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Bonding and Bridging Forms of Social Capital in Wildlife Tourism Microentrepreneurship: An Application of Social Network Analysis

Birendra KC ^{1,*} , Duarte B. Morais ^{2,3}, Erin Seekamp ² , Jordan W. Smith ⁴ 
and M. Nils Peterson ⁵

¹ Department of Hospitality and Tourism Management, University of North Texas, Denton, TX 76203, USA

² Department of Parks, Recreation and Tourism Management, NC State University, Raleigh, NC 27695, USA; dbmorais@ncsu.edu (D.B.M.); elseekam@ncsu.edu (E.S.)

³ Department of Geography, Environmental Management & Energy Studies, University of Johannesburg, Auckland Park, Johannesburg 2092, South Africa

⁴ Department of Environment and Society, Utah State University, Logan, UT 84322, USA; jordan.smith@usu.edu

⁵ Department of Forestry and Environmental Resources, NC State University, Raleigh, NC 27695, USA; mnpeters@ncsu.edu

* Correspondence: birendra.kc@unt.edu; Tel.: +1-940-565-4551

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Abstract: Tourism has been recognized as an important economic sector, requiring a high degree of involvement from the entrepreneurial sector to diversify tourism products and services to meet increasing demand. Tourism is often considered a tool for economic development and a strategy to improve the livelihoods of rural citizens. Specifically, nature-based tourism, such as wildlife tourism, is growing faster than tourism in general, providing a myriad of opportunities for small-scale entrepreneurial engagement. However, several obstacles exist for these small-scale tourism enterprises, such as a lack of social capital. This study examined a network of wildlife tourism microentrepreneurs for bonding and bridging forms of social capital using a social network analysis approach, where bonding and bridging social capital have their own interpretation. Thirty-seven in-person interviews were conducted with wildlife tourism microentrepreneurs from North Carolina's Pamlico Sound Region. The study revealed that microentrepreneurs interacted with each other in a bridging network structure. The ability to reciprocate with other members of the network was essential for business success. The results identified four key bridging ties connecting potential sub-groups in the network, connected to each other in a redundant fashion. We concluded that the formation of a bridging network structure was a function of entrepreneurial phenomena that may not promote a highly trusted, well-connected network. The findings and implications are further discussed in the paper.

Keywords: wildlife tourism; microentrepreneurship; social capital; bonding; bridging; social network analysis

1. Introduction

Tourism is an important economic sector, requiring a high degree of involvement from the entrepreneurial sector to diversify tourism products and services to meet increasing demand [1]. In general, the contribution of entrepreneurship to economic development has been documented both in developing and developed countries [2]. The development of small businesses in rural areas has been particularly recognized as a key strategy to improve rural livelihoods [3]. Entrepreneurship enables

local communities to use local resources as tourism products that provide socio-economic benefits to their communities [2]. Entrepreneurial engagement in small tourism businesses has the potential to contribute to social, economic, and environmental outcomes for local communities by offering sustainable solutions to job creation, provision of goods and services, and preservation of natural resources [3,4]. Tourism empowers local communities, where empowerment is a multidimensional concept that includes economic, social, political, and psychological empowerment [5–7]. To maximize and diversify the economic benefits from tourism, small-scale and nature-based tourism experiences should be promoted [1], with a focus on increased entrepreneurial involvement. Although tourism has been identified as a strategy for poverty reduction and economic development, with emphasis on microentrepreneurship [8–10], small and medium tourism enterprises face several obstacles [8,10,11], such as a lack of social capital [12–14].

Forms of nature-based tourism, such as wildlife tourism, are growing faster than tourism in general [15]. Wildlife tourism primarily consists of tourists' consumptive (e.g., fishing and hunting) and non-consumptive (e.g., wildlife watching) interaction with non-domesticated animals in natural environments [13,16,17]. Quantitative data on wildlife tourism at the global scale is unavailable, but wildlife-related activities are an important component of the tourism industry [13,17]. In the context of the U.S., there were 90.1 million people (16 years and older) enjoying wildlife-related activities in 2011, with an expenditure of approximately \$145 billion. In North Carolina alone, there were about 3.5 million people (16 years and older, including residents and non-residents) enjoying wildlife-related activities, with a contribution of approximately \$3.3 billion to the state's economy [18]. Wildlife tourism is often linked to poverty reduction in many rural areas [11], and it is also touted as a strategy to capture both economic benefits and conservation by instilling human empathy for wildlife and creating an interest in their conservation [19]. Wildlife tourism has the potential to support sustainable rural livelihoods because wildlife resources are often rich and available in rural areas [20], which fosters the development of rural enterprises [13,21], specifically through microentrepreneurship [22]. Wildlife tourism microentrepreneurship is the process of running a formal or informal standalone business entity related to recreational fishing, hunting, and/or wildlife viewing, while employing less than five full-time employees [13].

Emerging niche markets for wildlife tourism provide entrepreneurial opportunities for local populations residing in areas with rich wildlife resources, but these opportunities are not easily exploited, as entrepreneurship phenomenon itself is characterized by uncertainty and risk [12,14,23]. Establishing a business in rural areas involves particular difficulties above and beyond those encountered by large-scale entrepreneurs in non-peripheral regions, such as difficulties obtaining credit and access to other resources. Ramirez-Sanchez and Pinkerton [24] argued that social relationships are critical for wildlife tourism-dependent populations to adapt to resource fluctuations and uncertainties. The concept of social capital is the notion that establishing a good network enhances the ability of an individual to access and use the resources from network ties. Social networks are considered an important element in entrepreneurship [25] and are closely associated to the flow of information and ideas [14]. Social networks consist of tangible and intangible resources embedded in those networks; therefore, social capital can be defined as a combination of network structures and the benefits accrued from those network structures [26,27].

