

**INTEREST IN “VIRTUAL” AND “REAL” SHRIMP RELATED
EXPERIENCES AMONG COASTAL AND SHRIMP FESTIVAL
TOURISTS IN SOUTH CAROLINA, USA**

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ABSTRACT

As the economic presence of the commercial fishing industry has declined due to globalization, regulatory changes and declining fish stocks, some coastal communities have diversified their local economy by developing fishing heritage-based tourism. These efforts have been a sometimes conflicting combination of investment in “virtual” (e.g., festivals, fishing imagery in advertising, restaurants) and “real” dependence (e.g., working waterfronts, direct marketing) dependence on the presence of the fishing industry. In South Carolina, coastal counties account for over half of the state’s \$16 billion tourism industry. In the same region, the number and profitability of shrimpers has dramatically decreased due to an increased supply of low-priced, farm-raised imported shrimp as well as rising gear and fuel costs. To improve competitiveness, the shrimp industry has explored marketing wild-caught shrimp based on premium quality, domestic branding, source identification and fishery sustainability. Another alternative is marketing locally harvested shrimp to tourists through the cooperation of shrimpers, restaurants, retailers and tourism organizations. In the summer of 2004, a survey of coastal visitors was conducted to examine shrimp attribute preferences, perceived knowledge about shrimp and interest in new shrimp related tourism experiences. This paper compares South Carolina Coastal Tourists and Beaufort, South Carolina Shrimp Festival attendees with respect to their interest in ‘virtual’ and ‘real’ shrimp-related experiences. Results of the analyses revealed that South Carolina Coastal Tourists were significantly more interested in ‘virtual’ than ‘real’ experiences and that there was not a significant difference between an interest in ‘real’ and ‘virtual’ opportunities for Festival Tourists. Overall, Festival Tourists were significantly more interested in ‘real’ and ‘virtual’ shrimp-oriented experiences than Coastal Tourists. It is recommended that community planners, festival organizers, shrimpers and shrimping trade associations collaborate to integrate both ‘virtual’ and ‘real’ strategies to improve the economic sustainability of the state’s shrimping communities.

Keywords: commercial fishing, tourism, shrimp, festival, waterfront

INTRODUCTION

Over the last decade, United States (U.S.) commercial shrimp fishing fleets have decreased due to declining fish stocks, rising fuel costs, regulatory changes to reduce overfishing, and competition with imports. In addition, coastal tourism and the spread of coastal gentrification (Orbach & Johnson, 1989) has intensified the competition for limited waterfront real estate and reduced the availability of commercial dock space (Barkley, Henry, & Gantt, 2004). The retention of commercial fishing in coastal communities could depend on whether the fishery is sustainable and whether leaders engaged in waterfront and coastal tourism planning and development choose to prioritize the fishing industry presence (e.g., by maintaining industrial zones) or to integrate the industry with other waterfront-based tourist attractions and services (e.g., restaurants, retail sales, charter fishing, marina facilities, ecotourism, maritime museums). Tourism and marine recreation can have a negative relationship with commercial fisheries due to development related environmental impacts on fisheries habitat, competition for waterfront access, and harbor congestion. However, since eating seafood where seafood is landed has traditionally been associated with the coastal tourism experience, strategies which integrate commercial fishing with tourism development appear to be marketable and may enhance economic sustainability of the fishing industry (Jodice, Norman, Shenoy, & Woosnam, 2006a).

Retention of commercial fishing in coastal zone planning is embedded in U.S. marine policy. Section 303 of the U.S. Coastal Zone Management Act sets national policy that includes encouraging and assisting states in giving priority consideration to coastal-dependent uses (i.e., national defense, energy, fisheries development, recreation, ports and transportation) and in the redevelopment of deteriorating urban waterfronts and ports (NOAA OCRM, 2007). Retention of the fishing industry may vary depending on the value placed on the actual presence of commercial fishing in the community, the strength of regulatory authority regarding coastal-dependent uses, investment potential, economic sustainability of fishing, and the level of tension between tourism, fishing and other coastal industries.

