

FOOD CONSUMPTION BEHAVIOUR: A CASE STUDY AMONG FARMERS IN RURAL AREA KEDAH, MALAYSIA

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Abstract: *Food consumption is one of the most important components in ensuring household food security. However, there are practices and beliefs that some foods are detrimental to health among low-income people, which affects food consumption in the household. The goal of this research is to look into the eating habits of farmers in the countryside of Kedah State, Malaysian. Agricultural Kedah State, including the districts of Kubang Pasu, Baling, Delay or prevent, Alor Setar, and Kuala Muda, is the focus of this research. Utilizing stratified random sampling, 225 rice growers from the rural areas of the chosen districts were chosen. Utilizing SPSS 25 and the findings of the food intake analysis, the information was analyzed. The results of the study revealed that food consumption among farmers was low with a value of less than 29.9. Almost the total food intake for each food category is low except for beverages that have a high value of above 80. The study also found that this group believes that some foods have an impact on health. The study suggests that the government should sensitize the rural population in particular to eat balanced foods. At the same time, the restructuring of the primary school curriculum and syllabus needs to be holistic so that awareness of nutrition and health can be raised in early childhood education.*

Keywords: *food consumption, behavior, farmers, rural area.*

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1. INTRODUCTION

Malaysia has always been mindful of the welfare of low-income residents. Various forms of safety net programs have been implemented to improve the living standards of this group. These efforts are repeated from time to time to ensure that this group does not fall out of the flow of development. There are three main categories in determining the social class in Malaysia based on income position, Specifically, the T20 group (defined as the household earning the highest 20% of Malaysians' total income), the M40 group (defined as the household incomes between 40% and 80% of Malaysians' total income), and the B40 group (defined as the households earning the lowest 40% of Malaysians' overall revenue) (provided by the Department of Statistics, Malaysia (2017) as a Table 1). This classification's major objective is to make it easier to organize, monitor, and carry out the programmed in a selective fashion in accordance with the requirements of each group of the community.



Table 1 Poverty Line Income

Decile Group		Income threshold (RM)
T20	T2	> 15,039
	T1	10,960 - 15,039
M40	M4	8,700 - 10,959
	M3	7,110 - 8,699
	M2	5,880 - 7,099
	M1	4,850 - 5,879
B40	B4	3,970 - 4,849
	B3	3,170 - 3,969
	B2	2,500 - 3,169
	B1	< 2,499

Source: Department of Statistics Malaysia (2020)

Many studies have shown that low-income people spend a large proportion of their income on food. Compared to other components of expenditure. This happens due to limited sources of income and ultimately affects the pattern of food consumption in the household. Badari et al. (2013) explain that socioeconomic factors influence nutritional status and dietary intake, including poor eating habits and inadequate food intake in households. Directly, this situation will increase the risk factors for chronic diseases (Lam and Khor, 1997). Lee et al. (2019) explain Malaysians' poor dietary habits and lack of physical activity can exacerbate an unhealthy lifestyle. The national nutrition policy and lifestyle in Malaysia are inadequate. Lee and Muda (2019) also mention that Malaysians consume an unbalanced amount of energy, resulting in poor diet quality and an increased risk of medical illness. This situation is caused by low purchasing power and affects household food consumption.

In reality, farmers are a vulnerable group and dependent on the main source of income. Due to their lack of knowledge and skills, this population is unable to diversify their revenue streams. The Economic Planning Unit (EPU) (2015) found that just 36.4% of household heads held a Sijil Pelajaran Malaysia (SPM) or comparable degree, while 36% lacked a degree and 84.6% had only completed secondary school. Absence of education makes it challenging to land a better job that raises economic standing and consequently enhances living standards (Sawaluddin et al., 2020). The majority of household heads—89.9%—work in low-wage, semiskilled positions as a consequence of their lack of education (EPU, 2015). Due to this predicament, families with low incomes with restricted access to proper nutrition are experiencing a problem with food insecurity, which is mostly caused by growing costs of living and restricted income. (Andersen, 1990).