Agnitsch et al. [28] suggested that an important scholarly contribution to social capital is the extension of works by Bourdieu [29], Coleman [30,31], and Putnam [32–34]. Particularly important is the distinction between bonding and bridging forms of social capital, as articulated by Putnam [34] and widely recognized among researchers [28,35,36]. Both bonding and bridging forms have unique characteristics that influence the meaning of social capital and its outcome. Some studies [24,37] have adopted a quantitative approach to investigate bonding and bridging forms of social capital by evaluating the network structure. However, there is a lack of research examining these forms of social capital in the context of wildlife tourism microentrepreneurship, especially given the importance of social networks among wildlife tourism microentrepreneurs in a geographically dispersed rural

setting. Wildlife tourism microentrepreneurship requires extensive knowledge of local wildlife resources, but often resource fluctuations can lead to greater vulnerability [24]. Particularly in wildlife tourism microentrepreneurship, the ability to locate wildlife resources significantly enhances business outcomes for microentrepreneurs, by ensuring the provision of enriching tourism experiences for their clients, and plays a major role in increasing customer return rates [38]. Therefore, running a successful wildlife tourism business requires the creation of social networks among wildlife tourism microentrepreneurs. This is an adaptive process to mitigate the potential risks and uncertainties involved with the business and includes the sharing of information and other resources. To better understand wildlife tourism microentrepreneurial phenomena, this study examines the bonding and bridging social capital among wildlife tourism microentrepreneurs by analyzing network structure. We address two guiding research questions:

- (1) To what extent are bonding and bridging network structures formed in a wildlife tourism microentrepreneurs' business network?
- (2) How is bonding and bridging social capital developed among wildlife tourism microentrepreneurs?

2. Theoretical Framework

2.1. Bonding and Bridging Social Capital

Extensive social capital is considered to positively impact entrepreneurial growth and success [12,14,27]. Social capital is the idea that well-connected entrepreneurs are better able to mobilize resources to pursue their desired outcomes [28]. Social networks are important for connecting with other key members, however, trust and reciprocity play critical roles in the access and exchange of information among network members [13,24,39]. Even though social capital, in general, is positively perceived, it has some pros and cons. The concept of social capital developed as a positive resource and was viewed as a "more is better" approach by early researchers. However, the aspect of "more is better" is often considered a downside of social capital [28]. Many researchers support the argument that negative effects occur due to excessive embeddedness in a social network [28,40,41], hence resulting in decreasing returns of social capital. Various negative effects associated with close-knit trusting groups challenge the concept of the "more is better" approach. Specifically, such conditions are reported to lead to four negative consequences [28,41]: (1) the exclusion of outsiders, (2) only sharing benefits with the limited group members, (3) restrictions on individual freedom, where group participation demands conformity, and (4) downward leveling norms, where group solidarity is established by a common experience of adversity and opposition to mainstream society that allows members with similar opinions to stick with the group and forces ambitious members to leave the group.

Bonding social capital is inherently inward-looking by reinforcing exclusive identities and homogeneous group characteristics, such as those associated with homogeneous resources. In contrast, bridging social capital is inherently outward-looking, as it enables connections to other people or groups who are different from each other in some way. Thus, bridging social capital fosters heterogeneous connections and diversity that allows access to new ideas and information [28,34,42–44]. With bonding ties, people view all the members within the group as similar, possessing common values and norms, whereas with bridging ties, people have horizontal ties with dissimilar people or groups [36,44].

On the other hand, Burt [45–47] introduced the concepts of network closure and structural holes, which complement our theoretical understanding of bonding and bridging social capital. Network closure is a closed and densely connected network that controls access to information, while facilitating agreements that reduce the risk of people in the network trusting one another [30,31,46]. In contrast, structural holes are the gaps formed between non-redundant groups [45,48]. Both network closure and structural holes are important concepts for analyzing within- and between-group relationships and dynamics. High network closure is associated with strong bonding social capital; whereas, more ties spanning across structural holes indicate higher bridging social capital.

2.2. Network Structure Typology

This study used the network configurations (Figure 1) developed by Crowe [37] to examine bonding and bridging social capital. The four different network configurations identified by Crowe [37] are complete, factional, coalitional, and bridging. Complete network structures consist of tightly connected nodes in the network or, in other words, networks with a high density. Factional network structures usually have many densely connected sub-groups that are disconnected from each other. Coalitional network structures have densely connected sub-groups that are loosely connected with each other (e.g., with a high number of cut-points). Bridging network structures are loosely connected networks with a lower number of cut-points (Figure 1).

