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Understanding Local Food Security Awareness: Insights from the Seremban Community

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Abstract

Food security has become an increasing concern in Malaysia, particularly after the COVID-19 pandemic, which exposed the vulnerability of the food supply chain. The crisis resulted in food shortages and rising prices. Considering the challenges, it is crucial to evaluate community level of understanding and preparedness in relation to food security. This study aims to assess the level of knowledge and awareness of food security among the Seremban community in Negeri Sembilan. A sample of 384 respondents was selected through convenience sampling, and data were collected via online questionnaires. The findings on awareness of the term “food security” revealed that 42.9% of respondents had never heard of it. Furthermore, awareness levels differed across demographic groups, including age, gender, education level, and household income. These demographic characteristics also showed variations in the adoption of selfsufficiency practices. The results highlight existing gaps in knowledge and behaviour among Seremban residents. The study concludes by recommending educational programmes and community-based initiatives to enhance food security awareness across all demographic groups. The findings provide valuable insights for policymakers and local leaders to design targeted interventions that strengthen community resilience and ensure long-term food security.

Keywords: Food security, Knowledge, Awareness level

Introduction

Food security is a fundamental issue that affects national stability, economic development, and individual well-being. In line with the United Nations’ Sustainable Development Goal 2 (SDG 2), Malaysia has committed to ending hunger, achieving food security, and promoting sustainable agriculture [1]. To monitor progress globally, the Global Hunger Index (GHI) serves as a comprehensive tool for measuring and tracking hunger at the global, regional, and national levels. The GHI scores range from 0 to 100, where 0 represents no hunger and 100 indicates the most severe level of hunger. As of 2024, Malaysia has a moderate hunger level, with a GHI score of 12.7, ranking 61st out of 127 countries. This reflects a positive trend, as the country’s score has improved from 15.4 in 2000 to 12.7 in 2024, indicating steady progress in reducing hunger and malnutrition. Nevertheless, ongoing challenges such as climate change, economic pressures, and rapid urbanisation continue to expose vulnerabilities in Malaysia’s food security system [2].

Food security has emerged as a critical concern in Malaysia, particularly following the COVID-19 pandemic, which revealed significant vulnerabilities in the country’s food supply



chain. The crisis led to food shortages and sharp increases in the prices of essential goods, disproportionately impacting rural communities [3]. With nearly 30% of Malaysia's food supply reliant on imports, global disruptions can quickly affect domestic availability and accessibility. This highlights the need for a more resilient and self-sufficient food system. This situation has shown the need to strengthen local food systems to ensure food security for all people [4]. Recent policy changes, such as the removal of chicken subsidies, have added to public concerns about food affordability, raising awareness of the importance of understanding food security at the community level [5]. Because of these challenges, studying food security is essential to assess how well communities are prepared to face future issues such as rising food prices or supply disruptions. Local awareness and active community involvement play a crucial role in promoting sustainable practices, such as home-based food production, which can reduce dependence on imports and strengthen resilience against economic shocks.

While government initiatives and community programmes such as urban farming and awareness campaigns are aimed to improve food security, there is limited evidence on the extent of knowledge and awareness among communities regarding this vital issue. Understanding the aspects is essential as knowledge and awareness greatly influence individuals' behaviours and attitudes toward food security initiatives [6]. Despite the growing attention to food security, awareness levels vary across different segments of the population. Urban residents are often more engaged in activities such as home gardening and food waste reduction; however, they frequently encounter challenges such as limited space and insufficient policy support [7]. Women, who typically manage household food-related responsibilities, tend to possess strong practical skills but may lack a comprehensive understanding of broader food system issues or national policies [8]. Addressing the gaps in knowledge and engagement is vital for Malaysia to strengthen its long-term resilience against food insecurity [9].

As food security becomes an increasingly pressing issue in Malaysia, it is crucial to understand how individuals from different communities perceive this challenge and what actions they are prepared to take in response. This study focuses on residents of Seremban, aiming to explore their knowledge, awareness, and daily practices related to food security. By identifying gaps in understanding and behaviour, the research seeks to support local initiatives in building stronger and more resilient communities.

