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Climate Variability Perceptions and Choice of Coping Strategies among Artisanal Fisher Folks in Ondo State, Nigeria

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Abstract **Original Research Article**

The study examines perceptions and climate variability coping strategies among artisanal fisher folks in Ondo state, Nigeria. One hundred twenty respondents were selected through a two stage sampling procedure, and cross-sectional data was collected using structured questionnaires. Descriptive statistics and the multinomial logit (MNL) model were employed for analysis. The results show that 59% of respondents noted lower fish catch, accompanied by 68.33% who noted increased costs of fishing owing to greater distances and prolonged hours spent on fishing. Climate variability had an inconsistent effect on the fishing duration, 57% suggested it increased while 47% suggested it decreased. In addition, 56.33% reduced their fishing days because of adverse climatic conditions, and 69.67% noted reduced lifespan of the fishing aids. The gear longevity was greatly reduced. 62.67% reported no changes in conflicts at the sites, while 37.33% reported increased conflicts. As a reaction, fisher folks employed various coping mechanisms which include staying longer at expeditions (70.33%), increasing the distance to the fishing area (70.33%), moving to new sites (37.67%), changing the fishing period (24.33%), changing the fishing gear (16%), and taking up other jobs (40%). The MNL model showed nine of the proposed coping strategy factors were significant, with gender being the only non-significant factor. Shifting fishing periods emerged as the most preferred strategy. Age negatively affected household migration and increasing distance to the new location, while more household members, higher education levels, and increased fishing experience aided more labour intensive approaches. Additionally, canoe dimensions, access to technology, and contact with extension services influenced choices regarding coping strategies. Indigenous fisher folks moved the least due to environmental familiarity. The study asserts that because climate variability poses significant challenges to the livelihood of artisanal fishers, therefore, to enhance resilience, policies must prioritize improved access to education, modern technologies, extension services, climate information, and sustainable fishing practices, while promoting effective governance.

Keywords: Climate Variability, Coping Strategies, Artisanal Fisher Folks, Fishing Activities, Multinomial Logit Model, Sustainable Fishing Practices

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1.0 INTRODUCTION

Climate variability is the term used to describe the alterations and variations in climatic patterns across a certain area at a given point in time. The phenomenon has become a significant concern worldwide, impacting various sectors and livelihoods, including agriculture and fisheries (IPCC, 2014). Climate variability is now considered by many in the scientific and political communities globally to be one of the most pressing challenges facing humankind. This is because of its wide impacts on human socioeconomic activities. Specifically, climate variability has been shown to have effects on ecosystems, water resources, food, gender, health, coastal zones, industrial activities and human growth in general. According to (DFID, 2004) Climate variability has considerably impeded Africa's development and it is expected that climate variability will increase with climate extremes becoming more intense or more frequent.

In General climate variability and change is perceived by fisher folks as a result of the changes in temperature and rainfall (Bewket, 2012, Limantol, *et al*.,2016, 6–14); wind changes (Barrucand *et al* 2017, Esham and Garforth, 2013); extreme climate events such as floods and droughts (Abdur Rashid Sarker *et al.*, 2013, Esham and Garforth, 2013); and a shift in the seasons (Kurniawati, 2012). These

impacts can have far-reaching consequences for both commercial and subsistence fishing communities. It can equally have significant impacts on fisheries worldwide, affecting the abundance, distribution, and productivity of fish populations.

Several patterns in the variability of the climate have been observed in southwest Nigeria in recent years. Changes in temperature, precipitation patterns, and extreme weather phenomena are characteristics of these trends. Oke et al., (2014), demonstrated a warming trend in the area with higher average temperatures observed both during the day and at night, and (Ilesanmi et al., 2018), discovered that the frequency and severity of heat waves had also risen in southwest Nigeria. The frequency and intensity of floods have also increased, according to Ajibade et al. (2019). There is also evidence of increasing rainfall intensity and severe precipitation events throughout the wet season (Ologunorisa et al., 2018), whereas Odekunle et al., (2017) discovered a rise in the duration of dry spells. All of these have the potential to cause serious consequences for agriculture, human health, ecosystems, water resources, and food security in such region that rely heavily on artisanal fishing as a major source of livelihood.