These problems affect food intake in the household. These people only meet basic needs without paying attention to nutrition. A study by Norimah et al (2008) found that in rural areas, households are more likely to consume rice, leafy vegetables, sea fish, local food, anchovies, and biscuits. Additional drinks like tea (47%) and coffee (28%) as well as drinks with chocolate (23%) and syrup (11%) were also used on a daily basis but by a lesser percentage of the population. In the local dwellers, daily eating of marine seafood was prevalent (51%). According to research by Junaidah (2017), the low level of eating fish is caused by a lack of public awareness of the advantages of eating fish. This issue is also caused by a lack of facilities and infrastructure.

Yet, due to the high costs of these goods, just 20% of impoverished households in India and Jakarta with low incomes consume chicken eggs, seafood, poultry, milk products, and fruits, according to a study by Diehl et al. (2019). Households in the region also reduce their food intake in summer and reduce their consumption of meat and fish in summer. They also eat vegetables as a meal at least once a day.

In their investigation, Arnawa et al. (2019) discovered that paddy production, which represented for 38.32 percentage of the producers' median expenditure on food, was the category with the greatest expenditure, followed by the eating habits with an animal origin, which came in at 26.40 percentage.



The cost of buying vegetables and fruits came in third. In addition, no expenditure was found on the consumption of oily fruits and seeds. Wardle et al. (2000) stated that Understanding of diet and the intake of fruit, veggies, and fats are strongly correlated. The analysis's findings demonstrate that understanding of nutrition and dietary habits is influenced by one's work and educational background. This remark implies that a key factor affecting food consumption at the family level is the educational attainment. For low-income groups, such as farmers, it has an impact on household food consumption. At the same time, food consumption also influences behavior among consumers. Many complex and dynamic factors influence food choices and consumption, as this is closely related to each individual's personality (Keller & Siegrist, 2015). In the context choose food, Arbit et al (2017) identified five terms related to food, namely sacred, healthy, social, and vinegar. In terms relating to the sacred, food is closely associated with religious practices and rituals (Rozin, 2007). Under the moral aspect, food refers to how food choices and eating habits have a positive or negative impact depending on the views of the individual (Rozin, Markwith, & Stoess, 1997). When we talk about health, we are talking about food choices as the most important prerequisite for a healthy life. (LepkowskaWhite & Chang, 2017). While in terms of the social aspect of food, which reacts with potential food where it is shared, consumption is accelerated by the community (Woolley & Fishbach, 2017). Aesthetics refers to the experience of eating that connects pleasure with the consumption of food (Rozin, 2007).

Brown (2006) discusses how sociologists explain how emotions, ideas, opinions, desires, orientations, and objectives affect behaviour in deciding how something will act. This issue is intimately tied to how food is chosen and consumed in families. The idea of food phobia is viewed as having a direct correlation to mindset and personality while at the same time. Eertmans et al., (2005) clarify Certain people may avoid trying certain novel meals due to neophobia, which also serves to validate the rationale behind various attitudes regarding food preferences. Intolerances serves as a defence mechanism against physical pain, but it also prevents people from appreciating different meals (Altisent et al. 2013)

However, dietary intake is also influenced by beliefs about food. Asi and Teri (2018) explained that a belief is a rule, an unwritten commandment, or a declaration by the leader of a community and its environment that declares some things sacrosanct or forbidden to the members of the community. Beliefs about food exist in all communities. Each traditional society is shaped by traditional family values, ideas, and practises, and there are repercussions if they are neglected. A long-standing, customary, and accepted food belief that is accepted and embraced by members of society (Shahar et al. 2000). Dashti et al (2019) explain that food preferences are also influenced by cultural and environmental factors, behavioral and personal preference factors, and physiological factors that affect the timing of food consumption.

The study by Goswami and Thakur (2019) demonstrates that in the Karbi tribal region of Assam, India, pork, eggs, and poultry are avoided since it is thought that these meals are hot and would cause stomach trouble and increased menstrual bleeding. In a survey of pregnant women in Maduras, Diana et al. (2018) discovered that calamari, shrimp, mango, broccoli, and ice water creams were the most often forbidden meals. All gestational ages of pregnant women were forbidden from eating calamari, shrimp, skates, and crab. These fish were regarded as harmful during pregnancy as well as delivery.

