

**Table S1.** Chi-square test of association between independent variables and livelihood opportunities of fishermen

<b>Zonal analysis (all 15 communities combined)</b>					
<b>Variables</b>		<b>Chi-Square (<math>X^2</math>) Tests and symmetric measures</b>			
<b>Independent</b>	<b>Dependent</b>	<b><math>X^2</math></b>	<b>df</b>	<b>P-value</b>	<b>Cramer's V</b>
Age	* House ownership	300.861	3	<0.001**	0.239
	* Canoe ownership	83.448	3	<0.001**	0.126
	* Income sufficiency	80.885	3	<0.001**	0.124
Marital status	* House ownership	65.560	1	<0.001**	0.112
	* Income sufficiency	20.470	1	<0.001**	0.062
Level of education	* Perceived climate change impact on health	187.414	2	<0.001**	0.189
Household size	* Income sufficiency	227.062	2	<0.001**	0.208
Years of fishing	* House ownership	22.698	2	<0.001**	0.066
	* Canoe ownership	10.164	2	0.006**	0.044
	* Income sufficiency	19.729	2	<0.001**	0.061
	* Ease of securing loan from banks	35.491	2	<0.001**	0.082
<b>Elmina Individual community analysis</b>					
Age	* House ownership	—	—	—	—
	* Canoe ownership	21.253	3	<0.001**	0.246
	* Income sufficiency	—	—	—	—
<b>Fisher's Exact Test</b>					
Marital status	* House ownership	-	-	0.012**	0.125
	* Income sufficiency	-	-	0.021**	0.120
Level of education	* Perceived climate change impact on health	-	-	1.000	0.002
Household size	* Income sufficiency	31.942	2	<0.001**	0.302
Years of fishing	* House ownership	12.016	2	0.002**	0.185
	* Canoe ownership	6.078	2	0.048**	0.132
	* Income sufficiency	12.483	2	<0.001**	0.189
	* Ease of securing loan from banks	9.530	2	0.009**	0.165
<b>Cape Coast</b>					
Age	* House ownership	—	—	—	—
	* Canoe ownership	—	—	—	—
	* Income sufficiency	—	—	—	—
Marital status	* House ownership	—	—	—	—
	* Income sufficiency	—	—	—	—
Level of education	* Perceived climate change impact on health	—	—	—	—
Household size	* Income sufficiency	—	—	—	—
Years of fishing	* House ownership	—	—	—	—
	* Canoe ownership	25.927	2	<0.001**	0.272
	* Income sufficiency	—	—	—	—
	* Ease of securing loan from banks	—	—	—	—
<b>Moree</b>					
Age	* House ownership	25.531	3	<0.001**	0.270
	* Canoe ownership	—	—	—	—
	* Income sufficiency	—	—	—	—
Marital status	* House ownership	—	—	—	—
	* Income sufficiency	—	—	—	—
Level of education	* Perceived climate change impact on health	81.077	2	<0.001**	0.418

Household size	* Income sufficiency	—	—	—	—
Years of fishing	* House ownership	—	—	—	—
	* Canoe ownership	—	—	—	—
	* Income sufficiency	—	—	—	—
	* Ease of securing loan from banks	—	—	—	—
<b>Biriwa</b>					
Age	* House ownership	—	—	—	—
	* Canoe ownership	—	—	—	—
	* Income sufficiency	—	—	—	—
Marital status	* House ownership	—	—	—	—
	* Income sufficiency	—	—	—	—
Level of education	* Perceived climate change impact on health	30.110	2	<0.001**	0.293
Household size	* Income sufficiency	—	—	—	—
Years of fishing	* House ownership	—	—	—	—
	* Canoe ownership	—	—	—	—
	* Income sufficiency	—	—	—	—
	* Ease of securing loan from banks	—	—	—	—
<b>Apam</b>					
Age	* House ownership	278.330	3	<0.001**	0.892
	* Canoe ownership	137.948	3	<0.001**	0.628
	* Income sufficiency	209.471	3	<0.001**	0.774
Marital status	* House ownership	45.798	1	<0.001**	0.362
	* Income sufficiency	29.391	1	<0.001**	0.290
Level of education	* Perceived climate change impact on health	10.687	2	0.005**	0.175
Household size	* Income sufficiency	135.716	2	<0.001**	0.623
Years of fishing	* House ownership	128.731	2	<0.001**	0.606
	* Canoe ownership	195.103	2	<0.001**	0.747
	* Income sufficiency	119.534	2	<0.001**	0.584
	* Ease of securing loan from banks	137.304	2	<0.001**	0.626
<b>Gomoa Fetteh</b>					
Age	* House ownership	12.601	3	0.006**	0.190
	* Canoe ownership	—	—	—	—
	* Income sufficiency	—	—	—	—
Marital status	* House ownership	13.044	1	<0.001**	0.193
	* Income sufficiency	—	—	—	—
Level of education	* Perceived climate change impact on health	16.591	2	<0.001**	0.218
Household size	* Income sufficiency	—	—	—	—
Years of fishing	* House ownership	14.517	2	0.001**	0.204
	* Canoe ownership	—	—	—	—
	* Income sufficiency	—	—	—	—
	* Ease of securing loan from banks	8.614	2	0.013**	0.157
<b>Nyanyano</b>					
Age	* House ownership	24.752	3	<0.001**	0.266
	* Canoe ownership	—	—	—	—
	* Income sufficiency	—	—	—	—