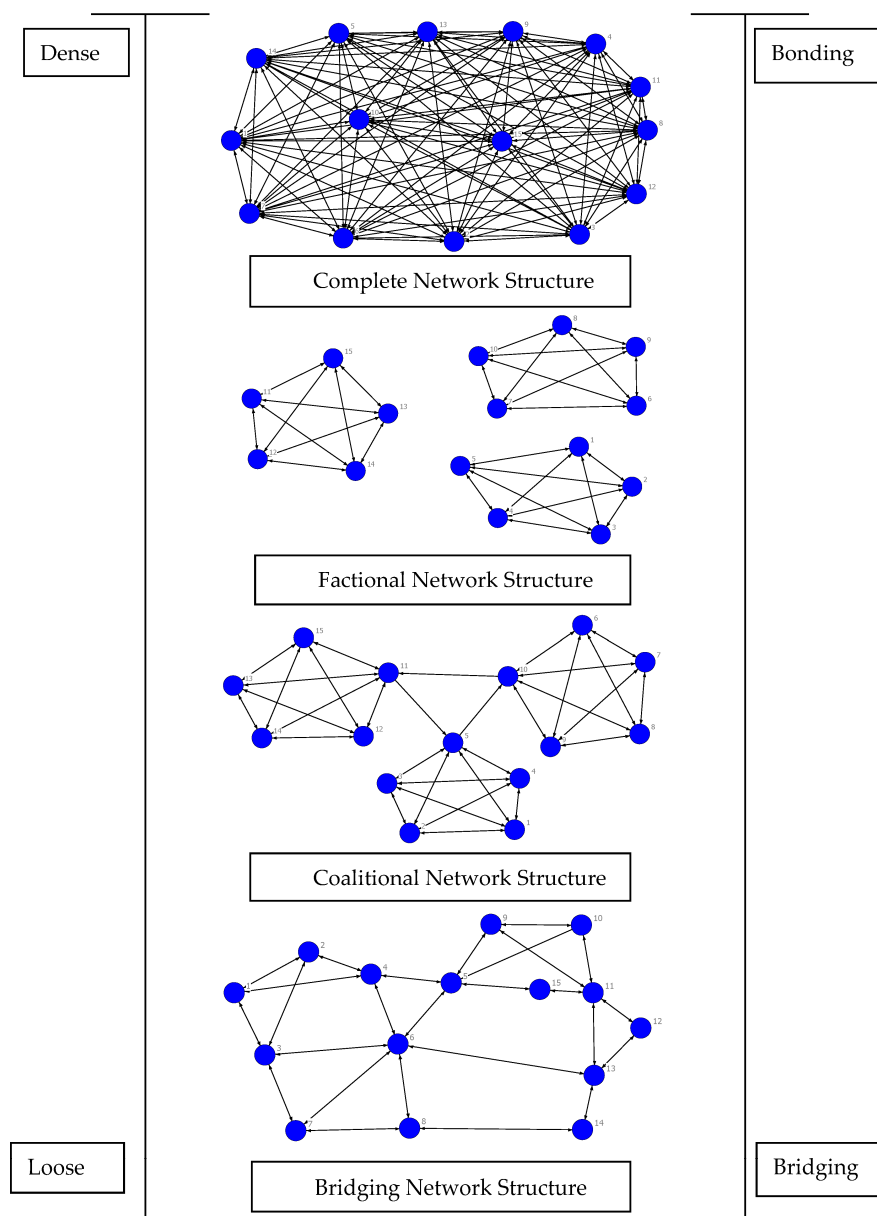


Figure 1. Network structure typology adapted from Crowe [37].

A k-core is a maximal subgraph in which each point is adjacent to at least k other points, where all points within the k-core have a degree greater than or equal to k [37,49]. A simple component of a 1k-core has all its points connected to one another, therefore having a degree of at least one. To identify

2k-core, all the points with one degree are ignored, and the connected points with a degree of at least two are retained [49]. The process is repeated to identify 3k-core and so on. Density is the number of immediate ties in a network, expressed as a proportion of the maximum possible number of ties [49]. Density depends on the size of the network. A smaller network tends to have a higher density than a larger network because the possibility to connect with all individuals in the network decreases as the network size increases. This network size limitation to measuring density can be overcome by the measurement of k-core [37]. The cut-point in a network refers to a collection of specific nodes, where removal would break the number of components into two or more sub-groups [49]. Cut-points connect several sub-groups in a larger network; therefore, cut-point analysis can be used as a measurement to explain bridging social capital.

3. Materials and Methods

3.1. Study Area

Figure 2 shows the geographical location of the study area [50,51]. This study was completed in North Carolina's (NC) Pamlico Sound Region, which serves as a hub for wildlife recreationists and a resource for the local population to engage in wildlife tourism microentrepreneurship. North Carolina promotes the localization of benefits from the tourism industry to improve rural livelihoods. For example, the North Carolina Jobs Plan [52] prioritizes the promotion of small-scale businesses and entrepreneurship marketing natural resources and outdoor activities, to favor rural populations. Some of the coastal counties in the Pamlico Sound Region are economically distressed. For example, the NC Department of Commerce [53] annually ranks the state's 100 counties into three different tier designations. The ranks range from one to three, with one being more economically distressed compared to two and three. The tier designations are based on economic well-being, which includes the average unemployment rate, median household income, percentage growth in population, and adjusted property tax base per capita. Most counties around the Sound Region tend to fall under tiers one and two. Similarly, The Rural Center [54] categorizes all the coastal counties surrounding the Pamlico Sound as rural, based on an average population density of 100 per square kilometer or less. Tourism is promoted as one of the primary economic development activities in the region. The coastal counties, such as Pamlico County, around the Pamlico Sound are less developed for commercial purposes compared to other coastal destinations in the state, such as the Outer Banks area. The availability of diverse nature-based recreational activities in the region, much of which has been unaffected by commercial development, has preserved a rustic environment that appeals to nature lovers. Therefore, the Pamlico Sound Region has the potential to retain and develop nature-based wildlife tourism, while fostering economic growth in the region.

Pamlico Sound is the largest lagoon along the east coast of the U.S. The shallow water levels of the Sound provide excellent fishing opportunities for small-sized boats, which are easy to navigate. The Sound is less affected by weather compared to offshore fishing areas, as a barrier of islands surrounds it. Fishing in the Sound is more cost-effective than fishing offshore because less travel is required, thereby reducing the cost of fuel required. The Pamlico Sound and surrounding regions provide many forms of consumptive and non-consumptive wildlife tourism, including guided trips for fishing, waterfowl hunting, and bear and deer hunting. Often wildlife watching is integrated into fishing and hunting trips. However, some wildlife tourism businesses have only been established for eco-tours focusing on dolphin watching, bird watching, and wildlife photography. These tourism services are offered throughout the year. Wildlife tourism activities focusing on inshore, nearshore, and offshore areas are equally popular, and often overlap with the activities in the Sound Region.

Participants in this study were selected based on their involvement in small-scale wildlife tourism businesses, primarily from the Pamlico Sound Region, although overlap occurred for inshore, nearshore, offshore, and surrounding river systems.

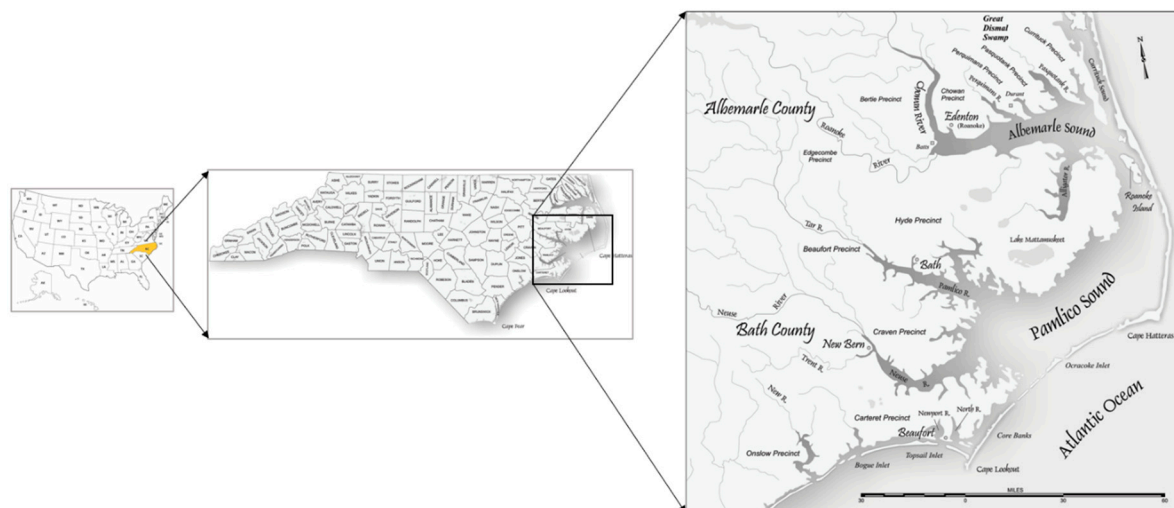


Figure 2. Map of the study area [50,51].