In addition, as direct economic dependence on commercial fishing in coastal communities declines, the fishing heritage and culture may continue to be appreciated and valued for its role in community identity and begin to occupy an iconic status (Brookfield, Gray, & Hatchard, 2005; Rogelja, 2002). The degree to which the iconic status supersedes the actual presence of the fishing industry in a community affects whether the industry may be perceived as having a 'real' or 'virtual' presence in the coastal community (Brookfield et al., 2005). Support for industry presence may also depend on how public and community planners define the 'real' fishing community. The Magnuson-Stevens Fishery Conservation and Management Act (MSFCMA) defines "fishing community" as a community that is "substantially dependent on or substantially engaged in the harvest or processing of fishery resources to meet social and economic needs, and includes fishing vessel owners, operators, and crew and United States fish processors that are based in such community" (MSFCMA 16 U.S.C. 1802 §3(17)). This definition is important to implementation of National Standard 8 of the MSFCMA which mandates that fishery management plans consider the social and economic impact of regulations on fishing communities (MSFCMA Section 301 [16 U.S.C. 1851(a)(8)]).

The 'real' and 'virtual' aspects of the commercial fishery tourism are specifically defined by Brookfield et al., (2005: 67) as follows:

'Real' dependency is product-based and reflects the major place occupied in communities...by the real fishing and fishing-related industries; 'virtual' dependency is image-based, and reflects the idea of a fishing industry in a community, where it serves as an icon and branding mechanism to encourage both the tourist industry and niche markets for fish products.

Brookfield et al. (2005) based this definition on the discovery that four fisheries-dependent communities on the East Coast of the United Kingdom (U.K.), in different stages of fishing dependence, existed on a continuum between 'real' and 'virtual' dependence, where the fishing industry is part of the waterfront destination to varying degrees. Their definition of 'virtual' dependency is reminiscent of the 'staged

authenticity' described by (MacCannell, 1973: 589), were "tourist settings are arranged to produce the impression that a back region has been entered even when this is not the case." Likewise, the presence of the 'real' fishing industry would assure tourists could see and experience "routine aspects of life as it is really lived" (MacCannell, 73:601).

The differentiation between 'real' and 'virtual' aspects of the fishing community is similarly characterized in farm tourism literature—i.e., tourism enterprises located on active farmland where the landscape is maintained by the farmer for agricultural production are distinguished from tourism activities developed by the farmer divorced from the agricultural business (Busby & Rendle, 2000; Bowen, Cox & Fox, 1991). Similarly, seafood related tourism experiences might be considered 'real' if they depend on the active presence of the fishing industry and fishermen who are engaged in commercial fishing. Seafood experiences would be 'virtual' if it is not necessary for the fishing industry to be engaged in fish harvesting locally in order for the activity to exist.

A number of research studies have explored aspects of commercial fisheries-related tourism. These studies include community-level case studies (Claesson, Robertson, & Hall-Arbor, 2006; Brookfield et al., 2005; Wolfenden, Cram, & Kirkwood, 1994; Sterry, 1998; Fellenius, Williams, & Hood, 1999), evaluation of coastal tourists' attitudes towards aquaculture (Tango-Lowy & Robertson, 2000) or commercial fishers (Hafner, Robertson, & Carlsen, 2003), and evaluation of seafood preferences of festival attendees (Dasgupta, Wirth, & Davis, 2007). However, no studies were found that have specifically examined whether tourists choose coastal destinations based on the presence of the commercial fishing industry. South Carolina (S.C.), located on the Atlantic coast in the southeastern region of the U.S., is a good place to evaluate consumer preferences for current and potential 'real' and 'virtual' seafood-based experiences. This is because the commercial shrimp fishing industry is suffering economic decline, tourism is one of the leading industries, shrimp is popular among U.S. consumers, and the shrimp fishing image is prevalent in regional tourist-oriented signage and literature.

The S.C. shrimp industry is primarily family businesses and exists as small shrimp fleets scattered all along the coast and enhancing the scenery of many large and small S.C. harbors. The industry focuses on two commercial species, white shrimp (*Penaeus setiferus*) and brown shrimp (*Penaeus aztecus*). Neither species is considered overfished, and the state's shrimp season usually extends from spring (May/June) through early winter (December/January) (SCDNR, 2006a). Therefore, shrimp harvest generally coincides with the peak tourist seasons (March through October). The fishery has existed since the mid-1920's, but significant expansion occurred after World War II. Initially, the industry trucked fresh shrimp on ice from the docks directly to restaurants and retailers throughout the region, but now most shrimp is transported to processing plants outside the state. A small supply of shrimp is still distributed to local markets and restaurants.