Methodology

Study Area

This study was conducted in Seremban, the capital of Negeri Sembilan, Malaysia. Known for its socioeconomic diversity and urban growth, Seremban offers a representative setting for assessing urban community knowledge of food security.

Data Collection and Sampling

A survey was conducted to collect primary data. Data were collected through a structured, self-administered questionnaire distributed online via Google Forms. This study employed convenience sampling, a practical and cost-effective non-probability method that selects



participants based on their availability and willingness to participate. This approach was efficient for gathering data on food security awareness among residents of Seremban, with 384 respondents from different age groups, genders, education levels, and household income groups participating in the survey. However, as a non-probability method, convenience sampling limits the ability to generalise findings to the wider population. Despite this limitation, the method is suitable for exploratory research as it provides initial insights and identifies patterns that can guide future, more comprehensive studies. The questionnaire was divided into two sections: (1) Section A collected demographic information, and (2) Section B contained questions related to knowledge and awareness of food security. Questions on awareness of food security were in the Likert-scale format. Prior to full deployment, the questionnaire was pilot tested with 30 participants to ensure clarity and reliability.

Method of Analysis

Descriptive analysis using frequency tables and bar charts was employed to summarise the respondents' demographic profiles and their level of knowledge and awareness regarding food security. This method provides a clear overview of the data by highlighting general trends and patterns. This approach enables the identification of gaps in awareness and understanding among various segments of the population.

Results and Discussion

Profiles of Respondents

Table 1 presents a descriptive analysis of the demographic profile of the 384 respondents who participated in the study.

Table 1: Demographic profiles of respondents

Variable		N	Percentage
Age Group	19-25 years	106	27.6
	26-35 years	105	27.3
	36-55 years	100	26.0
	56-60 years	73	19.0
Gender	Female	199	51.8
	Male	185	48.2
Education Level	Primary	41	10.7
	Secondary	67	17.4
	Diploma or equivalent	91	23.7
	Bachelor's degree	88	22.9
	Postgraduate or higher	49	12.8
Household Income Group	No formal education	48	12.5
	B40	154	40.1
	M40	120	31.3
	T20	110	28.6



The analysis aims to provide an overview of the demographic composition of the respondents. The age distribution is balanced, with the largest group aged 19–25 years (27.6%), followed closely by those aged 26–35 years (27.3%) and 36–55 years (26.0%). The smallest age group comprises individuals aged 56–60 years, accounting for 19.0% of the sample. In terms of gender, females slightly outnumber males, with 51.8% and 48.2% of respondents respectively. Educational attainment varies, with the highest proportion holding a diploma or equivalent (23.7%) or a bachelor's degree (22.9%). Other respondents reported having secondary education (17.4%), postgraduate qualifications (12.8%), primary education (10.7%), or no formal education (12.5%). Regarding household income, the highest category is the B40 income group (below RM5,245), representing 40.1% of the sample. The M40 group (RM5,256–RM11,819) constitutes 31.3%, while 28.6% belong to the T20 group (above RM11,820).

Knowledge of the Term Food Security

Understanding public awareness of food security is essential for developing effective strategies to ensure sustainable food access and community resilience. Figure 1 illustrates the respondents' level of awareness regarding the term “*food security*”, revealing varying degrees of familiarity and understanding among the population.