3.2. Data Collection

A preliminary assessment of the project was conducted from May to August 2014, prior to collecting data, through multiple field trips to examine the extent of wildlife tourism microentrepreneurship in the region. Wildlife tourism businesses were operating with different levels of visibility, as some businesses had repeat customers, with a large segment of their customers being marketed through word-of-mouth advertising. Therefore, several informal meetings were conducted with cooperative extension agents, residents working at the museum and wildlife refuges, and local bait and tackle shop owners. These meetings, during the preliminary assessment of the project, helped to create a list of contacts to begin data collection. Data were collected from November 2014 to February 2015 through in-person structured interviews with microentrepreneurs, using the list of contacts generated during the preliminary assessment of the project. Later, a referral process was used to exhaust wildlife tourism microentrepreneurs in the study region and create an entire network. Each participant was asked to list network ties supportive of their business, and particularly, those that were similar businesses in the study region. Since this study was specifically looking at entrepreneurial aspects, measurement of business support networks was deemed important, rather than just investigating networks based on acquaintances. Demographic data were collected regarding job status, income, length of business establishment, communication frequency, gender, and education. Thirty-seven microentrepreneurs were interviewed that were involved in guiding trips for fishing, hunting, and eco-tours, as well as the owners of bait and tackle shops and outfitters. A social network consists of quantitative (structure) and qualitative (processes) aspects [55]; therefore, supporting qualitative data were collected to understand the processes behind the formation of the network structure. Descriptive field notes were recorded during the interviews to understand the microentrepreneurial process in the context of wildlife tourism. The interviews were audio recorded, if agreed upon by the participant, to support the descriptive field notes.

3.3. Data Analysis

Identification of network properties, including k-core and cut-point, and visualization of the network structure, were analyzed using the Netdraw program in UCINET, a social network analysis software distributed by Borgatti et al. [56]. Each study participant was assigned an identification number from 1 through 37 (e.g., EID1–EID37) to maintain confidentiality. The quantitative measures on k-core and cut-point, along with the network structure typology developed by Crowe [37], were used to assess the bonding and bridging forms of social capital. The majority, 28 microentrepreneurs, were included in the interpretation of bonding and bridging social capital, as the remaining 9 isolated

microentrepreneurs did not report receiving any support from other network ties [24]. Descriptive field notes, recorded during the interviews, were used to explain the quantitative results, including k-core and cut-point. The audio recordings of the interviews were not transcribed verbatim, but were transcribed selectively to support the descriptive field notes required for a richer interpretation of the findings.

4. Results

4.1. Demographic Profile

The majority (78%) of the microentrepreneurs were full-time as opposed to part-time (22%) microentrepreneurs. Most reported affiliation with more than one form of wildlife tourism (Table 1). The length of business establishment ranged from 6 months to 36 years, with an average of 13 years. Most of the participants were older, with an average age of 50 years, ranging from 27 to 75 years old. Only one participant was female. Participants were at least high school graduates, and the income category of \$50,000–\$74,999 was dominant (Table 1). Also, the proportion of income coming from wildlife tourism ranged from 5 to 100%, with an average of 55%.

Table 1. Respondents' sociodemographic information.

Sociodemographic Indicators	Percentage
<i>Total participants (N = 37)</i>	
Full-time	78
Part-time	22
<i>Wildlife-related business involvement</i>	
Recreational fishing only	22
Wildlife viewing only	5
Recreational fishing and hunting	5
Recreational fishing and wildlife viewing	35
Recreational fishing, hunting, and wildlife viewing	32
<i>Household income before taxes (USD)</i>	
\$15,000–\$24,999	7
\$25,000–\$34,999	7
\$35,000–\$49,999	23
\$50,000–\$74,999	33
\$75,000–\$99,999	17
\$100,000–\$149,999	13
<i>Education</i>	
High school graduate	8
Some college, no degree	33
Associate's degree	17
Bachelor's degree	28
Graduate or professional degree	14

4.2. Wildlife Tourism Microentrepreneurial Network

The support exchanged among microentrepreneurs included marketing and advertising, which also involved customer exchange or referral, such as the swapping of customers during overflow. Similarly, information sharing was another form of support. For example, microentrepreneurs reported sharing information about the location of fish or waterfowl, the direction of waterfowl movement, and the types of bait used in catching fish. Lastly, product support, in terms of free equipment and product discounts, were considered important. Local bait and tackle shops (i.e., EID17, EID20, EID22, EID24, EID33, and EID35) were reported as playing a significant role in product support and information sharing and marketing. Reciprocal relationships among microentrepreneurs were mutual, regardless of their affiliation with businesses (e.g., guides or tackle shop owners). Only 28 microentrepreneurs

were connected to each other in the network, meaning they reported receiving support from each other. This is not to say the nine isolated microentrepreneurs completely lacked any support network; instead, they reported receiving business support from family, friends, and business ties, but from outside the local business network. This study only examined the network of microentrepreneurs who reported they received some form of support from the local business network, because this provides support in terms of in-situ details, such as information related to the movement of waterfowl, the location of the fish, or even customer exchange. This type of support may not be possible from support networks outside the local business network.

Support regarding marketing, advertising, and information sharing, was likely to go hand in hand. Regarding communication frequency, most participants reported communicating weekly, followed by monthly, daily, and then quarterly. However, communication frequency was reported to fluctuate based on seasonality, being more frequent during hunting and fishing seasons.

4.3. Assessment of the Network Structure

The largest k-core in the network was 3 (i.e., $k = 3$), which included 15 microentrepreneurs (Table 2 and Figure 3). This means that 15 microentrepreneurs were connected to at least three other microentrepreneurs. The proportion of microentrepreneurs in 3k-core was more than 50%. However, the largest k-core itself was not sufficiently large to be considered a well-connected network, because it was possible for everyone to connect with 27 other microentrepreneurs, which would represent a complete network (Figure 1). This study only examined the business support network, which tends to be more restrictive because network ties are identified only if members receive some form of support. Therefore, the largest k-core (i.e., 3k-core), and its proportion relative to the entire network, was used to assess the level of bonding.