In the last decade, the S.C. shrimp industry has faced numerous challenges which have significantly reduced the fleet's active presence on the coastal landscape (Barkley et al., 2004). These include the cost of turtle and finfish by-catch reduction devices and limited availability of processing and storage facilities. The most significant challenge is suppressed prices resulting from increased competition from foreign shrimp producers (primarily aquaculture) supplying the U.S. market—i.e., approximately 90 percent of shrimp available on the U.S. market is now imported (Southern Shrimp Alliance, 2003). Attempts to impose antidumping duties on the largest suppliers of imported shrimp have also been challenging (Southern Shrimp Alliance, 2007). While the sale of existing commercial dock space to residential developers an increasingly lucrative option, some dock owners remain because they wish to support the industry.

As a means to increase their return on investment and compete with imports, the S.C. shrimp industry is exploring new marketing strategies (Jodice, et al., 2006a; Trunk, 2005). The industry received significant federal subsidies in 2003 and some of this funding was allocated to development of marketing strategy. One option is to market an in-season, wild-harvested, quality shrimp brand at the local level by collaborating with the state's coastal travel and tourism industries and heritage and culinary tourism development and marketing efforts (e.g., SCPRT, 2007). This alliance makes sense given that travel and tourism is a top industry and generates more state income than any other industry in South Carolina

(SCPRT, 2003). Furthermore, 56.7 percent of total domestic travel expenditures received by the state in 2004 (\$7.8 billion) were captured by the coastal counties of Horry, Charleston, and Beaufort (TIA, 2005). In comparison, the total estimated value of South Carolina shrimp landings (heads-off) in 2004 was only \$8.4 million (SCDNR, 2006b). The potential for linkages between tourism and the shrimp industry is apparent in that over 30% of the money spent by domestic travelers in South Carolina is on foodservice (i.e., restaurants, grocery stores and other eating and drinking establishments), and almost 50% of travel generated employment is in the foodservice sector (TIA, 2005). Furthermore, the fastest growing tourism segments in the state include heritage tourism, nature-based tourism, agritourism, and culinary or food tourism.

Beyond the restaurant experience, the S.C. coast offers a variety of opportunities for shrimp-related experiences including shrimp festivals; purchase of shrimp from retailers, roadside stands, farmers markets, and docks; viewing of shrimp trawlers from shore or while boating; and an educational charter trip focused on shrimp. However, it has become difficult for consumers to distinguish 'real' from 'virtual' experiences. For example, use of shrimp industry imagery by coastal restaurants (e.g., inactive vessels tied to docks or shrimp imagery in signage) where the majority of shrimp served is the imported, farmed product, can result in consumer confusion about whether the shrimp they eat in restaurants is "local" (Jodice, Norman, Condasky, Howell, Shenoy, McElroy, Dayton, & Wooten, 2006b). Unpublished research by Jodice and Norman found that over 40% of S.C. coastal tourists surveyed in 2004 were unsure if the shrimp typically served in restaurants on the S.C. coast is locally harvested.

Exploring coastal tourist preferences for seafood products and experiences could be useful toward aligning local commercial seafood harvest, settings and experiences with coastal tourism marketing and development, as a means to distinguish a coastal destination (Jodice et al., 2006a) and meet policy objectives. The 2004 South Carolina (S.C.) Coastal Tourism Survey was designed to examine tourists' preferences regarding locally harvested shrimp while traveling on the coast. Although this survey was not specifically developed to differentiate tourist preferences for 'real' and 'virtual' experiences, certain survey items are relevant to this concept.

This paper focuses on analyzing the survey items which describe possible shrimp-related experiences, for two survey groups—1) a general group of S.C. coastal tourists and 2) participants in the Beaufort Shrimp Festival on the S.C. coast. The Beaufort Shrimp Festival has been held in Beaufort, S.C. since 1995 and celebrates the shrimp industry and "Lowcountry" traditions and cuisine (Discover South Carolina, 2007; Beaufort Chamber of Commerce, 2007). "Lowcountry" refers to the state's coastal plain region. Beaufort, one of the southernmost coastal ports, is located in Beaufort County and west of Hilton Head Island. The festival occurs over a weekend in October, usually in Beaufort's waterfront and historic downtown areas. The Beaufort Chamber of Commerce and the South Carolina Shrimpers' Association collaborate to produce the festival. Participants can purchase fresh shrimp (from commercial vessels or the Shrimpers' Association) and sample shrimp cooked in local "Lowcountry" dishes. Other highlights include Friday evening live entertainment with lighted shrimp boats as backdrop, a servers' race, arts & crafts, and a "Popcorn Shrimp Race" for kids (Discover South Carolina, 2007). The decision to compare the S.C. Coastal Tourists and Beaufort Festival Tourists is based on the hypothesis that coastal tourists differ significantly from festival attendees in their interest in 'real' and 'virtual' shrimp related experiences.

