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INTRODUCTION

Fishery economists have invested considerable time and effort in collecting data on the operating costs and revenues of shrimp vessels in the southeastern United States throughout the past decade (see Blomo and Griffin (1978), Griffin and Nichols (1976), Liao (1979), and Roberts and Sass (1979)). These efforts, however, have been largely independent and have been undertaken during different years, in distinct geographical areas and using different, albeit similar, survey instruments. Consequently, the data from the individual efforts are not compatible and one cannot readily make comparisons between costs and revenues of shrimp vessels in different areas or having different fishing characteristics.

During the spring and early summer of 1983, the Southeast Fisheries Center, National Marine Fisheries Service, initiated a data collection effort in the southeast that was designed to collect comprehensive cost and revenue data from shrimp fishermen in the Gulf of Mexico and south Atlantic areas. The objective of this data collection was to provide a high quality data base that could be used for two purposes: (1) to estimate the financial status of shrimp harvesting operations in the southeast and (2) to make statistical comparisions between the costs and revenues of shrimp vessels operating in different geographical areas. The results of these statistical analyses are presented in this report. The results will also provide the foundation for more rigorous analyses of the cause and effect relationships between costs, revenues, vessel operations and physical characteristics in future analyses.

DATA COLLECTION

Cost and revenue data were collected in personal interviews with fishermen, vessel owners and sometimes accountants, depending on the availability and source of the financial and operational data. Fishermen were initially contacted at the docks as they were off-loading their vessels. In order to interview as random a sample as possible, the number of vessels observed on a given day at the port was divided by the desired number of contacts for the sampling intervals. For example, if 60 vessels were observed and 20 contacts were required, then two out of every six vessels would be contacted, or every third vessel. The selection of the ports and the number of interviews per port were determined as part of the survey design based on the estimated amount of fishing at the port and the seasonality of the shrimp fishery. One hundred and ninety three interviews were completed and the following number of interviews were conducted in each state: South Carolina, 59; Georgia, 24; east Florida, 9; Alabama, 20; Louisiana, 60; and Texas, 21.

The data were collected with the hypothesis in mind that the fishing characteristics were different in the south Atlantic area, which is the area off the coasts of South Carolina south along the east coast of Florida, from the fishing patterns of vessels fishing in the Gulf of Mexico. Non-statistical evidence, i.e., discussions with local port agents, fish dealers, fishermen, etc., indicates that fishing in the south Atlantic area consists largely of one day (or one night) trips. These fishermen usually fish close enough to their homeport so they can return every evening or morning, depending whether they are fishing during the day or night. Reasons for these fishing patterns are probably a combination of attitude, wanting to return home everyday, and natural, because most of the trawlable

shrimp habitat is in relatively shallow water, close to shore. The trawtable habitat in much of the Gulf of Mexico, on the other hand, extends into deeper water and considerably further offshore. Thus an interesting hypothesis would be to test whether Gulf shrimpers make significantly longer (distance and time) trips compared to the fishing patterns of the shrimpers along the south Atlantic coast.

The cost and revenue data from vessels fishing in the south Altantic region were compared to the financial data reported by the fishermen sampled in the Gulf of Mexico. In addition, intra-regional differences were statistically tested to determine if financial data from vessels in the three states within each region were similar. Testing the data in this manner established (1) whether or not differences were statistically different and (2) whether these differences were due mainly to physical differences in the trawlable habitat or due to differences in fishing methodologies. The cost and revenue data and the analysis of variance results from these comparisons are presented in the next section.

FINANCIAL PROFILES AND ANALYTICAL RESULTS

The cost and revenue data are presented in standard budgetary format (Table 1) with fixed and variable costs being separated into individual line items. Fixed costs (or overhead) are those expenditures that do not vary with changes in fishing activity and have to be paid whether you fish or not. Variable costs vary with increases or decreases in fishing activity and are zero if the vessel is not used - but then so is revenue. The cost and revenue averages for all the tables and analyses in this paper were calculated by dividing by the number of respondents reporting the specific budget item and not by dividing by the entire sample size. For example,

only 12 respondents from the 101 interviewed in the Gulf reported payments on short-term working capital loans; therefore, the amount reported in the table is the average of only 12 respondents (i.e., the number in parentheses) and not the entire 101. This point is especially important for the total fixed and total variable cost items. These "totals" do not represent arithmetic sums of the individual line items for fixed and variable costs. The total fixed and variable cost values reported in the tables are the reported values for each vessel divided by the total number of vessels reporting, which are likely to be arithmetically different from the sum of the individual "averaged" line items.