The number of cut-points (i.e., bridging ties) was identified as 4 (Table 2 and Figure 4). Considering the business network had 28 points, the proportion of cut-points to total points was 0.14. Looking at the dense–loose continuum (Figure 1), the network structure was neither complete nor factional, as microentrepreneurs were loosely connected to each other without any fragmentation. A coalitional network structure is characterized by a relatively high number of cut-points that connect dense cohesive sub-groups in non-redundant ways, meaning that removing cut-points readily fragments the network. Four cut-points connected the sub-groups that would have otherwise been fragmented (Figure 4); however, the observed sub-groups in the network were sparse and connected to each other by cut-points in redundant ways (Figure 5). In this case, sub-groups represented a fragmented network after the removal of cut-points. Based on the assessment of k-core and cut-points, the observed network structure fits the lower end of the dense–loose continuum (Figure 1), indicating that its dominant characteristics are that of a bridging network structure, promoting bridging social capital.

Table 2. Characteristics of the network structure.

Description	Wildlife Tourism Business Network
Total number of wildlife tourism microentrepreneurs	37
Largest component	
Number of wildlife tourism microentrepreneurs	28
Isolated wildlife tourism microentrepreneurs	9
Indicators for network closure	
Largest k-core	3
Number of wildlife tourism microentrepreneurs in largest k-core	15
Proportion of wildlife tourism microentrepreneurs in 3k-core	0.54
Indicators for structural holes	
Number of cut-points	4
Proportion of cut-points to total points	0.14
Estimated network configuration	Bridging

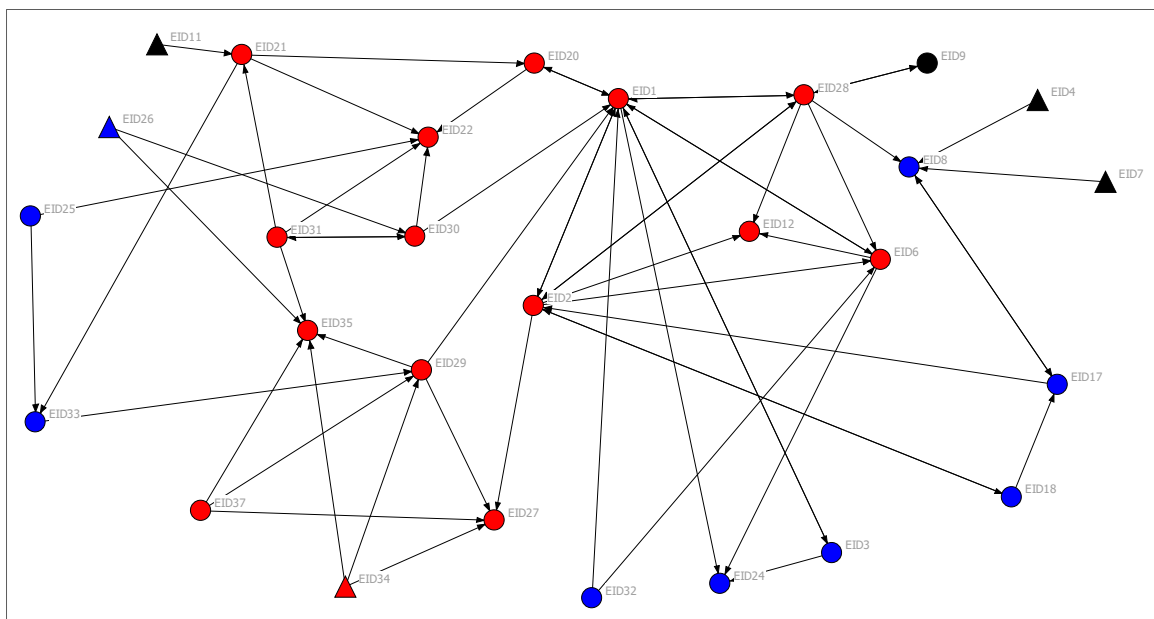


Figure 3. Identified k-core in the wildlife tourism microentrepreneurial network. The color of the node indicates its affiliation to k-core, where red is 3k-core, blue is 2k-core, and black is 1k-core. Note: a circular node indicates a full-time, and a triangle node indicates a part-time microentrepreneur.

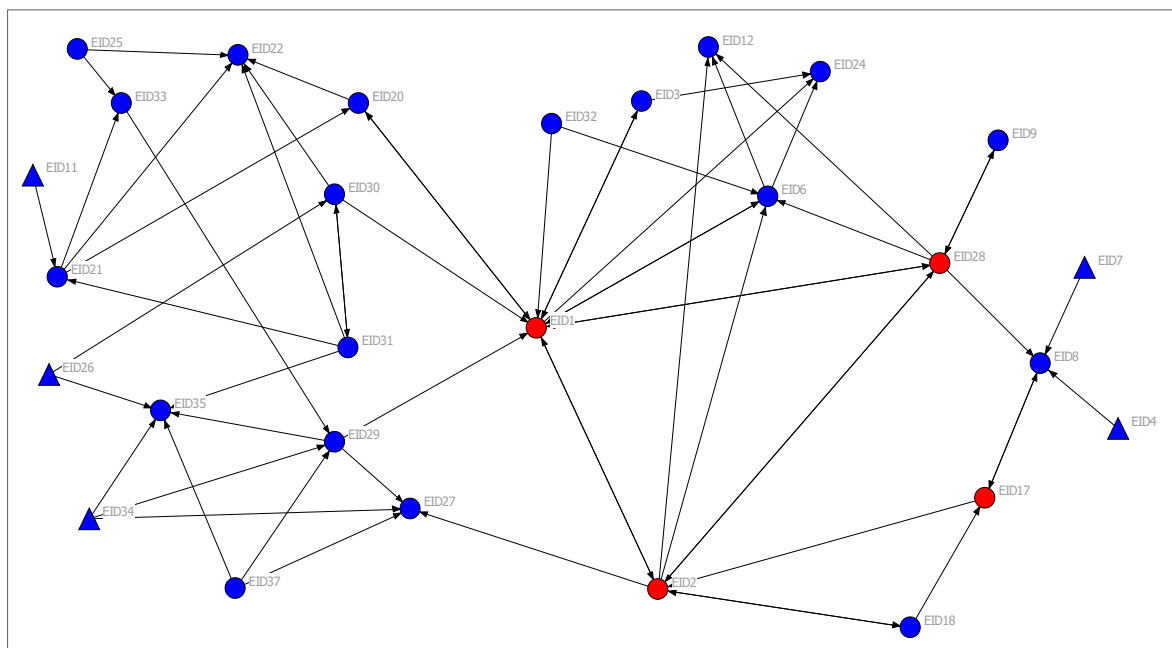


Figure 4. Identified cut-points in the wildlife tourism microentrepreneurial network. Nodes in red are cut-points. Note: a circular node indicates full-time, and a triangle node indicates a part-time microentrepreneur.