Specifically, these climate variations pose considerable challenges to the livelihoods and well-being of local communities in Southwestern Nigeria coast line, Artisanal fisher folks in this areas are highly susceptible to the effects of climate variability and change, including changes in temperature, rainfall patterns, and sea-level rise, which can disrupt fishing activities and productivity (Nnimmo & Nelson, 2017). The severity of the future impacts of climate change is largely determined by peoples' present ability and action to adapt (Wolf and Moser 2011). Adaptation is particularly important in agriculture, given the climate sensitivity of the sector (Smit and Skinner 2002; Haden et al., 2012; Niang et al., 2014). To secure agricultural productivity and rural livelihoods, farmers need to adapt their farming practices to present and future impacts of climate change. However, the relationship between perception of and adaptation to climate change is not straightforward (Wiid and Ziervogel, 2012). Understanding the motivating factors leading to adaptive behaviour is key to promoting climate change adaptation to secure fish production and fisher folks' livelihoods. The purpose of this study is to examine the trends, perceptions, and coping strategies adopted by artisanal fish farmers in response to climate variability in Southwestern Nigeria. By understanding these aspects, policymakers and practitioners can develop effective adaptation and mitigation measures to enhance the resilience of fish farming systems and the livelihoods of those dependent on them.

2.0 MATERIAL AND METHOD

2.1 The Study Area

The study was conducted in the coastal areas of Ondo State, Nigeria. The coastal area lies within Latitude 5^0 50'N - 6^0 09'N and Longitude 4^0 45'E - 5^0 05'E and is largely found in the Ilaje Local Government Area (LGA) of the state. Ilaje LGA is located towards the extreme southern part of the state and shares boundaries with the Ikales of Okitipupa and Ese-Odo LGAs in the north; the Ijebus of Ijebu- Waterside LGA of Ogun state in the west; the Apoi and Arogbo Ijaws in the north-east, as well as the Itsekiris of Delta state on the eastern flank, while the Atlantic Ocean formed the southern boundary (Adelaja et al., 2018).

2.2 Method of Data Collection

A multi stage sampling procedure was used to select respondents for the study. First, six major fishing communities, Ayetoro, Ugbonla, Awoye, Igbokoda , Oboto and Idi - ogba were purposively selected based on the population and aggregation of fishing families, geographic distribution, catch volume and species diversities of the fish catches in the area. Second stage was the random selection of 20 respondents from each of the selected fishing communities. Equal numbers of respondents were selected from each of the communities because Taherdoost (2016) posits that, the formula for determining sample size in the population has virtually no effect on how well the sample is likely to describe the population. Information related to sex, age, marital status, household size, educational background, years of experience, method of fishing, gears type in use, preferred fishing period, size of fishing fleet and the daily income range, their perception about climate variability, its effects on their fishing activities and their coping strategies was obtained through guided interview. In all, a total of 120 respondents were interviewed for the study.

3.0 RESULT AND DISCUSSIONS

3.1 Socioeconomic Characteristics of the Respondents

The socio-economic characteristics of respondents is as presented in the table 1, from the table, it shows that artisanal fishing is a male-dominated in the study area, with 89% of respondents being male, the finding aligns with FAO, (2022) which found male predominance in small-scale fisheries in developing countries. Marital status data shows that the majority (77%) are married, which may reflect a stable family structure, often associated with household labor contributions to fishing activities (Allison & Ellis, 2001). The age distribution reveals that most respondents fall within the productive age bracket of 31–50 years (67.34%), with a mean age of approximately 41 years (±10.69), signifying a mature and experienced labor force. The mean household size is 7.88 (±1.65), with 47% of respondents having between 6–10 household members, suggesting a potential for labor-intensive fishing and related activities, as larger households often provide unpaid family labor (Ellis, 2000). Educational attainment is relatively low, with only 5.67% attaining tertiary education and the majority having only primary (39.67%) or secondary education (30%), which may influence their adoption of innovative fishing practices or engagement in value addition. In terms of fishing experience, the average