Shahar et al. (2020) found in a study among elderly Malays in Mersing, Johor, that people avoided certain foods because they were harmful to their health. Cucumbers, pumpkin, long beans, aubergine, mustard, leaves, swamp cabbage, coconut shoots, and okra are considered "cooling foods". In addition, a study by Chakona & Shackleton, C. (2019) found that 37 percent of women in the Kat River Valley, South Africa, reported one or more dietary practices that were shaped by local cultural taboos or beliefs. The most commonly avoided foods were meat products, fish, potatoes, fruit, beans, eggs, butternut, and pumpkin.

Abu Bakar et al (2012) also note that there are many food beliefs in the Mijikenda community, some of which are likely to influence food elections. The Mijikenda tradition claims that when a mother is expecting a baby or toddler, "the heat" of the unborn kid sears the young child when the child rests with the woman, causing severe underweight. According on prior research, many scientists pay greater attention to the feeding taboo among pregnant women (Iradukunda,2020; Oni & Tukur 2012; Chakrabarti, & Chakrabarti,2019: Mohammed, et al. 2019; Tilahun, et al. 2022) and limited discussion

of the food taboo or food belief among farmers. Consequently, the purpose of this study is to ascertain how peasants in a remote community in Kedah, Malaysian, consume food.

2. METHODOLOGY

This study was conducted on farmers in rural areas in Kedah State, Malaysia. The selection of farmers in Kedah State follows from the fact that Kedah State is one of the low-income states in Malaysia compared to other states. Using stratified random selection, 225 reduced farmers were chosen as study participants. Five districts in Kedah State were identified: Baling, Kuala Muda, Alor Setar, Pendang, and Kubang Pasu (Figure 1).

A, B, and C were the three sections of the questionnaire. The demographic details of the respondents, including age, height, family status, profession, household income, etc., are detailed in Section A. Details on the food consumption habits of farmer's households can be found in Section B. Finally, Part C provides details on respondents' attitudes on eating.

A five-point Likert rating, open-ended questions, countable, and other question formats are all included in the survey. Under the direction of the researchers, the poll was carried out with the assistance of local research assistants, and the survey was created in the Malay native language (Malay). A face-to-face discussion with chosen rice farmers in chosen areas was used to carry out the poll. To analyse the data, SPSS Statistics version 25 was utilised. Food choices were provided as mean-expressed qualitative statistics. The pattern of food consumption was then approximated using the approach of Badari, et al (2013) in Figure 2.