Intra-regional comparisons between vessels fishing in the Gulf and ones in the south Atlantic region were made using one-way analysis of variance tests. The F-ratios, shown in Table 1, indicate that the means for all the line items, except perhaps the payment on short-term working capital loans, are significantly different between the two regions ($p \geq 0.10$). That is, the null hypothesis that the averages for the costs and revenues of vessels in the Gulf and south Atlantic are equal can be rejected. For almost every line item, including total revenue, the average values reported by Gulf vessels are nearly twice those for the south Atlantic vessels, except for the bottom line, in which the south Atlantic vessels, on the average, had higher net revenues than Gulf vessels. The remainder of this section presents statistical analyses investigating potential reasons why the averages were so different between these two regions.

As a first step in these investigations, the costs and revenues are summarized by state for the two regions (Table 2 and 3 for the Gulf and south Atlantic regions, respectively). If the width of the shelf area was the

only factor affecting fishing patterns in these two regions, then differences between vessels operating in each of the three states in the two regions separately should not be statistically significant. The null hypothesis is that the means for vessels sampled in each state are equal. That is, the means for Alabama, Louisiana and Texas vessels are equal and the means for South Carolina, Georgia and east Florida vessels are equal. The large F ratios for most of the line items in Tables 2 and 3 indicate that the hypotheses that intra-regional differences between vessel costs and revenues are due solely to a single difference in regional oceanographic characteristics have to be questioned and should be rejected.

Multiple comparison tests, using Duncan's test (Duncan, 1955), were done to test if the means from the three states (in the Gulf and Atlantic separately) came from the same population. This statistical technique groups the sample means from similar populations and these subsets are presented in the far right-hand column of Tables 2 and 3. By determining how the data can be grouped, some evidence may be suggested that would indicate the reasons for these intra-regional differences.

In the Gulf region, the results of the Duncan Test for total revenue and variable costs suggest that the null hypotheses, that the means are equal, should be rejected and the means for vessels in Alabama and Texas are significantly different from the sample means for vessels in Louisiana. The null hypothesis for total fixed costs and net revenue, on the other hand, should not be rejected, which implies that the sample means from the three states are from similar populations. For the south Atlantic region, the results of the mulitiple comparisons are not so clear. The null hypotheses for total revenue, total variable cost and net revenue can be rejected and the Duncan Test indicates that the means from the South Carolina and Georgia samples

are from similar populations. The small sample size (9) of the vessels surveyed at ports along the east coast of Florida, as well as some of the responses for these vessels suggests that the means for this sample may be biased. Consequently, rejecting the null hypothesis that the sample means for the vessels in these three states are equal seems somewhat questionable.

Tentatively, the conclusion can be drawn (albeit a weak conclusion) that costs, especially variable costs, and revenues are different between the Gulf and south Atlantic regions. Furthermore, inter-state differences exist in the Gulf; however, inter-state differences are unlikely in the south Atlantic region. Since differences in vessel costs and revenue are not related strictly to oceanographic differences, then fishing activity must be different between the two regions and should be investigated further.

Clearly, vessels that are used for fishing farther offshore or travel to other areas throughout the region to fish would have greater operating expenses than vessels that fish closer to shore and are less migratory. Vessel's fishing patterns throughout a year are difficult to document in a one-time recall survey, but as an approximation, the interviewees were asked the number of inshore trips, the number of offshore trips and the average number of fishing days per trip (inshore and offshore fishing times were recorded separately) that they made during 1982. The averages for these measures of fishing activity are significantly different for vessels in the Gulf region versus operations in the south Atlantic region (Table 4).