THE STUDY

Methods

A two-stage research methodology was employed in the 2004 South Carolina (S.C.) Coastal Tourism survey, consisting of the collection of mailing addresses through a systematic on-site intercept of coastal visitors and a subsequent mail survey. Visitors were defined as individuals who did not live in the county in which they were intercepted. Address collection for the two survey segments of visitors to the South Carolina coast occurred as follows:

- 1) S.C. Coastal Tourists—Visitors were intercepted from July through October, 2004 in four (i.e., Horry, Georgetown, Charleston and Beaufort) of the six counties of coastal South Carolina. Sampling effort

was stratified based on the 2001-2002 visitor expenditures by county (TIA, 2003). Intercepts occurred at 27 tourist venues (e.g., beach, waterfront boardwalk, golf course, botanical garden, state parks, amusement park, shopping areas) and resulted in 831 addresses. Of these, 803 were good addresses and resulted in 356 usable returned surveys, for a 44% survey response rate.

- 2) Beaufort Shrimp Festival Tourists—Visitors were intercepted at the October, 2004 Beaufort Shrimp Festival. Intercepts resulted in 429 addresses. Of these, 405 were good addresses and resulted in 248 usable surveys, for a 61.2% response rate.

All survey participants were sent a ten-page mail-back survey within two weeks after their trip. This mail-back survey was administered using a modified Dillman (2000) approach consisting of an initial mailing, reminder postcard and follow-up mailing. The survey included several questions related to food preferences (Shenoy, 2005), characteristics of the most recent trip to S.C. coast, importance of shrimp attributes (labeling), beliefs and expectations about shrimp and shrimp purchasing on the South Carolina coast, interest in shrimp-related tourism experiences, self-assessed knowledge about shrimp, at home seafood consumption behavior, and demographics (Jodice et al., 2006a).

Only respondents who were shrimp eaters were included in the data analysis—i.e., S.C. Coastal Tourist (N=317); Beaufort Festival Tourist (N=233). Data analysis focused on comparing S.C. Coastal Tourists and Beaufort Festival Tourists on their response to items related to interest in ‘real’ and ‘virtual’ shrimp-related experiences while traveling on the South Carolina coast.

Results

To examine preferences for shrimp-related experiences, 12 out of 14 shrimp-related experience items were assigned to ‘real’ and ‘virtual’ categories based on Brookfield et al. (2005). Shrimp-related experiences were designated as representing a ‘real’ dependency if the experience required the presence of active commercial shrimp fishermen in the coastal destination or ‘virtual’ dependency if the experience was more relevant to the shrimp fishery as an image or cultural icon. The 12 items were based on the respondents’ agreement (1=strongly disagree to 5=strongly agree) with the statement “While visiting the SC coast, I would like to...”

Table 1 provides results (Chronbach’s alpha, item means, summative means, and standard deviations) for the ‘real’ and ‘virtual’ scales, for the two survey groups combined. A paired t-test was conducted between ‘real’ and ‘virtual’ summative means, to test if there was a difference between the respondents’ interest in ‘real’ and ‘virtual’ shrimp experiences. Results revealed that respondents’ interests differed significantly between ‘real’ and ‘virtual’ experiences, with interest in ‘real’ (Mean=3.13) being lower than ‘virtual’ (Mean=3.29), $t(451) = -7.708$, $p < 0.001$. However, the correlation between ‘real’ and ‘virtual’ summative means was strong and significant ($r = 0.862$, $p \leq 0.01$).

Table 1. Descriptives for ‘real’ and ‘virtual’ shrimp related experience scales.