is 18.4 years (±0.89), with most respondents (71%) having between 11–30 years of experience, indicating a high level of skill and knowledge in the sector. Finally, income distribution from fishing activities shows a mean monthly income of ₦88,646.67 (±₦114.56), with 29.33% earning between ₦91,000 and ₦110,000, highlighting fishing as a relatively viable livelihood source. These findings collectively underscore the socio-economic resilience and structural characteristics of artisanal fishers, with implications for policy and development interventions in coastal and inland fishing communities.

Table 1: Socio Economic Characteristics of the Respondents N=120

Characteristics	Categories	Frequencies	Percentage	Mean
Sex	Male	107	89.00	
	Female	13	11.00	
Marital Status	Single	9	7.67	
	Married	92	77.00	
	Divorce	5	4.33	
	Widowed	13	11.00	
Age of Respondents	≤ 30	19	15.67	40.97±10.69
	31 – 40	44	36.67	
	41 – 50	37	30.67	
	51 – 60	14	11.33	
	> 60	7	5.67	
Household size	≤ 5	35	29.00	7.88±1.65
	6 – 10	56	47.00	
	11– 15	26	21.33	
	> 15	3	2.67	
Educational status	No formal education	20	17.00	
	Adult education	9	7.67	
	Primary education	48	39.67	
	Secondary education	36	30.00	
	Tertiary Education	7	5.67	
Fishing Experience	≤10	3	2.33	18.40±0.89
	11-20	47	39.00	
	21-30	38	32.00	
	>30	10	8.67	
Monthly Income from Fishing (₦)	≤ 50000	4	3.67	88646.67± 114.56
	51000 – 70000	13	10.67	
	71000 – 90000	20	17.00	
	91000 – 110000	35	29.33	
	111000 – 130000	28	23.67	
	131000 – 150000	11	9.33	
	>150000	8	6.33	

Source; Field Survey, 2024

3.2 Fishing Characteristics of the Respondents

Table 2 shows the results of fishing characteristics of the respondents. From the table, majority (56%) of the fisher folks travel between 1.1 and 2.0 km to fishing sites, with a mean distance of 1.80 km (±0.29), indicating proximity to water bodies, which is essential for reducing operational costs and time (Béné et al., 2007). Concerning fishing equipment, over half (51.67%) utilize dugout canoes, a traditional but cost-effective mode of transport in artisanal fisheries, while 37.33% use wooden canoes, reflecting variability in resource ownership and investment capacity. Fishing frequency reveals that 73% embark on trips three to four times weekly, implying a high level of dependence on fishing for livelihood and sustenance. Diversification of income sources is evident, with 47.33% also engaged in crop farming, followed by net mending (29.33%), transport (28.33%), and manual work (23.33%). This aligns with Ellis (2000), who noted that livelihood diversification is a common strategy among rural households to mitigate risk and enhance income

stability. Despite the significance of extension services in enhancing productivity and resource management, only 21.67% of respondents reported access, underscoring a major institutional gap. This limited access may hinder knowledge transfer, the adoption of sustainable practices, and access to market or credit opportunities, thereby constraining livelihood improvement efforts (Davis et al., 2012). Collectively, these findings underscore the interplay between geographic, technological, and institutional factors in shaping the livelihood strategies of artisanal fishers.