The number and duration of offshore trips reported by vessel operators in the two regions are especially enlighting. Gulf vessels, on the average, made 23 trips during 1982 with a reported 11.3 days per trip; whereas, south Atlantic fishermen averaged 1.8 days per trip, but made 115 trips. By multiplying trips times days per trips, Gulf fishermen averaged 160 days and

their counterparts in the south Atlantic fished an average of 207 days.

The data on inshore fishing (i.e., in the bays and sounds) are less reliable than those for offshore fishing because inshore shrimp vessels were not the primary target of this survey. Inshore trips were reported by some vessel operators in addition to their offshore fishing. There were four interviews with vessel operators who fished strictly inshore. Thus, because of the small samples sizes, results of inshore fishing are not discussed. Subsequent analyses, however, should provide a clearer comparison of the costs and revenues for vessels fishing only offshore versus ones that reported fishing both inshore and offshore.

Intra-regional comparisons of fishing activity (Tables 5 and 6 for the Gulf and south Atlantic regions, respectively) provide additional support for the tentative conclusions drawn from the Duncan Tests for costs and revenues. The average number of offshore trips is significantly different for Alabama and Texas vessels compared to Louisiana vessels (Table 5). Louisiana fishermen in the survey reported an average of 29 offshore trips with 9.4 days per trip; whereas, the average number of trips for Alabama and Texas vessels was 14 with a reported 12.4 and 15.8 days per trip, respectively. Also, about 1/3 of the Louisiana fishermen reported making inshore trips in addition to their offshore fishing.

In the south Atlantic region, the averages for the number of days per trip were nearly the same for the three states, i.e., 1.1 for South Carolina fishermen and 3.1 and 3.0, respectivley, for the Georgia and east Florida samples from fishermen. The numbers of offshore trips were different for the fishermen in these three states with South Carolina fishermen averaging almost twice the number of trips the Georgia fishermen reported, 133 and 68, respectively (Table 6). The average for east Florida fishermen was between

these two averages at 114 days. Sixty-four percent of the South Carolina fishermen reported making inshore trips, as well as offshore trips. None of the fishermen in either the Georgia or east Florida samples reported inshore fishing.

These fishing characteristics provide some explanation of the differences in variable costs, but they do not provide much rationale for the differences in fixed costs. Differences in the physical characteristics of the vessels in the two regions should provide some rationale for the differences in fixed costs. As would be expected because of the longer fishing trips, the average size of the vessels in the Gulf region, 66.7 feet, was significantly different from the average size of the vessels in the south Atlantic sample, 58.7 feet. Futhermore, Texas and Alabama vessels are larger, on the average, than Louisiana vessels, as the following indicates;

Gulf		South Atlantic	
Alabama	75.6 feet	South Carolina	61.2 feet
Louisiana	61.1 feet	Georgia	48.5 feet
Texas	74.1 feet	East Florida	69.3 feet

Hull repair costs are affected by vessel size because boat yards charge on a per-foot basis to haul out a vessel and repaint it. Mortgage payments and insurance premiums are also affected by vessel size because larger vessels generally cost more and are more costly to insure. It is also likely that the age of the vessel affects some of the fixed costs, e.g. insurance premium, mortgage payments, and depreciation. On the average, the vessels in the Gulf sample were newer, 12.3 years old, than the vessels in the south Atlantic sample, 15.8 years old. Again, the samples from Alabama and Texas had mean ages that were significantly different - 7.1 and 8.7

years, respectively - compared to the average age of the vessels sampled in Louisiana, 15.3 years old. Differences in the amount of payment on short-term working capital loans would not be expected to be influenced by vessel size or age, but is a business decision made by the vessel owner or operator.

An alternative way of analyzing these cost and revenue data is to compare them on a per trip basis. The differences in per trip cost and revenue averages between vessels operating in the Gulf compared to the vessels in the south Atlantic sample (Table 7) are even more demonstrable than the comparisons between the costs and revenues in Table 1. The exception is average net revenue per trip, which is negative for the Gulf sample compared to a small positive profit shown in Table 1.