While visiting the SC coast, I would like to...	N	Mean¹(SD)
<i>‘Real’ (α=0.883)</i>	458	3.13(0.92)
Bring home freshly caught shrimp	492	3.43(1.23)
See shrimp boats when I am visiting	494	3.39(1.08)
Tour a shrimp trawler that’s docked	484	3.14(1.15)
Time my visit when fresh locally harvested shrimp is available	480	3.09(1.13)
Learn about shrimp fishing from a commercial shrimp fishermen	482	2.97(1.13)
Go out on a commercial shrimp trawler	485	2.84(1.24)
<i>‘Virtual’ (α=0.834)</i>	468	3.29(0.77)
Eat shrimp cooked in traditional southern recipes	500	4.03(0.84)
Eat fresh shrimp at local festivals or events	497	3.85(0.98)
Learn from a chef how to cook shrimp in traditional southern recipes	484	3.19(1.09)
Learn more about local shrimping heritage	485	3.07(1.03)
Use a travel guide with information on where to see local shrimp boats	483	2.96(1.10)
Go out on a charter boat to catch shrimp	481	2.74(1.21)

¹Scale is 1=strongly disagree, 5=strongly agree

A series of t-tests were conducted to compare the differences between S.C. Coastal and Beaufort Festival groups with respect to their interest in 'real' and 'virtual' shrimp experiences (Table 2). Paired t-tests were conducted to determine if interest in 'real' and 'virtual' shrimp experiences were significantly different within each survey group. Results indicated that S.C. Coastal Tourists were significantly more interested in 'virtual' (Mean=3.12) than 'real' (Mean=2.86) shrimp experiences, $t(263) = -9.48, p < 0.001$, but that no significant differences existed between 'real' (Mean=3.52) and 'virtual' (Mean=3.54) for Beaufort Festival Tourists, $t(187) = -0.793, p > 0.05$.

Table 2: Comparison (t-test) of S.C. Coastal Tourists and Beaufort Festival Tourists with regard to interest in shrimp-related experiences while visiting the South Carolina Coast.

While visiting the SC coast, I would like to...	S.C. Coastal Tourists		Beaufort Festival Tourists	
	N	Mean ¹ (SD)	N	Mean (SD)
<i>"Real"***</i>	267	2.86(0.93)	191	3.52(0.77)
Bring home freshly caught shrimp***	284	3.15(1.27)	208	3.81(1.06)
See shrimp boats when I am visiting***	287	3.15(1.13)	207	3.73(0.90)
Tour a shrimp trawler that's docked***	281	2.84(1.15)	203	3.57(1.01)
Time my visit when fresh locally harvested shrimp is available***	277	2.78(1.11)	203	3.51(1.01)
Learn about shrimp fishing from a commercial shrimp fishermen***	280	2.70 (1.13)	202	3.35(1.03)
Go out on a commercial shrimp trawler***	282	2.62 (1.20)	203	3.14(1.23)
<i>"Virtual"***</i>	274	3.12(0.80)	194	3.54(0.66)
Eat fresh shrimp at local festivals or events***	281	3.49(1.01)	216	4.31(0.70)
Eat shrimp cooked in traditional southern recipes***	287	3.87(0.87)	213	4.25(0.73)
Learn from a chef how to cook shrimp in traditional southern recipes**	283	3.07(1.12)	201	3.35(1.04)
Learn more about local shrimping heritage***	283	2.91(1.06)	202	3.29(0.93)
Use a travel guide with information on where to see local shrimp boats*	284	2.87(1.13)	199	3.08(1.04)
Go out on a charter boat to catch shrimp***	280	2.59(1.18)	201	2.96(1.23)

¹Scale is 1=strongly disagree, 5=strongly agree; * is $p \leq .05$, ** is $p \leq .01$, *** is $p \leq 0.001$

Independent sample t-tests were then conducted to determine if S.C. Coastal and Beaufort Festival tourists differed in their interest in 'real' and 'virtual' shrimp experiences. The S.C. Coastal and Beaufort Festival respondents were significantly different with regard to their interest in both the 'real' $t(456) = -8.32, p < 0.001$, and 'virtual', $t(466) = -6.21, p < 0.001$, shrimp experiences, with the Beaufort Festival Tourists demonstrating stronger interest than the S.C. Coastal Tourists in both 'real' and 'virtual'. Analyses of each of the twelve items found that Beaufort Festival Tourists were also significantly more interested in each of the shrimp experiences.

Additional analyses explored the differences between the two survey groups with respect to their demographics; trip characteristics; shrimp eating frequency; beliefs, expectations and preferences regarding shrimp; and knowledge about shrimp.