Table 2: Fishing characteristics of the Respondents N=120

Characteristics	Categories	Frequencies	Percentage	Mean
Distance covered for fishing (km)	≤ 1.0	20	16.33	1.80±0.29
	1.1 – 2.0	67	56.00	
	2.1 – 3.0	18	14.67	
	3.1 – 4.0	10	8.00	
	> 4.0	6	5.00	
Types of canoe used	Dugout	62	51.67	
	Wooden	45	37.33	
	Both	13	11.00	
Fishing trips/week	Twice	28	23.67	
	Thrice	47	39.33	
	Four times	41	34.33	
	Five times	3	2.67	
*Other source(s) of income	Crop farming	57	47.33	
	Manual work	28	23.33	
	Remittance	15	12.33	
	Net mending	35	29.33	
	Transport	34	28.33	
Access to Extension Service	Yes	26	21.67	
	No	94	78.33	

Source; Field Survey, 2024

*total > sample size, multiple answers recorded.

3.3 Perceived Effects of the observed climate variability on fishing activities

The respondents' perceived effects of climate variability on their fishing activities is as presented in Table 3. According to Trotman (2002), climatic variation may result to changes in fishing activities that in turn prompts variability in fish-catch. The prevailing climate in a particular season of a particular year may differ from what it was in that same season in another year, with corresponding consequences for fishing activities and certain fish-stock sizes. Table 4.8 presents a summary of respondents' perceived effects of climate variability on their fishing activities. From Table 10, majority (59%) of the respondents indicated that the observed climate variability reduce fish catch, while 27.33% observed no effect on fish catch as a result of the observed variation in climate, however 13.67% of the respondents observed increase in fish catch as a result of the observed variability in climate. As regards fishing cost, majority (68.33%) of the respondents maintained that the observed variation in climate did increase the cost of fishing in terms of distance covered and the duration they have to stay to have a reasonable level of catch, while 31.67% is of the opinion that the observed variation does not have any effect on their fishing cost. The effect of climate variability on fishing duration shows that 47% of respondents reported a reduction in the duration of fishing per trip, 34% said the

observed climate variability has no effect on the duration of fishing per trip, and 57% reported an increase in the duration of fishing per trip because of climate variability.

The majority (56.33 %) of respondents indicated that observed climate variability reduced the frequency of their fishing trips, possibly due to an increase in cases of unfavorable weather effects, while 31.67 % observed no effect on fishing trips because of observed climate variation, and 12 % observed an increase in fishing trips because of observed climate variation.

The majority (60.33%) of the respondents reported travelling longer distances to fishing sites because of observed climate variability; this could be as result of dwindling fish catch in the nearby shores due to the effect of climate variability. Also, 13.67% and 26% reported no change in their distance to fishing sites and a reduction of distance to their fishing sites respectively. The reduction in distance to fishing site may be due to the fear of unfriendly climate conditions as they move deeper into the sea. Majority (69.67%) of the respondents reported reduction in the life span of their fishing gears as a result of climate variability while 30% reported no change in the life span of fishing gears as a result of the observed climate variability. However, Trotman (2002), have shown extreme weather conditions such as tropical cyclones can be very damaging to the fishery industry as they cause destruction on the fishing gear and fishing vessels. As expected due to changes that often arise in fish stock distribution due to changes in climate and weather events, conflicts may arise over fishing sites, however, 62.67% of the respondents reported that the observed variability in climate does not have effect on conflicts over fishing sites but 37.33% reported increase in conflicts over fishing territories.

Table 3: Perceived Effects of the observed climate variability on fishing activities

Fishing activities	**Increased**	**No effect**	**Reduced**
Fish catch	41(13.67)	82(27.33)	177(59.00)
Fishing cost	205(68.33)	95(31.67)	00(0.00)
Fishing duration per trip	57(19.00)	102(34.00)	141(47.00)
Frequency of fishing trips	36(12.00)	95(31.67)	169(56.33)
Distance to fishing sites	181(60.33)	41(13.67)	78(26.00)
Life span of fishing equipment	00(0.00)	91(30.33)	209(69.67)
Conflicts on fishing sites	112(37.33)	188(62.67)	00(0.00)
Source: Computed from the field Survey Data, 2024		Percentages in bracket.	