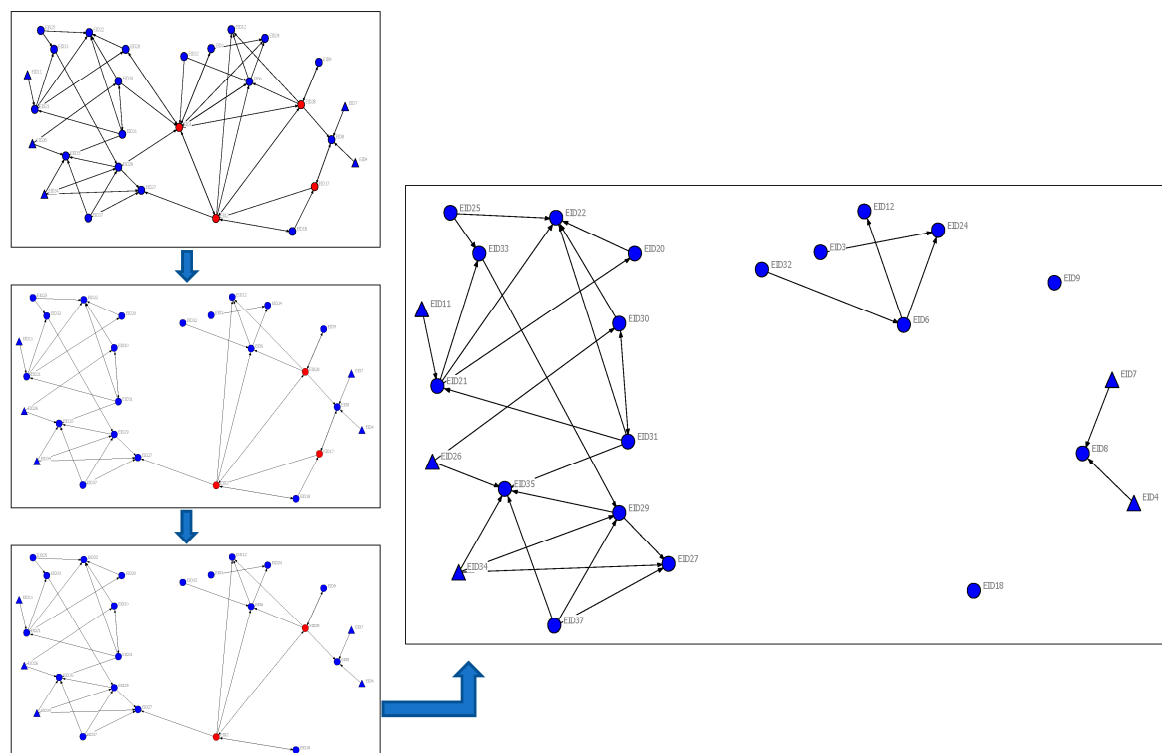


Figure 5. Fragmentation of the wildlife tourism microentrepreneurial network after removal of cut-points, showing the redundant connections.

4.4. Entrepreneurial Functionality in Wildlife Tourism

As we aimed to evaluate the support network, the network structure was defined by the microentrepreneurs' ability to reach out for support to create social relationships to optimize their business outcomes. Reciprocal relationships among microentrepreneurs enabled the formation of 3k-core, which is a measurement of bonding social capital. In this case, 15 microentrepreneurs (red nodes) were classified as 3k-core, whereas the remaining 9 microentrepreneurs (blue nodes) were classified as 2k-core, and 4 microentrepreneurs (black nodes) were 1k-core (Figure 3). EID1, EID2, EID17, and EID28 are cut-points that foster connectivity in the network because their removal leads to network fragmentation. However, simply removing one of the cut-points (i.e., bridging ties) does not completely fragment the network. Therefore, these potential sub-groups are connected in a redundant fashion (Figure 5). These cut-points represent fishing and hunting guides, as well as the owner of a bait and tackle shop (i.e., EID17). Other peers often consider these cut-points as active members of the network.

Wildlife tourism microentrepreneurs indicated the importance of networking with peers to obtain information related to the location of fish or waterfowl, the bait used to catch fish, the type of fish caught, and information related to the direction of waterfowl movement. Especially for fishing and hunting guides, obtaining such information was critical for a successful day with customers. Trust was noted as an important factor for engaging in reciprocal behaviors, as information sharing and the culture of customer exchange required common understanding. These mutual relationships for information exchange and customer referral were found among guides, as well as with bait and tackle shops. Support in the form of information sharing and marketing, which also includes customer referral or exchange, was expressed by fostering reciprocal relationships among microentrepreneurs, and resulted in the formation of 3k-core. One microentrepreneur, the bait and tackle shop owner, explained reciprocal relationships with peers as,

The biggest thing is, I give them a lot of information and offer them what they want, and we give them discounts for what they do for a living. It is kind of like you scratch my back, and I scratch yours. They get a discount when they shop here, they tell me things that are working, in the hope that I do not tell all the secrets about what they are doing. I stock the stuff that they need, and in return, they try to funnel businesses my way. Charter boat guys [fishing guides] are kind of like our base that is steady and constant, and everything is built from there. The recreational fishers see where these charter boat guys shop, and that is with me. I rely on them very heavily. (EID20)

The ability to network and communicate with other guides was considered to be the most influential factor for business success, as networking allowed microentrepreneurs to access different ideas, information, and resources, by establishing relationships with new network ties. This phenomenon further promoted the formation of a bridging network structure. For instance, one microentrepreneur stated the importance of networking as,

Guys that are real successful (referring to EID8 and EID2), is because they are able to network, I have seen captains and guides that do not do this and do not network. They keep it all to themselves. They do not share information, and they are not successful in a business sense because they still get clients, but they are not successful at what they are going for . . . they do not catch a lot of fish. Networking really makes you look better to your client when you catch a lot of fish. (EID4)

EID4 further added,

Everybody has a bad day; you cannot always accomplish what you want to: catch fish and kill ducks. One thing can change all that and can make your client a lot happier when they see you working, as opposed to just going out there and saying, “we are fishing but not catching anything”. But, if you make a phone call (to a guide) who is catching a lot of fish a mile from me and you get to him, and you catch a fish for your client, it makes a big difference in terms of how successful your client thinks you are. They want to come back because they know you work hard, you still do not catch every day, nobody does, but they see you work hard and you are better off.

