TS218

NUT FOOD CONSUMPTION AS A SIGNIFICANT PREDICTOR OF FEMALE COASTAL COMMUNITIES WITH CLIMATE CHANGE EXPERIENCE (CCE) IN SABAK BERNAM, SELANGOR, MALAYSIA

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OUTLINES

1. Introduction
2. Objectives
3. Methods
4. Findings
5. Conclusion

Survey session engaging male vulnerable workers, Bagan Nakhoda Omar, Sabak Bernam (25 January 2025)

INTRODUCTION

Survey session engaging male vulnerable workers, Bagan Nakhoda Omar, Sabak Bernam (25 January 2025)

- **Climate change**
  - long-term shifts in weather & temperature, mainly caused by humans.
- **Coastal areas face higher risks of** (Ehsan et al., 2022):
  - Extreme weather events
  - Coastal erosion
  - Saltwater intrusion
- **The vulnerable are the most affected groups** (Badari & Selamat, 2024; Zainalaludin et al., 2023;2022; Hossain & Majumder, 2018):
  - Women, children, infants
  - Extremely poor households
  - Farmers, fishermen, daily wage workers
  - Minorities, elderly, and people with disabilities
- Their ability to cope is strongly hampered by the oppressive local power systems within society, especially women (Niumai, 2025).

INTRODUCTION

- **Key impact of climate change:**
  - Threatens **food security** & livelihoods in coastal areas
- **Climate change + gender inequality (**Moon, 2024).
  - more food insecurity among women.
  - highlights the need to study **dietary patterns** (e.g., nut consumption)

Survey session with female day-pay workers, Bagan Nakhoda Omar, Sabak Bernam (24 January 2025)

INTRODUCTION

- Gender Differences in Food Intake: Rural Peninsular Malaysia (Zainal Badari et al., 2012)
  - Women in rural Peninsular Malaysia had higher food intake compared to men
  - **intake was still low** in terms of meeting **healthy dietary standards**
- Dietary Patterns & Food Intake in Rural Peninsular Malaysia
  - The dietary pattern was measured by using the Food Consumption Score (FCS) (World Food Program, 2024).
  - FCS is a reliable measure of food security
  - Strongly correlated with other proxy indicators

Survey session with female vulnerable workers, Bagan Nakhoda Omar, Sabak Bernam (24 January 2025)

Survey with Able-body workers, Bagan Nakhoda Omar, Sabak Bernam (24 January 2025)

OBJECTIVES

1. To measure the Food Consumption Score (FCS) among respondents with CCE by sex disagregation.

1. To identify potential linkages between nutritional intake and perceptions of, and adaptive capacity to, climate change impacts.

METHODS

- **Location:** Sabak Bernam, a coastal district in Selangor state located at Malacca Strait of Peninsular Malaysia.
- **Respondents**: Coastal communities who are assumed vulnerable to climate change impact
- **Equal Distribution** between male and female – Table 1
- Malaysia **PLI=RM2589** (USD613.58) was used to classify the poor category of household income

Study L5ocation

METHODS

Table 1: Sampling Table

District	Sabak		Pasir Panjang		Sungai Panjang		Bagan Nakhoda Omar		Panchang Bedena		Total
Gender	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	
Sabak Bernam	30	30	30	30	30	30	30	30	30	30	300

METHODS

Table 2: Food Consumption Score (FCS) and Food Group Weight

Food group	Frequency score*	Weight
Cereals, grains, roots, and tubers	0-7	2
Meat, poultry, fish, and eggs	0-7	4
Legumes/pulses, nuts, and seeds	0-7	3
Milk and other dairy products	0-7	4
Vegetables	0-7	1
Fruits	0-7	1
Oils/fat/butter	0-7	0.5
Sugar or sweets	0-7	0.5
Condiments	0-7	0

*0=not taken at all/week, 7=taken every day/week

Source: World Food Program (2024).