3.4 Climate Variability Coping Strategies

This section deals with the evaluation of coping strategies adopted by the fisher folks in the study area to mitigate the effects of climate variability on fish output. Coping strategy is generally defined as the adjustment in socio economic system in response to observed or perceived variation in climatic stimuli and their effects in order to alleviate adverse effects and take advantages of new opportunities.

In this study, coping strategies refers to a set of actions taken by fisher folks in response to observed or in anticipation of adverse effect of climate variability on their fishing activities in order to enhanced or maintain sustainable fish output. The result in Table 4.17 shows that the fisher folk do employ various strategies to cope with the effects of climate variability on their fishing activities. Prominent among the strategies adopted is that the fisher folks (70.33%) do stay longer now on fishing expeditions than before with the expectation of catching more fish. Other coping strategies employed are, relocation to other fishing sites (37.67%), Increase fishing location distance (70.33%), shifting fishing periods (24.33%), changing fishing gears (16%) and shifting to alternative livelihood (40%). Only about 3.60 of the sampled fisher folks did not adopt any coping strategy.

Table 4: Climate Variability Coping Strategies

Coping strategy	*** Frequency**	**Percentage**
Fishing for longer time	124	41.33
Relocate to other fishing site	113	37.67
Increase fishing location distance	211	70.33
Shifting fishing times	73	24.33
Change of fishing gears	48	16.00
Shift to alternative livelihoods	120	40.00

Source: Computed from Field Survey Data, 2024

* Total > Total sample; Multiple responses recorded.

3.5 Factors Influencing the Choice of Preferred Coping Strategies

This section presents the empirical results of the marginal effects of the multinomial logit model (MNL) of factors influencing the choice of preferred climate variability coping strategies used by the fisher folks in the study area. Appendix 8 present the estimated coefficients of the MNL while the results of the marginal analysis of the MNL is presented in Table 4.18.

The results of the estimated marginal effects of the MNL model of factors influencing the choice of preferred coping strategies in table 4.18 showed that nine out of the ten variables included in the model were statistically significant in determining the preferred choice of climate variability coping strategies among the studied fisher folks. Only gender was not significant in determining the preferred choice of coping strategy probably because fishing is dominated by male gender in the study area. The application of MNL specification to the data set for modelling the preferred climate variability coping strategies behaviour of the fisher folks is justified by the significance of the estimated model at 1% level of significance indicating that the model has high explanatory power.

From table 4.18, it shows that the probability of choosing shifting fishing periods as a coping strategy is the highest (25.9%), followed by the probabilities of choosing fishing further away (24.2%) and changing fishing gears (17.3%). The probability of not adopting any coping strategy is least as expected (4.3%). This findings support the assertions of Allison *et al.,* (2001) that fisher folks have historically developed various means of coping with the vagaries of weather-induced uncertainty associated with fishing.

Age was significant (10%) and negative for the choice of relocating to other fishing site significant (5%) and negative for fishing further away indicating that as the fisher folks grow old, their likelihood of relocating to other fishing sites and the probability to increase fishing location distance decreases. However, age is equally significant (1%) and positive for non-use of any coping strategy. This implies that as the fisher folks grow old there is strong likelihood of not adopting any coping strategy. This is in line with the findings of Ng'ombe and Kalinda (2015) that young farmers are more interested in trying out new technologies. This is attributed to their risk taking characters unlike the older ones but in contrast with the findings of Gbetibouo (2009) that older farmers have higher probability of perceiving and adapting to climate issues because of their ability to assess attributes of modern technologies.

Households working force was significant (5%) for fishing for longer time, shifting fishing periods (10%) and changing fishing gears (1%) and positive for all the three coping strategies. This shows that any increase in the households working force will lead to increase in likelihood of adopting these coping strategies. The findings is similar to the findings of Donye *et al.,* (2015) which stated that large household size do positively influence labour intensive technologies.