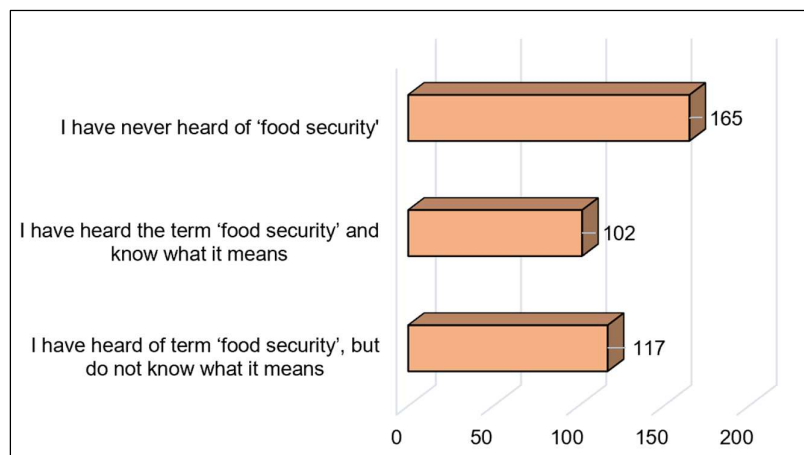


Figure 1: Knowledge of the term food security among Seremban residents

Based on Figure 1, 165 respondents (42.9%) reported that they had never heard of the term “*food security*”. This indicates that a significant proportion of Seremban residents lack basic awareness of the concept, highlighting a crucial gap in public understanding. However, it is also possible that some individuals, although unfamiliar with the term itself, may already be practising food security measures, such as home gardening, food preservation, or reducing food waste. Meanwhile, 117 respondents (30.5%) stated that they had heard of the term but did not know what it meant.

This suggests that although some awareness exists, understanding remains limited, possibly due to a lack of exposure to formal education on food systems, sustainability, or relevant



government policies. In contrast, only 102 respondents (26.6%) indicated that they understood the meaning of food security, representing a relatively well-informed segment of the population. This group may be more likely to engage in food-related discussions or practices, potentially influenced by higher levels of education, occupation, or personal interest.