The S.C. Coastal and Beaufort Festival groups were relatively similar demographically (Table 3). The percentage of participants in each group did not differ by gender, $\chi^2(1, N = 541) = 0.704, p > .05$; education level, $\chi^2(3, N = 535) = 0.067, p > .05$; employment type, $\chi^2(6, N = 537) = 0.279, p > .05$; marital status, $\chi^2(3, N = 539) = 0.194, p > .05$; or household income, $\chi^2(6, N = 488) = 0.132, p > .05$. However, there was a significant difference between the two groups for age, $t(528) = -3.19, p \leq 0.001$, with S.C. Coastal respondents being an average of 3.6 years younger than Beaufort Festival respondents.

Table 3: Demographics for S.C. Coastal and Beaufort Festival Tourists.

Demographic	S.C. Coastal Tourists		Beaufort Festival Tourist s	
	N	%	N	%
Gender				
male	139	44.4	105	46.1
female	174	55.6	123	53.9
<i>Total</i>	<i>313</i>		<i>228</i>	
Age (Mean, SD)***	304	(49.0, 13.5)	226	(52.6, 11.9)
Education				
high school	88	28.6	47	20.7
college	141	45.8	102	44.9
professional	26	8.4	30	13.2
post graduate	53	17.2	48	21.1
<i>Total</i>	<i>308</i>		<i>227</i>	
Employment				
employed full time	192	62.1	122	53.5
employed part time	28	9.1	23	10.1
student	5	1.6	5	2.2
homemaker	17	5.5	10	4.4
unemployed	1	0.3	2	0.9
retired	57	18.4	61	26.8
other (self-employed)	9	2.9	5	2.2
<i>Total</i>	<i>309</i>		<i>228</i>	
Marital Status				
married	243	77.9	193	85.0
widowed	15	4.8	7	3.1
divorced or separated	30	9.6	17	7.5
never married	24	7.7	10	4.4
<i>Total</i>	<i>312</i>		<i>227</i>	
Household Income				
under 10,000	4	1.4	1	0.5
10,000-19,999	11	3.8	4	2.0
20,000-39,999	40	14.0	16	7.9
40,000-59,999	56	19.6	32	15.8
60,000-79,999	54	18.9	46	22.8
80,000-99,999	40	14.0	35	17.3
100,000 +	81	28.3	68	33.7
<i>Total</i>	<i>286</i>		<i>202</i>	

*** is $p \leq 0.001$

Results of the Chi-Square tests indicated that there was a relationship between survey groups by the number of visits to the S.C. coast in the last two years, $\chi^2(3, N = 545) = 0.001, p < .001$, and by the duration of their last trip to the S.C. coast, $\chi^2(4, N = 544) = 0.002, p < .01$ (Table 4). More Beaufort Festival respondents (22.2%) than SC Coastal respondents (7.6%) have taken more than 10 trips to the S.C. coast in the last 2 years. Also, the largest percentage of S.C. Coastal respondents (42.9%) took a 4-7 day trip, while the largest percentage of Beaufort Festival respondents (46.3%) took a 2-3 day trip during their last visit to the S.C. Coast. These Beaufort Festival trip duration results correspond with the fact that the festival is a weekend event.

Table 4: Trip characteristics for SC Coastal and Beaufort Festival Tourists

Characteristic	S.C. Coastal Tourists		Beaufort Festival Tourists	
	N	%	N	%
# visits to SC Coast in the last 2 yrs.***				
first trip	87	27.6	46	20.0
2-5 trips	161	51.1	97	42.2
6-10 trips	43	13.7	36	15.7
more than 10 trips	24	7.6	51	22.2
Total	315		230	
Duration of the trip**				
day trip	18	5.7	22	9.7
2-3 days	113	35.6	105	46.3
4-7 days	136	42.9	64	28.2
8-14 days	40	12.6	23	10.1
more than 14 days	10	3.2	13	5.7
Total	317		227	

** is $p \leq .01$, *** is $p \leq 0.001$

There was also a relationship between type of coastal visitor and their frequency of eating shrimp, $\chi^2(2, N = 525) = 0.027, p < .05$ (Table 5), with Beaufort Festival Tourists generally eating shrimp more frequently than S.C. Coastal Tourists.

Table 5: Shrimp eating frequency for S.C. Coastal and Beaufort Festival Tourists.