The coefficient of fishing experience is significant and positively related to shifting fishing periods (1%) and changing fishing gear (1%). This implies that a unit change in years of fishing experience will increase the likelihood of using shifting fishing periods by 0.5% and changing fishing gear by 22.1% as coping strategies respectively among the fisher folks. Equally, the coefficient of fishing experience is significant (5%) but negatively related to shifting to alternative livelihood meaning that a year increment in fishing experience will reduce the likelihood of shifting to alternative livelihood as a coping strategy by 0.7%. This is in contrast with the findings of Nhemachena and Hassan (2007) that experienced farmers do have an increased likelihood of using portfolio diversification to spread risk when facing climate variability. This may be because experienced fisher folks have developed high skills in fishing technique and management over time that made them understand what to do at any given period of time and situations to remain in business.

The coefficient of education is significant and positively related to shifting fishing periods (5%) and shifting to alternative livelihood (10%). This implies that a unit change in years of education will increase the likelihood of using shifting fishing periods by 2.5% and shifting to alternative livelihood by 0.3% as coping strategies respectively among the fisher folks. Equally, the coefficient of education is significant (5%) but negatively related to non-use of coping strategy. This indicate that a year increment in education will reduce the likelihood of non-use of coping strategy by 1.3%. This is in line with findings of Ndambiri *et al.,*(2010) who noted that higher education would enhance farmers ability to receive, decipher, and comprehend information relevant to making innovative decisions in their enterprise. Education attainment by the respondents largely may determine the strategies they use to solve perceived production problems, adopt innovations that increase their productivity.

The coefficient of type of technology used by the fisher folks indicating whether they use manual propelled fishing boat or outboard engine boat is significant and positively related to fishing further away (10%). This implies that using fishing boat with outboard engine will increase the likelihood of fishing further away from the shore by 7.5%. This is obvious because the use of outboard engine will definitely enhance travelling further into the sea with ease. In addition, the coefficient of type of technology used is significant (10%) but negatively related to non-use of coping strategy meaning using fishing boat with outboard engine will reduce the likelihood of non-use of coping strategy by 6.7%. However, canoe size has a positive significant effect (5%) on the choice of fishing for longer time as coping strategy. This implies the use of bigger size fishing canoe will increase the likelihood of choosing fishing for longer time as coping strategy by 0.9% among the fisher folks.

Crew size has a negative significant relationship with the likelihood of adopting fishing for longer time (5%) and fishing further away from the shore (5%) as coping strategy. This shows that a unit increase in fishing crew size will reduce the likelihood of choosing fishing for longer time as a coping strategy by 0.1%, and equally reduce probability of increasing fishing location distance from the shore as coping strategy by 0.8%. However, crew size was positive and significant (10%) with the likelihood

of adopting changing fishing gears as a coping strategy. This implies that a unit increase in crew size will increase the likelihood of changing fishing gears as coping strategy by 1.2%.

The number of extension contact with the fisher folks was positive and significantly influenced the choice of shifting fishing periods (10%) and shift to alternative livelihood (5%) as methods of coping with climate variability effects. This indicates that a unit increase the number of extension contact will increase the likelihood of choosing option of shifting fishing periods by 0.2% and that of shifting to alternative livelihood by 6.5%. Agricultural extension agents provide different information and alternatives on prevailing situations which affect farmers differently, and farmers are expected to choose an option that suit best (Baethgen *et al.*, 2003). According to Yirga (2007), the number of extension contacts with extension officers is a proxy measure for access to information among farmers and this contributes to awareness and subsequent adoption of new technologies.

The coefficient of residential status had a negative significant influence on the likelihood of a fisher folk relocating to other fishing site (1%) and Increase fishing location distance (5%) as a measure of coping with the effect of climate variability among the studied fisher folks. This indicates that the likelihood of native fisher folks relocating or increasing fishing location distance from their community is reduced by 0.6% and 4.3% respectively. This is in line with the findings of Colding *et al.*, (2003) that the natives do have a lot of knowledge regarding environment they live as they have been long living in these environments, doing a lot of trials and error on different practices. This would help them in determining appropriate coping strategy within their environment.