Intra-regional comparisons using costs and revenue per trip (Tables 8 and 9 for the Gulf and south Atlantic regions, respectively) have similar characteristics to the costs and revenues shown in Tables 2 and 3. The sample means are from the same population for Texas and Alabama vessels, but they are significantly different than the averages for the Louisiana vessels. Net revenue per trip is negative for Louisiana vessels, whereas the accounting in Table 2 indicates an average positive net revenue of about $5,900 for these vessels. Likewise, the per trip costs show the same general characteristics as the straight dollar figures for vessels in the south Atlantic sample (Table 9). The per trip data for the south Atlantic samples do suggest that the vessels sampled in South Carolina are smaller scale operations, which reflect the high percentage of vessels that reported inshore fishing.

A final analysis of the data was made to determine if the area of fishing (i.e., offshore, inshore or both) could explain differences in the

costs and revenue data. Per trip costs and total revenue for offshore trips are, as would be expected, very large compared to the costs and revenues of both inshore and inshore-offshore trips (Table 10). The net revenues per trip, however, are nearly equal between offshore and inshore-offshore trips. The large net revenue per trip for inshore only vessels is somewhat questionable due to a sample size of only 4 vessels. This same general pattern holds for both the interstate comparisons for the Gulf region (Table 11) and the south Atlantic region (Table 12).

An interesting statistic is the negative average net revenue for offshore vessels sampled in the Gulf region. Further investigation shows that this negative net revenue per trip is due to the poor average performance of offshore vessels in both Alabama and Louisiana (Table 13). Texas vessels, which made only offshore trips, reported average net revenues per trip of $482 in 1982. Vessels used for both inshore and offshore fishing in the Alabama and Louisiana samples had better net revenue per trip performances compared to offshore trips (Table 14). The sample in Alabama was quite small (2) and thus the mean may not be representative of the fleet as a whole. The sample of Louisiana vessels, however, does provide some definite indications that the per trip performance of inshore-offshore fishing was considerably more profitable than that of the Louisiana fishermen fishing strictly offshore.

The average costs and revenues per trip for vessels fishing offshore that were sampled in South Carolina, Georgia and east Florida show considerable interstate differences. Offshore fishing in Georgia was more profitable than fishing in offshore areas by fishermen in either South Carolina or the east coast of Florida. Two statistical problems affect the conclusions on the south Atlantic fishery, however. First, the South

Carolina fishery appears to be more heavily distributed towards offshore fishing rather than inshore which obviously affects the vessels costs and revenue budgets. Unfortunately, the data were not sufficient to determine if the samples from South Carolina and Georgia were representative of the fisheries in those two states. Second, the sample size for the fishery off the coast of eastern Florida was very small, and as noted previously, the data suggest a biased sample.

CONCLUSIONS

Although this survey is the most comprehensive effort to collect cost and revenue data from shrimp vessel owners and operators in the southeastern United States, small sample sizes in certain sub-sample strata (some of which were discussed above) reduce the overall effectiveness of the survey. First, only 21 interviews were completed in Texas due, in part, to continuing controversies between Government enforcement agencies and the shrimp fishermen. Second, proper rapport was not established with fishermen in the northwestern area of Florida which also negated collection of data from fishermen in that area. Finally, neither Key West nor Fort Myers were selected as a sampling area and thus, survey personnel did not attempt to interview fishermen in those areas. This resulted in a gap in the data base for the west coast of Florida. However, because the survey was done in late spring and early summer, many of the offshore migratory fishermen based in Fort Myers and Key West were in the western Gulf fishing the brown shrimp off the coasts of Texas and Louisiana.

Notwithstanding these modest shortfalls, some substantial conclusions have been suggested by the data and analyses. Fishing operations, on the

average, were marginally profitable in Texas and Louisiana with net revenues of $5,900 and $5,300, respectively. The operations sampled in Alabama had average net revenues of minus $5,400. Several of the costs for these vessels, however, were noticably higher than the averages reported for Texas and Louisiana vessels - notably, vessel and gear depreciation, fuel expenses, hardware expenses and engine and general repair. In the south Atlantic region, fishing operations in South Carolina and Georgia had net revenues of $15,000 and $20,000 respectively. The fishermen surveyed in east Florida, however, had net revenues of -$6,200, again the small sample sizes influenced these averages.