Figure 1: Study of Location

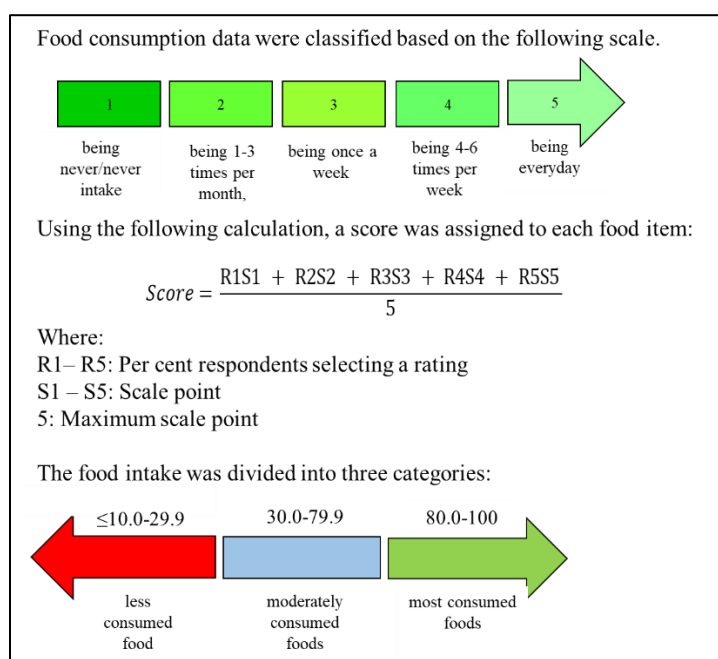


Figure 2: Food consumption calculation



3. RESULTS AND DISCUSSION

3.1 Demographic

The majority of the people who responded (76.4%) were female, and the average age was 54. They ranged in age from 48 to 52 years (17.3%) to 58 to 62 years (16%). The responder is a paddy farmer in general. 28 percent of the respondents had finished upper high school, according to data on their educational backgrounds. The other survey participants had finished lower secondary school (35.1 percent). Although women made up the majority of those who responded, the plurality of them (62.5%) were homeowners who relied on their spouses' earnings.

Overall, low-income farmers in the study were classified as poor because their income was below RM2499 (Malaysia Poverty Line Income-PLI) compared to RM1941, the mean income/month of farmers in the studies. Meanwhile, the average monthly household expenditure of RM 1169.10 and RM 465.64, or 39.83 percent was spent on food and beverage expenses. Followed by expenditure on transport (petrol costs and installments for car and motorbike) RM 218.92 (18.73 percent). Utilities also accounted for 12.73 percent of the total expenditure of farmers. In addition, farmers spent 17.36 percent (RM 17.36 per month) on education. This situation shows that although this group is in distress, they value education for their children and hope that their future generations will not inherit the poverty they are experiencing. That group also spends on health or medicine by RM 91.07 per month and less on clothing by 2.45 percent per month.

3.2 Food Consumption Pattern

Based on Figure 3, the results of the study show that plain water, coffee, and tea are the most consumed in the daily diet of farmers. The cheap price and culture in the community favor coffee and tea to be the first choice with a score of over 80. At the same time, vegetables, condensed milk, fruits, herbs (*ulam*), chicken egg, chicken, and seafood were found to be moderately consumed with scores ranging from 32.11 to 42.13. For the other food categories, the value for consumption of the listed foods was found to be low and below the value of 29.9. This is due to factors such as taste, price, taboo practices, and so on. Indirectly, this factor has a direct impact on the food intake of farmers and also affects the health status of this group.