Table 5: Marginal Effect of Factors Influencing the Preferred Choice of Coping Strategies

Variables	Fishing for longer time	Relocate to other fishing site fishing	Increase fishing location distance	Shifting fishing periods	Changing fishing gears	Shift to alternative livelihood	No coping strategy
Age	0.020 (0.130)	-0.02* (0.094)	-0.024** (0.029)	- 0.018 (0.501)	0.021 (0.318)	0.001 (0.968)	0.027*** (0.009)
Gender	-0.046 (0.406)	-0.143 (0.071)	0.073 (0.346)	-0.011 (0.899)	0.085 (0.154)	0.054 (0.340)	-0.012 (0.791)
HH working force	0.021** (0.011)	0.023 (0.114)	-0.020 (0.248)	0.007* (0.087)	0.038*** (0.009)	0.018 (0.162)	-0.011 (0.135)
Fishing Experience	-0.002 (0.233)	0.001 (0.502)	-0.004 (0.990)	0.005 *** (0.007)	0.221*** (0.001)	-0.007** (0.018)	0.002 (0.126)
Education	0.006 (0.659)	0.018 (0.191)	0.003 (0.901)	0.025** (0.039)	-0.036 (0.114)	0.003* (0.081)	-0.013*** (0.002)
Types of Tech	-0.091 (0.218)	0.090 (0.162)	0.075 * (0.050)	0.235 (0.112)	0.085 (0.064)	-0.141 (0.263)	-0.067* (0.055)
Canoe Size	0.009** (0.018)	-0.029 (0.114)	0.021 (0.461)	-0.018 0.557	0.001 0.978	0.028 (0.196)	-0.012 (0.318)
Crew	-0.001** (0.027)	0.013 (0.440)	-0.008** (0.017)	-0.007 (0.807)	0.012* (0.042)	-0.012 0.558	0.004 (0.673)
Extension contact	0.011 (0.762)	0.038 (0.380)	-0.038 (0.537)	0.002* (0.080)	-0.074 (0.124)	0.065** (0.045)	-0.003 (0.906)
Residential status	0.007 (0.806)	-0.014*** (0.006)	-0.010 * (0.043)	-0.023 (0.676)	0.022 0.624	0.029 0.478	-0.012 (0.625)
Probability	0.067	0.075	0.242	0.259	0.173	0.141	0.043

Source: Data Analysis, 2024

*** Significant at 1% ** significant at 5% *significant at 10%

LR $chi^2(60)$ = 78.73

Prob > chi2 = 0.0008

Log likelihood = -513.8716

Pseudo R^2 = 0.0712

4.0 CONCLUSION

The study explores fisher folks' perceptions of climate variability impacts on fishing activities. A majority reported reduced fish catch, increased fishing costs, and longer travel distances. Extreme weather affected fishing duration, frequency of trips, and gear lifespan. Despite reduced fish availability, most did not experience increased conflict over fishing sites. Common adaptation strategies included longer expeditions, traveling farther, relocating, or shifting to alternative livelihoods. The result of the MNL model show that nine out of ten variables significantly influence fisher folks' coping strategies, with gender being non-significant. The model's significance at 1% confirms its explanatory power. Shifting fishing periods (25.9%) is the most preferred strategy, while non-adoption is the least (4.3%). Age negatively affects relocation and increasing fishing distance but positively influences non-adoption. Household workforce size and fishing experience positively impact labor-intensive strategies like shifting fishing periods and changing gears. Education increases the likelihood of shifting fishing periods and alternative livelihoods while reducing non-adoption. Outboard engine use enhances fishing further away, while canoe size affects fishing duration. Crew size negatively influences fishing time and distance but

positively affects gear changes. Extension contacts boost shifting fishing periods and alternative livelihoods. Native fisher folks are less likely to relocate, relying on local environmental knowledge.

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