Vessel operation is the most important factor in explaining the differences in vessel costs and revenues, although physical characteristics were shown to explain some of the differences in fixed costs. From the analysis of fishing activity, it can be concluded that vessel operations should be classified into two distinct groups in the Gulf of Mexico: (1) offshore fishing by vessels surveyed in both Texas and Alabama have average costs and revenues from the same population and can be grouped statistically and (2) Louisiana fishermen have distinct fishing characteristics and should be analyzed separately. The cost and revenue vessels sampled in the three south Atlantic states do not provide as conclusive statistical results as the Gulf samples and the weak conclusion is that the fishing operations are similar in all three states.

In terms of profitability, the survey data suggested some distinct characteristics. In the south Atlantic region, the vessels sampled in South Carolina had nearly the same per trip net revenues whether they fished strictly offshore, $53/trip, or both inshore and offshore, $85/trip. The Georgia fishermen in the survey were strictly offshore fishermen and

averaged about $477/trip. The Gulf fishermen had quite mixed results during 1982. The strictly offshore fishermen were unprofitable in Louisiana and Alabama, -$524/trip and -$325/trip, respectively, but fishermen were profitable in Texas, $482/trip (it should be recalled that the states in this report refer to where the interview took place, which is not necessarily the vessel's homeport). The inshore-offshore fishermen in Louisiana, however, were more successful than the offshore fishermen in Louisiana and had per trip net revenues of $420, compared to -$524 for offshore fishing.

Literature Cited

Blomo, V. and W.L. Griffin. 1978. Costs and returns data from Florida based Gulf of Mexico shrimp trawlers, 1977. Texas Sea Grant Report No. TAMN-SG-790-604. Texas A & M University, College Station, Texas.

Duncan, D.B. 1955. Multiple range and multiple F tests. Biometrics 11: 1-42.

Griffin, W.L. and J.P. Nichols. 1976. An analysis of increasing costs to Gulf of Mexico shrimp vessel owners, 1971-1975. Marine Fisheries Review 38(3): 8-12.

Liao, D.S. 1979. Economic analysis of mobility of shrimp vessels in the south Atlantic states. South Carolina Marine Resource Center Report No. 35. Charleston, South Carolina.

Roberts, K.J. and M.E. Sass. 1979. Financial aspects of Louisiana shrimp vessels, 1978. Sea Grant No. LSU-TL-79-007, Louisiana State University, Baton Rouge, Louisiana.

Table 1. Cost and revenues from a survey of shrimp vessels in the Gulf of Mexico and south Atlantic regions during 1982.

Budget item	Mean values *		F ratio	p	DF
	Gulf	S. Atlantic			
Total Revenue	147,567 (99)	84,571 (89)	33.6	0.00	186
Fixed Costs					
Hull repairs	5,250 (87)	2,836 (88)	12.1	0.00	173
Mortgage payment	14,765 (58)	5,838 (57)	26.3	0.00	113
Working capital	9,730 (12)	2,464 (15)	3.0	0.10	25
Insurance	7,048 (88)	4,301 (70)	28.0	0.00	156
Depreciation	14,872 (78)	10,417 (56)	4.0	0.05	132
Other	2,283 (62)	853 (74)	13.0	0.00	134
TOTAL	33,185 (101)	17,031 (92)	23.0	0.00	191
Variable Costs					
Fuel	36,311 (100)	18,350 (91)	39.0	0.00	189
Ice	3,539 (100)	2,561 (89)	10.7	0.00	187
Engine repairs	7,164 (98)	3,233 (90)	19.2	0.00	186
Gear repairs	6,754 (97)	3,138 (85)	22.7	0.00	180
General repairs	4,093 (89)	2,308 (82)	7.6	0.00	169
Hardware	3,676 (97)	1,633 (82)	5.5	0.00	177
Wages	38,884 (97)	17,671 (89)	48.6	0.00	184
Groceries	3,599 (36)	2,592 (52)	3.5	0.06	86
Other	4,295 (32)	2,516 (75)	8.4	0.01	105
TOTAL	106,328 (100)	52,510 (89)	46.4	0.00	187
Net Revenue	3,500 (99)	14,464 (90)	6.0	0.01	187

* The numbers in parentheses are the number of respondents reporting the respective budget items. "p" is the level of significance and D.F. is the degrees of freedom.

