasing overall social capital and bonding with senior neighbors, who represent an appealing market as they have fewer time or economic constraints that could keep them from visiting local wineries frequently [71]. The fact that most residents have never visited any Piedmont wine trail—despite the readily available winery related information—points wineries to invest most efforts in bonding with the communities. Potential strategies include collaborating with community leaders to host meetings and events, and providing various recreation opportunities and non-alcoholic grape beverages, so that residents internalize wineries as a leisure space.

Contrary to the existing literature, no significant association was found between the length of residence [18], income [59], education levels [28], and neither the overall perceived social capital nor the dimensions comprising it. These findings may result from the fact that the Piedmont wineries are still newcomers to their surrounding rural communities, where residents tend to be more conservative and take longer to embrace new members. Still, these results support the need to further investigate social capital associated with tourism development, especially in the context of niche tourism development.

This study contributes to the scholarship of social capital related to wine tourism by integrating their five main dimensions (Trust, Information Sharing, Collective Action, Bonding, and Bridging) into one scale. In doing so, this study extends findings where social capital associated with tourism development is examined as one dimension along other types of capitals [18] and complements studies using single social capital dimension [25]. High internal reliability obtained in the five dimensions of this modified scale suggests its suitability to further examine social capital associated with linear tourism route developments and especially for wine tourism.

Study contributions and the practical implications extrapolating to other contexts should be taken with caution. Even though the two selected wine trails are suitable for this study and comparable to the nine wine trails in the Piedmont region, they are not representative of wine trails in other contexts that may display different spatial-tourism characteristics (e.g., with greater market access in urban settings, at a more mature development stage) [3].

By exploring communities' social capital in the Piedmont region where wine tourism is at inception stage, this study serves as a baseline for future research in wine trails or other linear tourism settings. Future longitudinal studies could help monitor changes in the synergistic relationship between tourism and social capital along wine trails at different development stages as previously suggested [27]. In addition, results from this study are inconclusive with respect to the role of spatial attributes in building social capital. Therefore, future studies should explore the role of spatial attributes such as residents' distance to main attractions and specific spatial route configurations along wine trails in other types of linear tourism settings.

6. Conclusions

This study examined the level of perceived social capital in communities along wine trails and its association with residents' demographic characteristics, relationship with the Piedmont region and wine trails, and trails' spatial attributes. An overall moderate level of social capital was found to be associated with the Piedmont wine trails. Social capital was found to be positively associated with

residents' vitiation frequency. Altogether, these findings provide important practical implications. For example, to tap into the growing number of tourists seeking experiences along wine trails and to spread benefits within surrounding communities, wineries should increase their marketing efforts to attract local residents and to bond with their communities through events and other activities. This is especially applicable in areas where wine tourism is at the inception stage of development, similar to the study region.

This study also makes unique contributions to the general tourism scholarship by extending the existent knowledge of social capital to wine tourism and wine trails. In this regard, a major contribution is the development of a comprehensive scale of the five main domains of social capital. The extent of the study findings, as well as their implications point out directions for future research to explore social capital in other linear tourism route settings (e.g., cultural heritage trails), especially those at the early development stage.

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