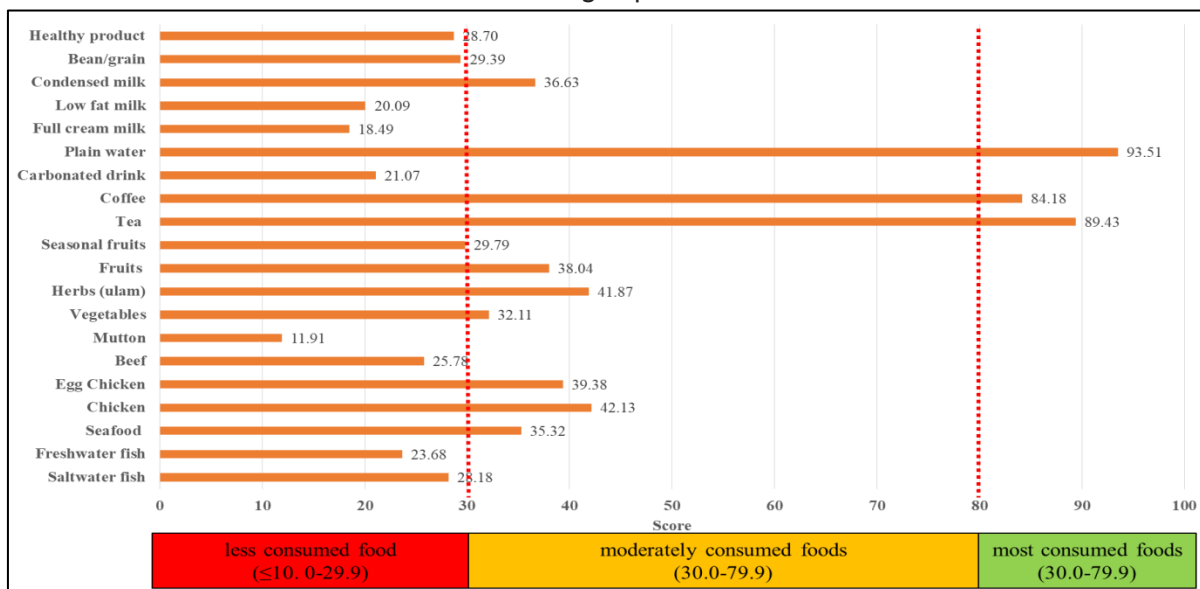


Figure 3: Score food consumption among low-income farmers

In obtaining protein sources, farmers in the study area obtained protein sources through saltwater fish and freshwater fish. In the category of freshwater fish, the average farmer consumes *Channa Stria* type fish with a score of 24.63, followed by *Climbing Perch* type fish with a score of 24.45, *Gourami* (22.84), *Catfish* (22.48) and *Tin Perch* (21.15). Overall, the consumption of fish in the freshwater category is low (Figure 3). In the saltwater fish category, *chub* is very high at 78.48, followed by *hardtail scad* (36.09), *slender sprat* (34.21), and *black skip jack* (32.89). The cheap and readily available price factor in the market leads to high consumption of this food among rice farmers. For other fish species in this

category such as Sardine, Japanese Threadfin Bream, Yellow Scad, and Mangrove Red Snapper, the consumption rate of this fish species is low with a value below 29.9 (Figure 4 & Figure 5).