EID4 explained their plan to change their part-time job into full-time work. Obviously, individual effort contributes to establishing a business, but their decision to change job status was possibly influenced by other successful microentrepreneurs, like EID8 and EID2. In this case, EID8 and EID2 could be considered influential members of the network. Bridging ties were not just connecting the sub-groups here, but were also considered successful microentrepreneurs. Their behaviors and opinions were critical for other members, as they tried to emulate the successful microentrepreneurs. In that respect, one microentrepreneur expressed his opinion about EID1 as,

When he first started [guiding business for recreational fishing], I thought this dude is crazy and not going to make any money because nobody was doing that. We were all into commercial fishing. But it really took off, I probably admire EID1 more than anybody in my life, more than my mother and father. EID1 has a very successful business. I am his right-hand man. (EID3)

Moreover, microentrepreneurs reported investing a significant amount of hard work in the business. The level of involvement and the extent of network ties among microentrepreneurs were likely to be driven by their livelihood dependency on wildlife tourism business income. For instance, some microentrepreneurs were full-time, whereas others were part-time. The level of commitment and work of the full-time microentrepreneurs appeared to be higher than the part-time microentrepreneurs. Even among full-time microentrepreneurs, some had alternative sources of income, such as a retirement

plan from a previous job. However, for other microentrepreneurs, it was the principle means of their livelihood. Therefore, networking behavior was likely to be influenced by job status and the dependency on the wildlife business for income. Given this context, one fishing guide stated,

I am almost 63. To get up at 3:30 a.m. in the morning, fish all day. That is not too bad, but when you get back at night, you have to clean up. That's what people do not realize, what goes on behind the scene. You have to go clean the gear, clean your boat; you have to fix anything you broke that day, and get ready to wake up at 3:30 a.m. That is the killer. About the 4th or 5th day like that, I am dragging. For me, it is perfect to have one trip every other day. That gives this old man a little time to rest. A lot of guides do not have that luxury because they do it for their sole living. Because I am retired, I have that backup. I know where my next sandwich is coming from. It is not like I have to do this. (EID28)

Often microentrepreneurs mentioned repeat customers as an important factor in business success, where repeat customers accounted for up to 80% of the total business. Developing an extensive network was important for two reasons: firstly, to obtain information regarding business activities to ensure a successful trip with clients, and secondly, microentrepreneurs mentioned receiving multiple requests for fishing, hunting, and eco-tours for a particular day. Having a trusted network was critical for exchanging these clients. However, relationships with these trusted peers were developed on an individual level. Therefore, the network structure did not exhibit the group cohesion that is evident in a well-connected network.

5. Discussion

Results showed that wildlife tourism microentrepreneurship fostered the formation of a bridging network structure that accumulated bridging social capital. Crowe [37] suggested that the formation of a complete network is rare, as it is unlikely that each microentrepreneur would connect with all the other network members. Allcott et al. [57] argued that network closure can be expected in small communities. Network closure was constrained by the rigidity of the study methods, as we examined a network of wildlife tourism microentrepreneurs strictly in terms of business support and not for acquaintances. However, examination of the support network among these microentrepreneurs was considered more realistic, as they rely on their network ties for business support, and acquaintances do not necessarily promote business success.

Entrepreneurship, by nature, aims to increase personal freedom or independence [58]. Therefore, wildlife tourism microentrepreneurs are less interested in confining themselves within a certain group to promote group cohesion. They have complete freedom to choose their business peers, regardless of their affiliation with any group, if they find trusted peers with whom to share ideas and information. Since an entrepreneurial phenomenon is driven by an individual approach [12], the dominance of the bridging network structure and the lack of formation of cohesive sub-groups, is justifiable. This does not imply that microentrepreneurial networks always lack bonding social capital, but suggests that bonding social capital is less dominant and networks are more loosely connected. In the literature, strong bonding is perceived as a well-connected (i.e., complete) network, which further complicates its interpretation. Bridging social capital, in this case, signifies that the network structure is loosely connected and tends to fragment if bridging ties are removed. The individualism inherent to entrepreneurship is a strong factor contributing to this result. Therefore, even though every microentrepreneur maintains their own individual bonded network to share ideas or exchange resources, group cohesion is not necessarily fostered, as individual networks among microentrepreneurs are established to facilitate their own business needs.

Cut-points, such as EID1, EID2, EID17, and EID28, are bridging ties preventing social fragmentation and generating non-redundant information [24]. Often these microentrepreneurs extensively seek opportunities with different network ties without limiting themselves to any particular sub-group. Entrepreneurship is an opportunity-seeking behavior [59]. Some wildlife tourism

microentrepreneurs search for homogeneous resources within a group of loose bonds (i.e., other than the cut-points), whereas few of them (i.e., the cut-points) look for heterogeneous resources across structural holes [46,47]. Therefore, these microentrepreneurs can be categorized into two types. The first type is microentrepreneurs connected with similar individuals, who are considered inherently inward-looking and are good at “getting by”. The second type is outward-looking microentrepreneurs (e.g., EID1 and EID2), who prefer to connect with heterogeneous individuals to seek new resources and ideas, usually needed to “get ahead” [28,34,37,42,60]. A local bait and tackle shop owner (EID17) served as an important bridging tie, which suggests their importance in preventing social fragmentation. There was a tendency, among these microentrepreneurs, to advertise and market their business services in conjunction with bait and tackle shops, such as by selling live bait, promoting their business by keeping business cards in local bait and tackle shops, and funneling customers to each other’s businesses.