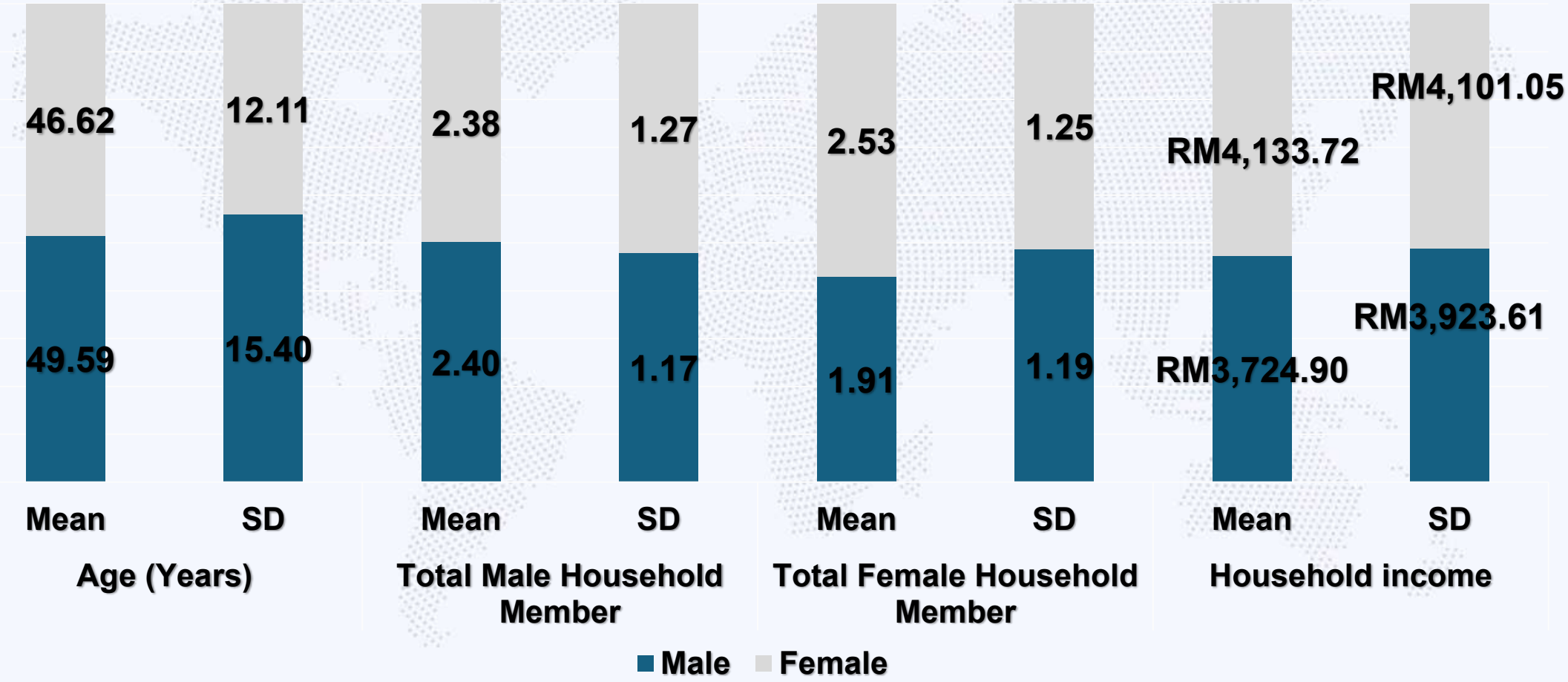
Table 3: Food Consumption Score (FCS) Thresholds

FCS thresholds	Range
Poor food consumption	0-28
Borderline food consumption	28.5-42.0
Acceptable food consumption	42.5-112.0

METHODS

- **Data collection:** n=274 data collected in Jan 2025 (50% males and 50% females)
  - n=274 (46.4%) poor households (household income ≤ than USD613.58 a month) reported in this paper (53.7% males and 46.3% females)
  - n=238 (86.86%) reported experiencing climate change in this paper
- **Data analysis:** A Binary Logistic Regression (BLR) Model was used to test the Following Hypotheses:
  - Ho1, no significant FCS predicts **all** respondents with CCE;
  - Ho2, no significant FCS predicts **male** respondents with CCE;
  - Ho3, no significant FCS predicts **female** respondents with CCE.

FINDINGS


46.62
49.59
12.11
15.40
2.38
2.40
1.27
1.17
2.53
1.91
1.25
1.19
RM4,133.72
RM3,724.90
RM4,101.05
RM3,923.61
Mean
SD
Mean
SD
Mean
SD
Mean
SD
Age (Years)
Total Male Household Member
Total Female Household Member
Household income
Male
Female

FINDINGS

Table 4: FCS of Respondents (N=274)

Food Groups	Mean Score	Standard Deviation
Cereals, grains, roots, and tubers	13.12	2.87
Legumes/pulses, nuts, and seeds	3.75	5.62
Milk and other dairy products	10.64	11.49
Meat, fish, and eggs	24.71	7.07
Vegetables and leaves	5.73	2.16
Fruits	3.66	2.54
Oils	2.86	1.17
Sugar	2.73	1.17
Condiments	0.00	0.00

Table 5: FCS Thresholds of Respondents (*n*=274)

FCS thresholds	Range score	Frequency (n)	Percent (%)
Poor food consumption	0-28	16	5.8
Borderline food consumption	28.5-42.0	12	4.4
Acceptable food consumption	42.5-112.0	246	89.8

FINDINGS

Table 6: Wald Chi-Square (General Model) (respondent with CCE =1; respondent(without CCE =0)