Marital status	* House ownership	14.286	1	<0.001**	0.202
	* Income sufficiency	—	—	—	—
Level of education	* Perceived climate change impact on health	—	—	—	—
Household size	* Income sufficiency	—	—	—	—
Years of fishing	* House ownership	16.598	2	<0.001**	0.218
	* Canoe ownership	—	—	—	—
	* Income sufficiency	—	—	—	—
	* Ease of securing loan from banks	—	—	—	—
<b>Bortianor</b>					
Age	* House ownership	41.053	3	<0.001**	0.342
	* Canoe ownership	—	—	—	—
	* Income sufficiency	—	—	—	—
Marital status	* House ownership	12.562	1	<0.001**	0.189
	* Income sufficiency	-	-	0.626	0.064
Level of education	* Perceived climate change impact on health	—	—	—	—
Household size	* Income sufficiency	—	—	—	—
Years of fishing	* House ownership	—	—	—	—
	* Canoe ownership	—	—	—	—
	* Income sufficiency	—	—	—	—
	* Ease of securing loan from banks	—	—	—	—
<b>James Town</b>					
Age	* House ownership	—	—	—	—
	* Canoe ownership	—	—	—	—
	* Income sufficiency	—	—	—	—
Marital status	* House ownership	—	—	—	—
	* Income sufficiency	1.830	1	0.176	0.072
Level of education	* Perceived climate change impact on health	—	—	—	—
Household size	* Income sufficiency	6.898	2	0.032**	0.140
Years of fishing	* House ownership	—	—	—	—
	* Canoe ownership	7.012	2	0.030**	0.142
	* Income sufficiency	1.947	2	0.378	0.075
	* Ease of securing loan from banks	14.901	2	0.001**	0.206
<b>Teshie</b>					
Age	* House ownership	21.121	3	<0.001**	0.246
	* Canoe ownership	13.258	3	0.004**	0.195
	* Income sufficiency	—	—	—	—
Marital status	* House ownership	4.947	1	0.026**	0.119
	* Income sufficiency	-	-	0.148	0.087
Level of education	* Perceived climate change impact on health	16.586	2	<0.001**	0.218
Household size	* Income sufficiency	—	—	—	—
Years of fishing	* House ownership	10.861	2	0.004**	0.176
	* Canoe ownership	15.333	2	<0.001**	0.209
	* Income sufficiency	—	—	—	—
	* Ease of securing loan from banks	12.071	2	0.002**	0.186
<b>Azizanya</b>					

Age	* House ownership	—	—	—	—
	* Canoe ownership	—	—	—	—
	* Income sufficiency	—	—	—	—
Marital status	* House ownership	-	-	0.588	0.054
	* Income sufficiency	—	—	—	—
Level of education	* Perceived climate change impact on health	22.474	1	<0.001**	0.253
Household size	* Income sufficiency	—	—	—	—
Years of fishing	* House ownership	22.805	2	<0.001**	0.255
	* Canoe ownership	5.789	2	0.055	0.129
	* Income sufficiency	—	—	—	—
	* Ease of securing loan from banks	—	—	—	—
<b>Vodza</b>					
Age	* House ownership	21.981	3	<0.001**	0.251
	* Canoe ownership	9.316	3	0.025**	0.163
	* Income sufficiency	—	—	—	—
Marital status	* House ownership	0.087	1	0.768	0.016
	* Income sufficiency	—	—	—	—
Level of education	* Perceived climate change impact on health	—	—	—	—
Household size	* Income sufficiency	—	—	—	—
Years of fishing	* House ownership	3.329	2	0.189	0.098
	* Canoe ownership	26.316	2	<0.001**	0.274
	* Income sufficiency	—	—	—	—
	* Ease of securing loan from banks	—	—	—	—
<b>Adina</b>					
Age	* House ownership	—	—	—	—
	* Canoe ownership	—	—	—	—
	* Income sufficiency	—	—	—	—
Marital status	* House ownership	0.563	1	0.453	0.040
	* Income sufficiency	—	—	—	—
Level of education	* Perceived climate change impact on health	—	—	—	—
Household size	* Income sufficiency	—	—	—	—
Years of fishing	* House ownership	5.607	2	0.061	0.127
	* Canoe ownership	23.503	2	<0.001**	0.259
	* Income sufficiency	—	—	—	—
	* Ease of securing loan from banks	16.483	2	<0.001**	0.217

**Note:** \*\*significant at 0.05, —could not be used in the analysis as 1 or more cells had an expected count less than 5 or the variable appeared to be constant, —statistics were computed using the Fisher's Exact Tests. No statistics were computed for the communities of Dzita and Agavedzi as 1 or more cells had an expected count less than 5 or the variables appeared to be constant for all the analysis.