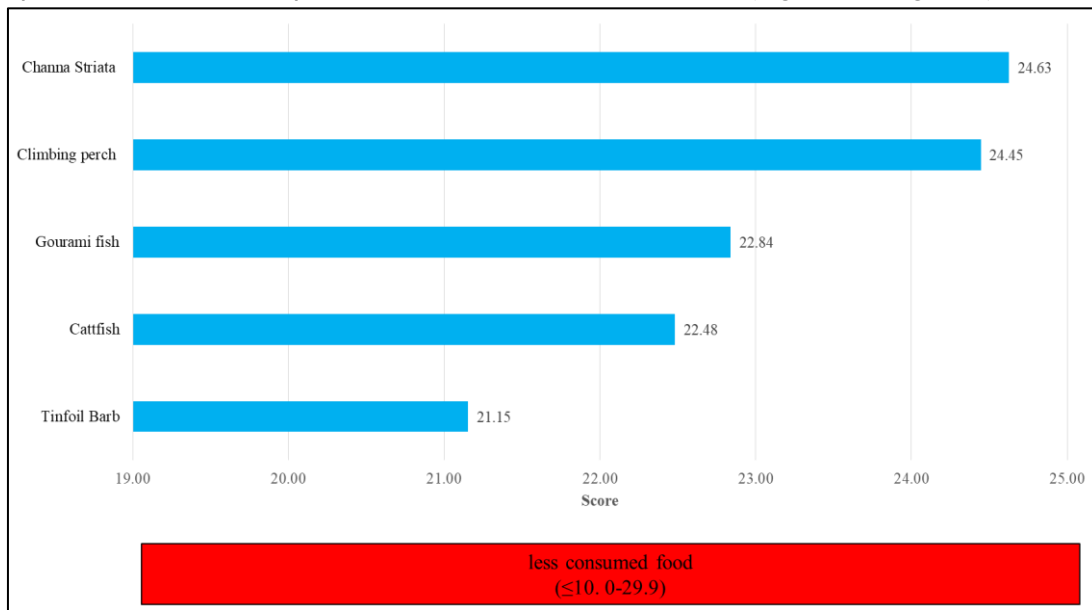


Figure 4: Score food consumption for freshwater type

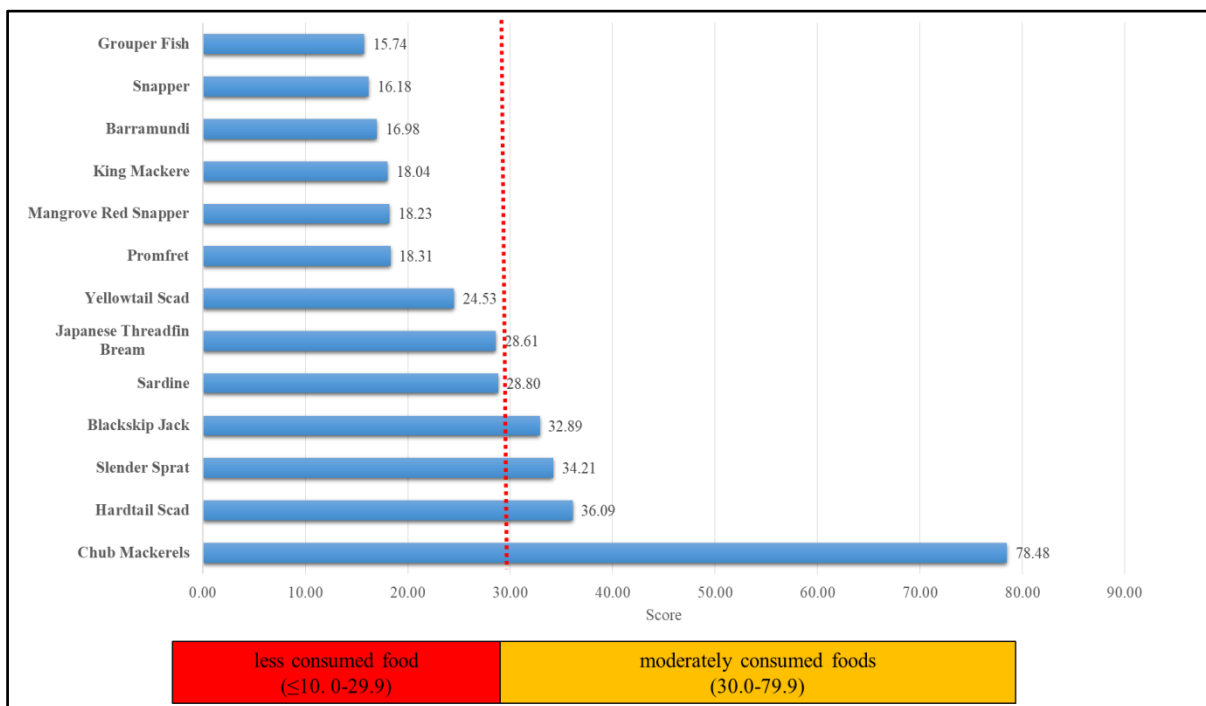


Figure 5: Score food consumption for saltwater fish type

The supplies of both vitamins and minerals were veggies (Figure 6). In the collection of vegetables, choy sum is the first choice among rice farmers with a score of 51.64, followed by cabbage (45.78), spinach (43.38), sprouts (42.31), and yardlong beans (38.92). The use and consumption of these vegetables are rated as moderate. Compared to bamboo shoots, fiddlehead, star gooseberry, water chip, and cassava shoots, the consumption of this vegetable type is low with a score below 29.9. These vegetables are readily available and cheap in farmers' residential areas. In general, the consumption of vegetables among farmers is still low. Cultural factors, practices, and education that do not value vegetables in the diet result in low consumption of vegetables.