Table 2. Costs and revenues from a survey of shrimp vessels in Alabama, Louisiana and Texas during 1982.

Budget items	Mean values *			F		
	Alabama	Louisiana	Texas	ratio	p	Subsets
Total Revenue	201,446 (20)	113,372 (59)	169,815 (20)	10.8	0.84	AL & TX
Fixed Costs						
Hull repairs	5,492 (13)	4,479 (55)	7,316 (19)	1.8	0.20	-
Mortgage payment	17,058 (17)	18,613 (23)	7,683 (18)	5.7	0.01	AL & LA
Working capital	6,367 (3)	14,434 (4)	7,983 (5)	0.2	0.77	-
Insurance	8,197 (20)	6,008 (47)	8,280 (21)	3.9	0.02	AL & TX
Depreciation	36,208 (10)	11,857 (47)	11,460 (21)	15.4	0.00	LA & TX
Other	4,842 (10)	1,255 (33)	2,722 (19)	5.7	0.01	-
TOTAL	47,747 (20)	26,888 (60)	37,309 (21)	4.5	0.01	-
Variable Costs						
Fuel	51,810 (19)	27,471 (60)	47,546 (21)	11.0	0.00	AL & TX
Ice	4,837 (19)	2,748 (60)	4,626 (21)	8.7	0.00	AL & TX
Engine repairs	9,619 (19)	6,190 (58)	7,635 (21)	1.4	0.24	-
Gear repairs	7,776 (17)	5,814 (59)	8,569 (21)	1.7	0.18	-
General repairs	6,668 (16)	3,500 (53)	3,607 (20)	2.6	0.08	-
Hardware	10,689 (18)	1,785 (58)	2,886 (21)	12.0	0.00	LA & TX
Wages	50,896 (20)	33,909 (56)	40,712 (21)	3.2	0.04	-
Groceries	2,908 (5)	3,571 (29)	5,735 (2)	0.5	0.60	-
Other	3,297 (10)	2,150 (2)	5,009 (20)	1.4	0.27	-
TOTAL	159,143 (20)	80,748 (59)	127,895 (21)	13.0	0.00	AL & TX
Net Revenue	-5,444 (20)	5,920 (59)	5,306 (20)	0.7	0.47	-

* The numbers in parentheses are the number of respondents reporting the respective budget items. "p" is the level of significance.

Table 3. Costs and revenues from a survey of shrimp vessels in South Carolina, Georgia and East Florida during 1982.

Budget items	Mean values *			F ratio	p	Subsets
	S. Carolina	Georgia	E. Florida			
Total Revenue	80,560 (58)	80,429 (24)	132,000 (7)	5.9	0.00	SC & GA
Fixed Costs						
Hull repairs	2,864 (58)	1,777 (23)	6,084 (7)	5.9	0.00	SC & GA
Mortgage payment	5,965 (35)	2,746 (17)	15,459 (5)	11.7	0.00	-
Working capital	879 (7)	1,154 (7)	22,595 (1)	306.0	0.00	SC & GA
Insurance	4,964 (40)	2,755 (24)	6,064 (6)	15.9	0.00	SC & EF
Depreciation	9,876 (41)	8,648 (10)	18,388 (5)	3.4	0.04	SC & GA
Other	1,100 (46)	196 (23)	1,608 (5)	11.7	0.00	SC & EF
TOTAL	17,546 (59)	10,531 (24)	30,983 (9)	6.6	0.00	-
Variable Costs						
Fuel	16,206 (59)	15,948 (24)	41,378 (8)	38.1	0.00	SC & GA
Ice	2,548 (57)	1,869 (24)	4,633 (8)	17.9	0.00	-
Engine repairs	2,501 (58)	4,593 (24)	4,454 (8)	3.6	0.03	-
Gear repairs	2,817 (53)	2,139 (24)	8,262 (8)	18.4	0.00	SC & GA
General repairs	2,123 (52)	1,974 (24)	5,241 (6)	3.0	0.06	SC & GA
Hardware	1,300 (51)	1,151 (24)	5,714 (7)	12.2	0.00	SC & GA
Wages	15,438 (58)	19,345 (24)	30,439 (7)	6.6	0.00	SC & GA
Groceries	2,252 (23)	2,644 (24)	3,905 (5)	2.2	0.12	-
Other	3,523 (47)	348 (22)	2,577 (6)	13.9	0.00	SC & EF
TOTAL						
Net Revenue	15,061 (58)	19,914 (24)	-6,211 (8)	4.2	0.02	SC & GA