Social capital is viewed as a mechanism through which other forms of capital are used more efficiently [28,61]. For example, wildlife tourism microentrepreneurs with innovative ideas and some resources can collaborate with others who have access to markets or have a deeper understanding of the local wildlife resources. These collaborative efforts can be effective and mutually beneficial. Outward-looking individuals (i.e., bridging ties) can be more efficient in accessing these resources and make better use of other forms of social capital, such as financial or human resources. Often, they are more knowledgeable and resourceful because they are exposed to alternative ways of thinking [47]. They can positively influence business outcomes, with greater exposure to resources and opportunities. Multiple direct connections with others can be an additional advantage for these bridging ties (e.g., EID1 and EID2). EID1 and EID2 are considered popular and independent as they are directly connected to many members of the network, and they do not completely rely on other members to exchange resources [13]. Due to their multiple direct connections with other microentrepreneurs, communication barriers do not exist for them. However, these bridging ties span across structural holes to generate non-redundant information [24,37], and are able to monopolize the information and resources received from different sub-groups [46]. Based on the literature, strong bonding that favors the formation of close-knit trusting groups, also produces a negative perception of ambitious members of the group (i.e., bridging ties) when they do not agree with the group’s decision [28,41]. However, in this case, bridging ties were perceived positively by connected peers, asserting the dominance of bridging social capital and the lack of negative consequences that can arise from strong bonding.

Agnitsch et al. [28] stated that the optimal effects of social capital are found in the presence of both bonding and bridging, and that a network with bonding and bridging social capital is more capable of building group resilience [24,62]. McGehee et al. [63] also suggested that the balance between bonding and bridging social capital is vital to the success of rural tourism development. In this study, development of 3k-core, 2k-core, and 1k-core, within the network of 28 microentrepreneurs, indicates the presence of bonding, but the bonding was loose. The network structure primarily fostered bridging social capital through the formation of a bridging network structure, where microentrepreneurs were likely to have individual trusted networks without promoting group cohesion. Therefore, a dominant bridging network structure can promote business success among wildlife tourism microentrepreneurs by promoting an individual network of trusted peers, while mitigating negative consequences that can be expected from strong bonding.

6. Conclusions

This study used a network approach to examine the bonding and bridging forms of social capital in wildlife tourism microentrepreneurship. The findings suggest that the formation of a bridging network structure was the result of entrepreneurial phenomena governed by wildlife tourism microentrepreneurs, where entrepreneurial characteristics influenced the network formation. Consequently, the network did not include close-knit trusting groups. Instead, microentrepreneurs possessed individual trusted networks. The formation of a bridging network structure with loose bonding suggests a willingness to cooperate amongst wildlife tourism microentrepreneurs, to enhance

entrepreneurial outcomes, but with the flexibility of connecting to individual trusted peers. Identified cut-points in the network were in a position to monopolize resources accessed from other members of the network and are likely to be negatively perceived for not confining themselves within a particular group (i.e., characteristics of strong bonding). However, these people were considered popular, benevolent, and influential. Therefore, besides quantitative k-core and cut-point measures, a visual assessment of the network structure, in relation to the network structure typology and other network characteristics, such as the perceived role of cut-points in the network explained through qualitative assessment, confirmed the dominant bridging structure with the presence of loose bonding.

The networks and social capital that function in one context are different to those that function in another context [24]. Therefore, the findings from this study are not generalizable. However, the identified network structure, as well as the extent of the bonding and bridging forms of social capital, reveals the functionality of wildlife tourism microentrepreneurship in a rural setting, such as North Carolina's Pamlico Sound Region. The results enhance our understanding of the operation of locally-based wildlife tourism microenterprises at tourism destinations. Nevertheless, this study can be replicated elsewhere to critically analyze the network structure, as well as to assess bonding and bridging forms of social capital in a different population. However, this study shows that wildlife tourism microentrepreneurs develop individual trusted networks to optimize business outcome while trying to capture this potential niche market, suggesting that wildlife tourism microenterprises are a promising option for promoting sustainable rural livelihoods. Understanding this form of tourism microentrepreneurship, or similar forms of microentrepreneurship such as agritourism, will allow a better understanding of their functionality in multiple settings. Since rural tourism microenterprises increase self-reliance and the empowerment of rural livelihoods, empirical research on various forms of tourism microentrepreneurship can significantly contribute to this under-researched area.

Understanding networking behavior among wildlife tourism microentrepreneurs can inform tourism agencies and extension professionals to devise appropriate strategies to foster wildlife tourism microentrepreneurship in the region. Further, determining how microentrepreneurs connect with external agencies besides local wildlife tourism microentrepreneurs, such as the chamber of commerce or other destination marketing organizations, would help us better understand their networking abilities, or willingness to develop new network ties with those agencies. Information and resources obtained from external agencies can be different from those obtained from local microentrepreneurs. Therefore, microentrepreneur networks can be explored beyond the local business network. Developing different types of network ties is important to positively influence business outcomes, especially where external agencies can function as a platform to connect geographically diverse populations in a rural setting. Specifically, external agencies can facilitate the connection of isolated wildlife tourism microentrepreneurs into a local business network by allowing them to choose their trusted peers. Considering the small scale of operation of wildlife tourism businesses and their level of visibility (i.e., word-of-mouth advertising), the vulnerability of these isolated microentrepreneurs can be influenced by external agencies by creating opportunities for microentrepreneurs to connect with potential trusted peers. Perceived opportunities and successes in wildlife tourism microentrepreneurship can increase the involvement of the local population in wildlife tourism microentrepreneurship, and can generate a sense of hope in being able to engage full-time in this area of tourism to earn their livelihoods. Trust is an important factor in establishing and maintaining network relationships, which controls information flow and the exchange of resources [13]. Another avenue for future research would be to use quantitative and qualitative approaches to understand the importance of trust embedded within the network and its effect on perceived business success.

The scope of nature-based tourism is growing, with increasing potential for the rural population to engage in entrepreneurial activity as a livelihood strategy. At this point, more empirical research is needed to better understand and promote these forms of microentrepreneurship. This study introduces the concept of bonding and bridging forms of social capital in wildlife tourism microentrepreneurship,

while using a social network analysis approach as a methodological tool, which is still in the primitive phase in the tourism literature. Overall, this study suggests that the network approach is an effective tool to examine bonding and bridging forms of social capital, if used in conjunction with a supportive qualitative assessment.

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