Shrimp eating frequency	SC Coastal Tourists (N=303)	Beaufort Festival Tourists (N=222)
	%	%
once a month	54.5	42.8
once every two weeks	30.0	36.0
at least once a week	15.5	21.2

The two groups also differed significantly with regard to selected beliefs, expectations, and preferences regarding shrimp and industry presence while visiting the S.C. coast (Table 6). Beaufort Festival Tourists agreed more strongly than S.C. Coastal Tourists with all of the selected statements, which suggests they are more focused on the purchase and enjoyment of shrimp on the South Carolina coast and are more likely to appreciate and take advantage of the presence of an active seafood industry.

Table 6: Comparison of S.C. Coastal Tourists and Beaufort Festival Tourists with regard to shrimp-related beliefs, expectations and preferences.

Selected beliefs/expectations/preferences	SC Coastal Tourists		Beaufort Festival Tourists	
	N	Mean ¹ (SD)	N	Mean(SD)
Coastal restaurants should support local seafood harvesters***	293	4.14(0.75)	223	4.43(0.63)
I like the atmosphere of the coastal fishing ports in S.C.***	293	3.72 (0.94)	223	4.36(0.62)
I like to eat local seafood specialties and recipes***	303	3.96(0.89)	228	4.29(0.73)
I believe in supporting restaurants that serve locally harvested seafoods***	299	3.78 (0.97)	227	4.24(0.77)
Knowing that there is an active seafood industry contributes to my SC coastal experience***	292	3.34(1.15)	223	4.04(0.86)
I like to purchase local shrimp to take home from my visit to the coast***	301	2.53(1.30)	226	3.39(1.29)
I am willing to pay more for locally harvested fresh seafood***	301	3.44(1.05)	227	3.80(1.02)
When I think of S.C. coast, I think of shrimp***	293	2.82(1.20)	222	3.68(1.04)

¹Scale is 1=strongly disagree; 3=unsure; 5=strongly agree; *** $p \leq 0.001$

Previous research by Jodice et al. (2006a) using the S.C. Coastal Tourist data found that self-assessed knowledge about shrimp management positively influences importance of shrimp origin (e.g., who caught the shrimp, state or local wild caught) and that knowledge about shrimp cooking positively influences importance of shrimp origin, freshness, price, inspection, and reputation. They suggest that low self-assessed knowledge about shrimp may make it more difficult for consumers to discriminate among shrimp attributes. Comparison of the two survey groups on the same knowledge items examined in Jodice et al. (2006a) indicated a significant difference between the groups with regard to their self-assessed knowledge about shrimp, with Beaufort Festival being more knowledgeable than S.C. Coastal Tourists (Table 7).

Table 7: Comparison of S.C. Coastal and Beaufort Festival Tourist’s self-assessed knowledge about shrimp fishery management and cooking.

Self-assessed knowledge about...	S.C. Coastal Tourists		Beaufort Festival Tourists	
	N	Mean ¹ (SD)	N	Mean (SD)
<i>Management</i>				
Commercial shrimp fishing**	296	1.69 (0.85)	219	1.94 (0.95)
Marine environmental sustainability issues related to shrimp**	297	1.45 (0.77)	218	1.68 (0.93)
Shrimp regulations/ management***	297	1.33 (0.68)	217	1.57 (0.87)
Shrimp farming*	297	1.38 (0.70)	219	1.52 (0.80)
<i>Cooking</i>				
Cooking and preparation of shrimp***	296	2.84 (1.00)	218	3.20 (0.97)
Nutritional benefits of shrimp***	296	2.39 (1.01)	218	2.68 (1.01)
Selecting quality shrimp for purchase*	297	2.33 (1.08)	217	2.63 (1.11)

¹Scale is 1=totally uninformative, 5 = extremely knowledgeable; *= $p \leq 0.05$, **= $p \leq 0.01$, ***= $p \leq 0.001$

DISCUSSION & CONCLUSIONS

Several policy and planning issues can make integration of tourism and commercial fishing uses on waterfronts complex. These include overlapping jurisdictions/regulations regarding permitting authority; weak zoning ordinances or water-dependent use definitions that allow for conversion to non-water-dependent uses; compatibility of neighboring uses; economic sustainability of the fishing industry; attitudes and perceptions of residents (old vs. new), fishermen, and decision-makers; and availability of financing for purchase of development rights, habitat restoration, and recycling of industrial sites. (Robinson, 2007; Frizzera, 2007; Edmunds, 2007).