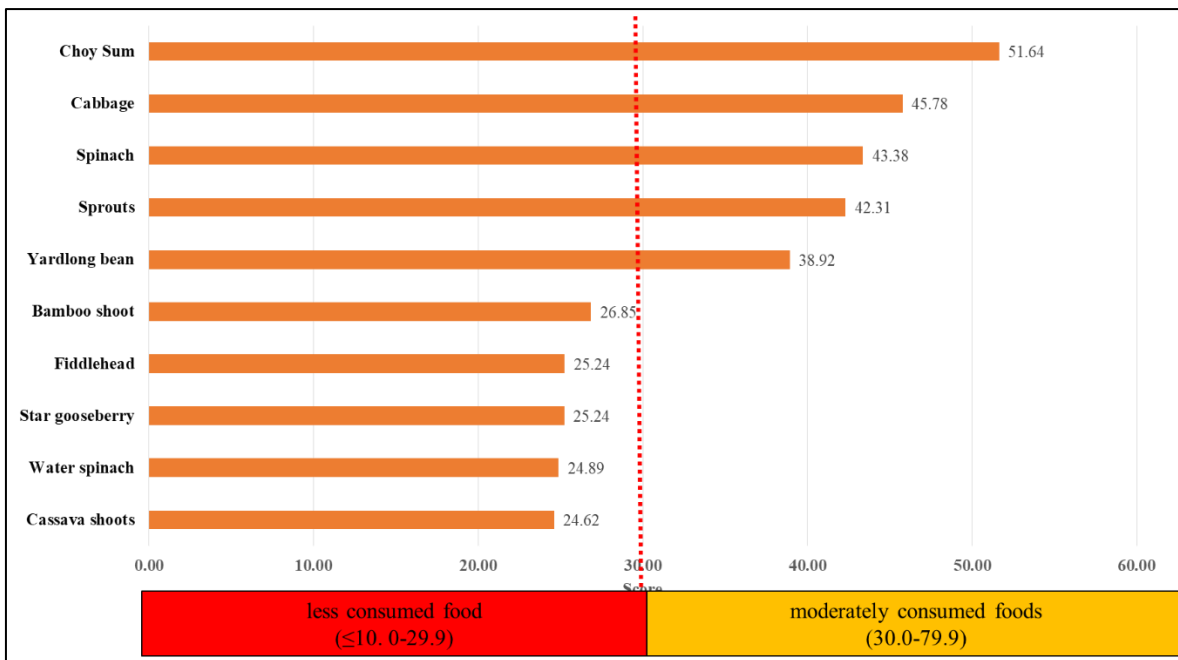


Figure 6: Score food consumption for vegetable type

3.3 Food Belief

In the context of food consumption, practice and cultural factors have a great influence on each individual's choices. This has been happening from one generation to another for a long time. The impact that eating particular meals on health have not been the subject of any scientific research, beliefs and convictions are a barrier to eating certain foods.

According to the study, food has been divided into six basic categories: beverages, blustery, fragrant, hot, irritating, and soothing. According to the study's findings, 37.11 percentage of this population does not consume coffee, carbonated beverages, full milk, or low-fat milk. They contend that these beverages are to blame for sickness, heartburn, aches in the belly, and headache. All of their family members continue this behaviour as well. Mutton and yellow beef are prohibited in this category. 18.66 percent of the rural residents in Kedah State think that these hot foods have negative effects on their health. They think eating these foods will cause them to experience migraines, elevated blood pressure, and skin problems (enzymatic). Similar to this, chicken, red meat, shellfish, and chicken eggs are categorised as irritating foods that, when consumed, lead to skin issues (enzymatic).

Certain foods, including tapioca starts, rattan starts shooting, yardlong beans, sprouting, oilseeds, and black beans, are regarded as windy foods in rural areas of the state. They make you feel queasy and bloated after eating. The same is true for consuming hot foods, which can result in indigestion, stomach problems, and pregnancy. Examples include bamboo, papaya, and acidity. Those with health issues like numbness or soreness in the joints depend on and steer clear of foods like yard long beans, star gooseberries, and sprouting that are categorized as soothing food.

It can be explained that taboo practices on some foods are based on the experiences and observations of individuals in the community. The matter becomes taboo when an unexpected event occurs due to the consumption of certain foods. These beliefs and taboos are difficult to change because they have been integrated into the life of the community. They also affect the resilience of each individual's body.