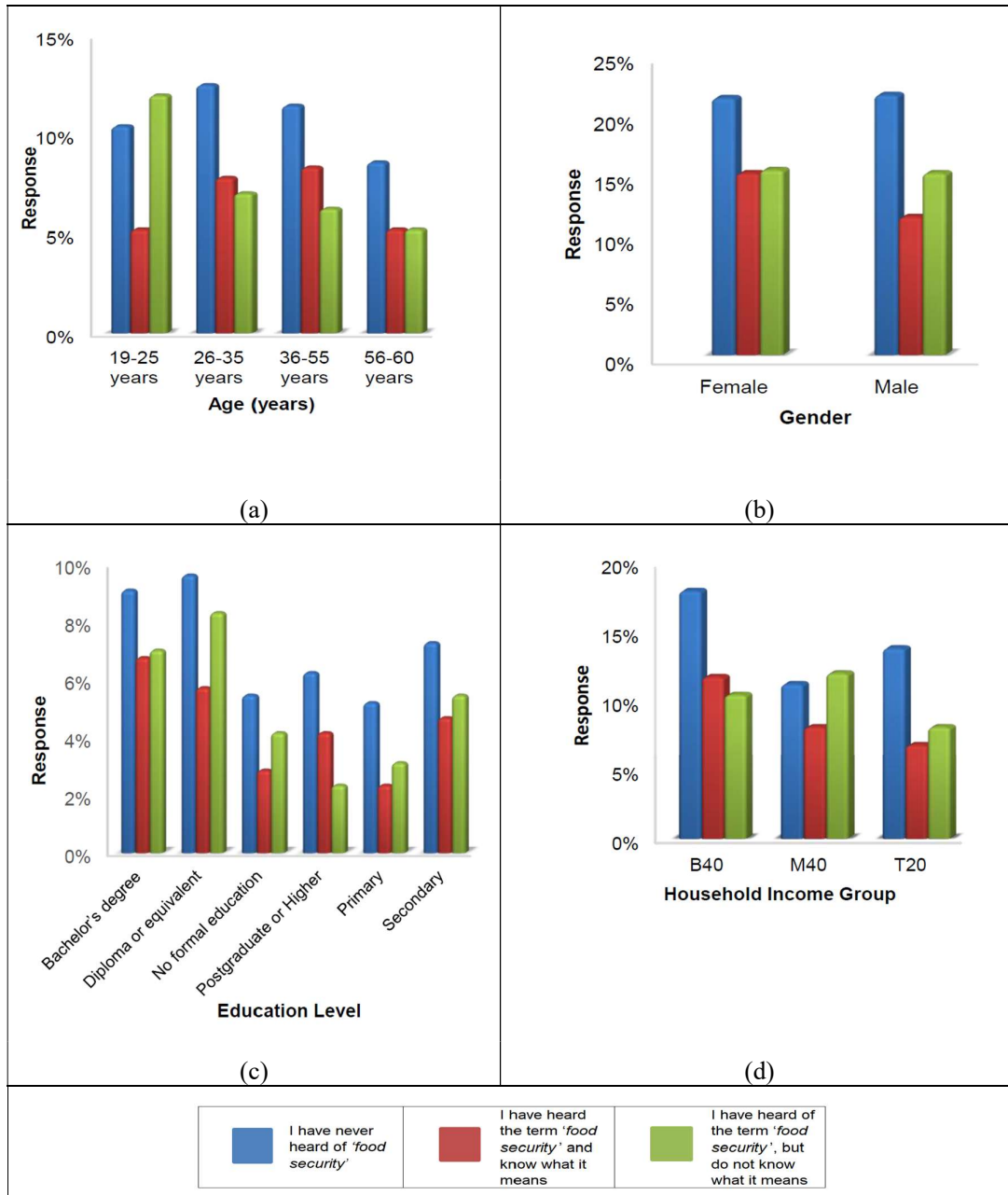


Figure 2: Knowledge of the term “food security” by demographic factor



As shown in Figure 2(a) – Figure 2(d), knowledge levels varied across different demographic groups. Respondents aged 36–55 had the highest understanding, possibly due to their exposure to current issues through education or media. In contrast, the 26–35 age group showed the lowest knowledge, indicating that younger adults may need more targeted outreach. In terms of gender, female respondents were slightly more knowledgeable than males. Furthermore, those with diplomas and bachelor’s degrees showed the highest levels of understanding. However, this same group also had the highest number of respondents who had never heard of the term, showing mixed levels of awareness. The B40 (lower-income group) had the highest proportion of respondents who had never heard of food security. B40 also shows the highest understanding compared to M40 and T20, likely due to better access to practices and information. These results underline the importance of tailored outreach and education efforts that account for both economic and social conditions.

Awareness of Adoption of Self-sufficiency Practices

Food-related practices are important for food security. This section explores the awareness and practices related to food security among respondents, including food prepping practice, keeping or storing extra food and growing plants for personal use. The analysis is categorised by household income group, gender, and educational level.