Regulatory conditions in South Carolina appear to favor retention of the fishing industry on the coast. The South Carolina Department of Health and Environmental Control’s Office of Ocean and Coastal Resource Management (SCDHEC OCRM) regulations [30-1.D(51)] define a water-dependent facility as one “which can demonstrate that dependence on, use of, or access to coastal waters is essential to the functioning of its primary activity.” These regulations prohibit siting of new non-water-dependent structures (e.g., residences, restaurants, motel/hotel facilities, and parking facilities) “seaward of the baseline” without a special permit. In addition, their current Five-year Strategy includes “Identify traditional use areas so that historical and cultural uses are not compromised and provide incentives for the preservation of traditional uses to avoid conversion for private use.”

The survey results demonstrate that S.C. Coastal Tourists are more interested in ‘virtual’ than ‘real’ shrimp-related experiences, but that Beaufort Festival Tourists do not differ in their interests for ‘real’ and ‘virtual’ experiences. The results also demonstrate that the Beaufort Festival Tourists are more interested in ‘real’ and ‘virtual’ shrimp-related experiences, are more knowledgeable about shrimp, and are generally favorable to the presence of the local shrimp industry in their coastal destination. This result makes sense, given Beaufort Festival respondents chose to attend a shrimp festival. Results also suggest that tourists, particularly those oriented to eating shrimp on the coast, do not clearly differentiate between ‘real’ and ‘virtual’ dependency of shrimp-related experiences.

The results imply that S.C. coastal destinations interested in attracting the general coastal tourist, may want to highlight the shrimp industry image through 'virtual' experiences—e.g., festivals, traditional recipes, cooking classes, heritage museums/exhibits, travel guides, and charter boat trips. However, communities interested in marketing themselves as a seafood destination or attracting visitors specifically interested in the local seafood product, may want to focus on strategies that retain the presence of the seafood industry. This may be particularly important if one goal is to market the local product within and beyond the community—e.g., as a niche product in retail outlets or restaurants. This conclusion is consistent with Dasgupta et al. (2007) who examined consumer preferences regarding local freshwater (aquacultured) prawns and suggested that prawn vendors would be more successful at dedicated prawn festivals than at general interest festivals.

A limitation of this study is that the items used to examine interest in 'real' and 'virtual' experiences were not originally designed with this dichotomy in mind, but were selected from an existing data set in effort to explore the importance of Brookfield et al.'s (2005) attention to 'real' and 'virtual' fishing industry experiences in the marine tourism planning. In addition, given that there is great socioeconomic and ecological variation in fisheries and ports, the results may not be applicable to other regions.

It is also important to recognize that the existence of 'virtual' experiences may be strongly interdependent with the 'real' presence of the shrimp industry in the region—e.g., would the shrimp fishery image on the S.C. coast be as powerful if shrimp trawlers no longer operated on the water. This was evident by the strong significant correlation between the 'real' and 'virtual' summative means.

Finally, a significant concern in recommending inclusion of the fishing industry in tourism planning is whether the commercial fishermen are open to collaboration with the tourism industry. Brandth and Haugen (2005) suggest that a farmer's identity may transition from being a farmer providing tourism experiences on the active farm (for supplemental income) to being a tourist host. Some commercial fishermen have transitioned to serving as tourist hosts—e.g., recreational charter captain, maritime museum interpreter (Sterry, 1998; Nadel-Klein, 2000). However, this type of occupational transition may be particularly challenging because the social status, skills and independence associated with fishing at sea (Pollnac & Poggie, 1988) are very different from those associated with tourism, and the perceived opportunity costs (Terkla et al., 1988; Garrity-Blake, 1996) may limit the number of fishermen willing to become involved in tourism.

It is recommended that South Carolina coastal planners, festival organizers and shrimp fishermen, interested in collaborating, develop both the 'virtual' and 'real' experiences for tourists, particularly if the goal is to strengthen the economic sustainability of the state's shrimping communities. However, this study used existing data to explore the importance of the seafood industry presence to tourists visiting South Carolina coastal fishing communities in transition. More empirical research is needed that evaluates 1) the economic impact of different coastal community development strategies that integrate the commercial fishing industry with tourism and 2) whether coastal tourists would choose or value one waterfront destination over another given different combinations of 'real' and 'virtual' coastal community attributes.

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