* The numbers in parentheses are the number of respondents reporting the respective budget items. "p" is the level of significance.

Table 4. Fishing activity for a survey of shrimp vessels in the Gulf of Mexico and south Atlantic regions during 1982.

Fishing Activity	Mean Values		F ratio	p	DF
	Gulf	So. Atlantic			
Offshore					
Trips	23.9 (97)	119.8 (88)	176.0	0.00	183
Days per Trip	11.7 (97)	1.9 (88)	226.2	0.00	183
Inshore					
Trips	36.5 (25)	32.9 (37)	0.2	0.66	60
Days per Trip	4.9 (24)	1.1 (36)	32.0	0.00	58
TOTAL					
Trips	32	132	156.1	0.00	187
Days Fished	199	187	0.8	0.37	186

Table 5. Fishing activity for a survey of shrimp vessels in Alabama, Louisiana and Texas during 1982.

Fishing Activity	Mean Values			F ratio	p	Subsets
	Alabama	Louisiana	Texas			
Offshore						
Trips	15.3 (18)	30.3 (58)	14.0 (21)	2.9	0.06	AL & TX
Days per Trip	13.7 (18)	9.7 (58)	15.8 (21)	11.5	0.00	AL & TX
Inshore						
Trips	36.3 (3)	41.4 (19)	6.3 (3)	0.8	0.44	-
Days per Trip	5.0 (3)	3.7 (18)	12.0 (3)	9.5	0.00	AL & LA
TOTAL						
Trips	20 (19)	42 (60)	15 (21)	4.4	0.01	AL & TX
Days Fished	225 (19)	181 (60)	225 (21)	6.0	0.00	AL & TX

Table 6. Fishing activity for a survey of shrimp vessels in South Carolina, Georgia and East Florida during 1982.

Fishing Activity	Mean Values			F ratio	p	Subsets
	S. Carolina	Georgia	E. FLorida			
Offshore						
Trips	140.7 (56)	68.0 (24)	128.8 (8)	15.0	0.00	SC & EF
Days per Trip	1.2 (56)	3.1 (24)	3.4 (8)	20.5	0.00	GA & EF
Inshore						
Trips	32.9 (37)	-	-	-	-	-
Days per Trip	-	-	-	-	-	-
TOTAL						
Trips	159 (57)	68 (24)	129 (8)	25.6	0.00	SC & EF
Days Fished	198 (57)	149 (24)	217 (8)	1.9	0.15	-

Table 7. Average costs and revenues by trip for shrimp vessels in the Gulf of Mexico and south Atlantic region for 1982.

	Mean Values *		F		
	Gulf of Mexico	So. Atlantic	ratio	p	DF
Variable cost per trip	6,614 (99)	640 (87)	112.8	0.00	184
Fixed cost per trip	2,255 (100)	175 (89)	66.9	0.00	187
Total revenue per trip	8,855 (98)	993 (87)	116.3	0.00	183
Net revenue per trip	-23 (98)	174 (87)	0.5	0.46	183

* The numbers in parentheses are the number of respondents reporting costs, revenue, and the number of trips. "p" is the level of significance and DF is the degrees of freedom.

Table 8. Average costs and revenues by trip for shrimp vessels in Alabama, Louisiana and Texas during 1982.