Type of food:-	B	S.E.	Wald	df	Sig.	Exp(B)
Cereals, grains, roots, and tubers	-.029	.081	.128	1	.721	.971
Legumes/pulses, nuts, and seeds	-.074	.031	5.609	1	.018	.928
Milk and other dairy products	-.002	.018	.015	1	.903	.998
Vegetables and leaves	.001	.120	.000	1	.996	1.001
Fruits	-.034	.092	.139	1	.709	.966
Oils	.182	.189	.930	1	.335	1.200
Gender (Male=1)	1.969	.578	11.620	1	.001	7.162
Head of Household (Male headed=1)	1.287	.476	7.318	1	.007	3.621
Poverty Status (Non-poor=1)	-.395	.432	.838	1	.360	.673
Constant	.903	1.159	.607	1	.436	2.467

Notes: IVs (cereals, legumes, milk, vegetables, fruits, oils, gender, head of household and poverty status); (p<0.05), 26.6% of the variance in DV can be explained by IVs)

- comsuming 1 score of nuts FCS (odds ratio = 0.928) reduce 7.2% likelihood the respondents with CCE.
- male gender explain 7.162 time (odds ratio = 7.162) likelihood the respondent with CCE
- male-headed household explains 3.621 times (odds ratio = 3.621) the respondent with CCE

FINDINGS

Table 7:Wald Chi-Square (Female Model) (respondent with CCE =1; respondent without CCE =0)

	B	S.E.	Wald	df	Sig.	Exp(B)
Cereals, grains, roots, and tubers	.000	.088	.000	1	.998	1.000
Legumes/pulses, nuts, and seeds	**-.083**	**.034**	**5.801**	**1**	**.016**	**.920**
Milk and other dairy products	.000	.020	.000	1	1.000	1.000
Vegetables and leaves	-.034	.144	.057	1	.812	.966
Fruits	-.034	.107	.103	1	.748	.966
Oils	.251	.213	1.396	1	.237	1.286
Head of Household (Male headed=1)	**1.625**	**.542**	**9.006**	**1**	**.003**	**5.079**
Poverty Status (Non-poor=1)	-.816	.510	2.562	1	.109	.442
Constant	.593	1.256	.222	1	.637	1.809

Notes: IVs (cereals, legumes, milk, vegetables, fruits, oils, gender, head of household and poverty status), (p<0.05), 18.3% of the DV can be explained by the IVS

- **the significant predictors are 1 score of nuts FCS reduce 8% (odds ratio = 0.920) likelihood the respondent with CCE**
- **male-headed household predicts 5.079 times (odds ratio = 5.079) likelihood the female respondent with CCE**

FINDINGS

Table 8: Wald Chi-Square (Male Model) (respondent with CCE =1; respondent without CCE =0)

	B	S.E.	Wald	df	Sig.	Exp(B)
Cereals, grains, roots, and tubers	-3.828	1346.476	.000	1	.998	.022
Legumes/pulses, nuts, and seeds	-.005	.108	.003	1	.960	.995
Milk and other dairy products	-.025	.047	.287	1	.592	.975
Vegetables and leaves	.127	.241	.280	1	.597	1.136
Fruits	-.141	.227	.385	1	.535	.869
Oils	-.220	.507	.189	1	.664	.802
Head of Household (Male headed=1)	-17.998	12648.378	.000	1	.999	.000
Poverty Status (Non-poor=1)	1.278	1.217	1.102	1	.294	3.589
Constant	75.142	22700.856	.000	1	.997	430449012056198

Notes: IVs (cereals, legumes, milk, vegetables, fruits, oils, gender, head of household and poverty status) ; ***p*>0.05**

CONCLUSION

- Only the nuts FCS is significant ($p<0.05$) in both the general and female BLR models. An increase of one score in nuts FCS will reduce the likelihood of respondents having CCE in general (7.2%) & female (8.0%) BLR Model
- Male gender in general BLR Model predicts 7.162 times likelihood to report CCE compared to female; and respondent from male headed household predicts 3.621 time likelihood to report CCE compared to respondent from female headed household
- Female in male-headed (Female BLR Model) compared to females in female-headed household predits 5.079 time likelihood to report CCE. This could reflect female involvements in fisheries activities come from male headed than from female headed household because they assist husband or male family members
- The findings also may indicate potential on inequalities in access to resource access or decision-making power in household or community that shape CCE

CONCLUSION

- This study of a coastal Malaysian community reveals that the CCE is shaped by an interplay of dietary and gender factors.
- The key finding is that higher consumption of nuts was associated with a lower likelihood of reporting experiences related to climate change, suggesting a potential link between dietary diversity and resilience.
- Gender dynamics were even more influential. Men were more likely to report CCE compare to female, likely due to greater outdoor exposure. Furthermore, female in male-headed households were more likely to report CCE, indicating that gender inequalities in resource access and decision-making power affect climate vulnerability.
- The research concludes that effective policies must be integrated, simultaneously promoting food security and addressing gender inequalities to build true climate resilience.

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