Table 2: Food belief among low-income people in a rural area, Kedah

Classification	Food items	Reasons for avoidance	Percentage
Beverages	coffee, carbonated drink, fresh milk, low-fat milk	headache, stomach-ache, heartburn, nausea	37.11
Hot foods	mutton, beef, durian	headache, high blood pressure, skin problems (eczema)	18.66
Itchy foods	chicken, red meat, seafood (e.g. prawns, prawns paste, mussels) egg chicken	skin problems (eczema)	5.34
Windy foods	cassava shoots, bamboo shoot, yardlong bean, sprouts, groundnut, green bean	windy stomach, nausea	5.33
Cooling foods	yardlong bean, star gooseberry, sprouts	joint numbness/pain,	2.66
Sharp foods	pineapple, vinegar	heartburn, stomach-ache	1.33

3.4 Food access and vulnerability

This study also found that 60 percent of farmers were getting enough food. While 40 percent of the farmers said that they do not get enough food. Several factors contribute to households' lack of access to food. One of the factors leading to a lack of food is dependent on main income. In addition, declines in production due to natural disasters, disease infestation, and pest infestation lead to a lack of income sources, which ultimately affects farmers' achievement of perfect nutrition.

Indeed, farmers in this study are vulnerable groups who face recurrent precarious situations. When unforeseen events such as economic shocks, natural disasters, etc. occur, this group is easily hit in terms of income, motivation, and life security. Climate uncertainty, for example, also forces people in rural areas to deal with seasonal changes, especially monsoons and drought. Flooding events, for example, are unpredictable. This directly affects livelihood, especially food security.

The study also found that farmers are aware that climate change has affected production outcomes. The results of the study also show that climate change also threatens farmers' activities and jobs. A total of 79.1 percent stated that climate change affects their work activities. The findings of the study also explain that the involvement of government agencies/non-governmental organizations at the community level in improving the knowledge of these groups on climate change is less than satisfactory. Indirectly, this reflects that the management and knowledge of this phenomenon depend on the initiative of the farmers themselves. There is a fear that farmers' understanding will deviate from the actual concept if there is no specific guidance and leadership from the agencies involved.

4. CONCLUSION

In summary, this study finds that food consumption among farmers in the rural area of Kedah, Malaysia is lower. Socio-economic factors such as low income, the higher number of households, low education, and lack of skills and training affect household food intake. At the same time, the respondents also have a monthly installment for buying furniture and electrical appliances. This factor affected the purchasing power of farmers (Wahab et al.2016)

In general, food consumption by farmers in rural areas of Kedah State is low for all food categories except beverages. The research conducted revealed that farmers in the study spend almost 40 percent of their income on food procurement. This allocation is only to meet basic household food needs, namely rice, vegetables, and fish. At the same time, some farmers take dried fish as one of the menu items. The study also found that most farmers buy fish or vegetables at a cheap price, but the quality is not satisfactory. This is because of the narrowness of life which makes this group do so. The high price of food in the market makes this group give priority to the right purchases. For them, the quantity of food in the household should be sufficient compared to the quality of food. Some parents skip taking a portion of food and give preference to household members. Food is also rationed to

ensure an adequate food supply. Austerity measures are also implemented by farmers to ensure that the food source is always sufficient.

In addition, there is a belief in some foods can affect health, so a household does not consume or eat food. This happens to be adopted by other households as well. It is difficult to convince this group of the importance of a balanced diet because their beliefs and convictions are too strong. Eventually, these practices and beliefs affect health status.

To overcome this problem in the long term, the government needs to raise the importance and need for balanced nutrition among the rural population. Education on the importance of nutrition is necessary to raise awareness of the practices and taboos that have persisted all along and ultimately affect the body. Planned and targeted education on nutrition can be done through pregnant women who go for regular check-ups at the hospital (for example). At the same time, restructuring of the curriculum on health and nutrition needs to be addressed holistically and comprehensively right from primary school. This is important to sensitize the next generation to the issue of nutrition. At the same time, health campaigns, especially in remote areas, must be regular and a priority. As you know, inland areas are difficult to access. Indirectly, it will be difficult for people there to get relevant information. Regularly conducted health campaigns will raise the awareness of the population to a certain extent.

The study has the following three limitations. While attempting to determine the pattern of nutritional intake among low-income populations in rural Malaysia, the study's shortcomings must be taken into account. Each zone in this study had a tiny sample size of low-income groups, which only accounted for a small part of the overall smaller population.


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