	Mean Values *			F		
	Alabama	Louisiana	Texas	ratio	p	Subsets
Variable cost per trip	9,437 (19)	4,878 (59)	8,939 (21)	9.7	0.00	AL & TX
Fixed cost per trip	3,269 (19)	1,796 (60)	2,648 (21)	3.2	0.04	AL & TX LA & TX
Total revenue per trip	12,531 (19)	6,534 (59)	12,209 (20)	10.7	0.00	AL & TX
Net revenue per trip	-175 (19)	-128 (59)	433 (20)	0.4	0.65	-

* The number in parentheses is the number of respondents that reported costs, revenue, and the number of trips. "p" is the level of significance.

Table 9. Average costs and revenues by trips for shrimp vessels in South Carolina, Georgia and East Florida during 1982.

	Mean Values *			F		
	S. Carolina	Georgia	E. Florida	ratio	p	Subsets
Variable cost per trip	269 (56)	1,080 (24)	1,880 (7)	31.0	0.00	-
Fixed cost per trip	111 (57)	219 (24)	499 (8)	17.0	0.00	-
Total revenue per trip	494 (56)	1,776 (24)	2,292 (7)	21.5	0.00	GA & EF
Net revenue per trip	85 (56)	477 (24)	-150 (7)	8.3	0.00	SC & EF

* The numbers in parentheses are the number of respondents reporting costs, revenue and trips. "p" is the level of significance.

Table 10. Average costs and revenues by trip for shrimp vessels in the southeastern U.S. for inshore and offshore fishing during 1982.

	Mean Values *			F		
	Offshore	Inshore	Both	ratio	p	Subsets
Variable cost per trip	5,168 (125)	1,244 (4)	1,044 (57)	17.3	0.00	2 & 3
Fixed cost per trip	1,743 (127)	78 (4)	335 (58)	11.5	0.00	-
Total revenue per trip	6,870 (125)	2,905 (4)	1,497 (56)	16.7	0.00	
Net revenue per trip	-48 (125)	1,583 (4)	226 (56)	1.9	0.00	

* The number in parentheses are the number of respondents reporting costs, revenue and trips. "p" is the level of significance.

Table 11. Average costs and revenues by trip for shrimp vessels in the Gulf of Mexico for inshore and offshore fishing during 1982.

	Mean Values *			F		
	Offshore	Inshore	Both	ratio	p	Subsets
Variable cost per trip	8,117 (74)	1,533 (3)	2,254 (22)	16.1	0.00	2 & 3
Fixed cost per trip	2,798 (75)	90 (3)	698 (22)	9.1	0.00	2 & 3
Total revenue per trip	10,682 (74)	3,679 (3)	3,154 (21)	14.3	0.00	2 & 3
Net revenue per trip	-237 (74)	2,067 (3)	432 (21)	1.7	0.18	-

* The numbers in parentheses are the number of respondents reporting costs, revenue and trips. "p" is the level of significance.

Table 12. Average costs and revenues by trip for vessels in the south Atlantic region for inshore and offshore fishing during 1982.

	Mean Values *			F		
	Offshore	Inshore	Both	ratio	p	Subsets
Variable cost per trip	889 (51)	413 (3)	284 (35)	7.2	0.00	1 & 2 or 2 & 3
Fixed cost per trip	221 (52)	41 (1)	113 (36)	3.1	0.05	-
Total revenue per trip	1,337 (51)	583 (1)	502 (35)	5.9	0.00	1 & 2 or 2 & 3
Net revenue per trip	224 (51)	129 (1)	102 (35)	0.7	0.52	-

* The numbers in parentheses are the number of respondents reporting costs, revenue and trips. "p" is the level of significance.

Table 13. Average costs and revenues by trip for shrimp vessels fishing in offshore areas from Alabama, Louisiana and Texas in 1982.

	Mean Values *			F		
	Alabama	Louisiana	Texas	ratio	p	Subsets
Variable cost per trip	10,945 (16)	6,493 (40)	9,210 (18)	5.7	0.01	AL & TX
Fixed cost per trip	3,816 (16)	2,484 (41)	2,6113 (18)	1.8	0.18	-
Total revenue per trip	14,436 (16)	8,451 (40)	12,3042 (18)	6.5	0.00	AL & TX
Net revenue per trip	-325 (16)	-524 (40)	482 (18)	0.9	0.42	-

* The numbers in parentheses are the number of respondents reporting costs, revenue and trips. "p" is the level of significance.