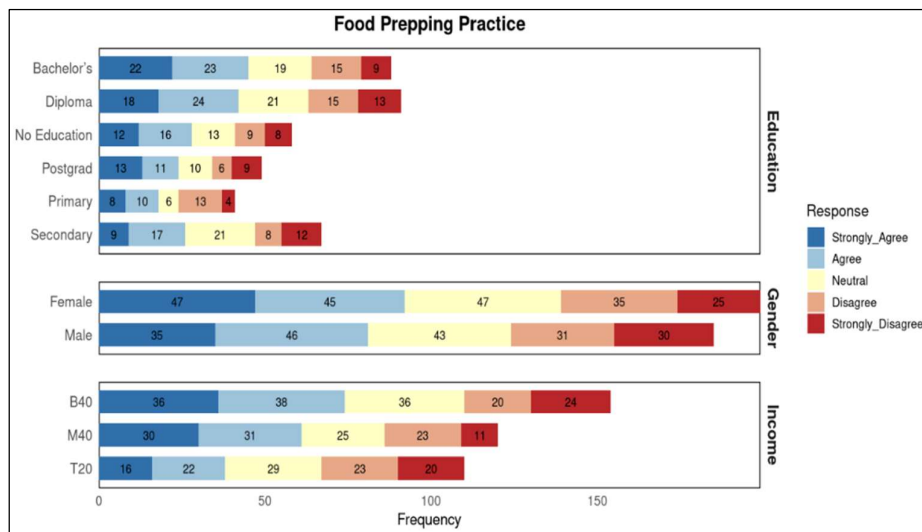


Figure 3: Awareness level of food prepping practices by demographic group

Food prepping, which involves preparing meals or ingredients in advance, is crucial for ensuring consistent access to nutritious and affordable food, especially for households with limited resources. Figure 3 shows a significant gender gap in food prepping, with more female respondents (n=92) than male respondents (n=81) agreeing with the practice. This illustrates ongoing gender norms, as more women reported practising it. According to the Theory of Planned Behavior (TPB), this is influenced by subjective norms (women expected to cook), positive attitudes (savings, convenience), and perceived control (food literacy, planning skills)



[10]. Among income levels, low-income respondents in the B40 category (n=74) demonstrate the highest awareness of food prepping, likely using it as a cost-saving strategy. Additionally, individuals with a diploma (n=42) and degree qualifications (n=45) report the highest participation, suggesting that education influences awareness of prepping practices.

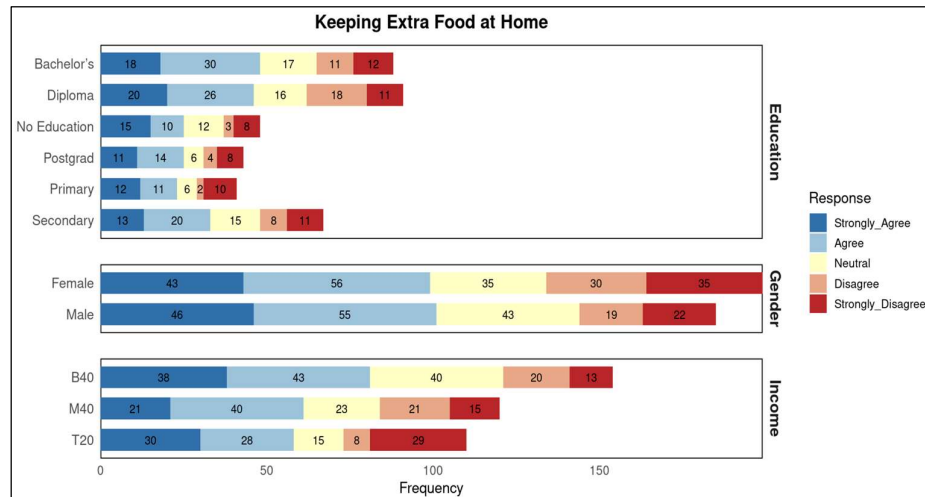


Figure 4: Awareness level of keeping extra food by demographic group

Based on the analysis presented in Figure 4, the prevalence of home food storage was relatively comparable between male and female respondents, with 101 males and 99 females indicating participation. Although this discrepancy is minimal, it suggests that both genders are actively involved in food preparedness. In terms of income group, individuals belonging to the B40 income group (n=81) demonstrated the highest level of engagement in food storage. This trend may be attributed to their enhanced capacity to purchase goods in bulk and their inclination to prepare for uncertain circumstances. Furthermore, educational attainment played a significant role, as respondents holding degrees or diplomas were more likely to engage in food storage practices. This observation indicates that individuals with higher levels of education may possess a greater awareness of the importance of food planning and preparedness for emergencies. Education is important in improving people’s knowledge and awareness of food security. Research shows that individuals with higher levels of education are more likely to understand how food systems work and are more willing to follow sustainable practices [11]. They are often better informed about nutrition, environmental issues, and the importance of responsible food choices.

Figure 5 indicates that 72 female respondents grew plants for personal use compared to 65 males, suggesting greater involvement of women in home gardening. The B40 income group showed the highest agreement, with 55 individuals likely to grow their own plants. Respondents with diplomas (n=28), bachelor's degrees (n=27), and secondary education (n=27) expressed the highest agreement that growing plants was a practice for food security. This implies that higher education levels may lead to more sustainable habits such as home gardening, as these individuals are generally better informed about its benefits.

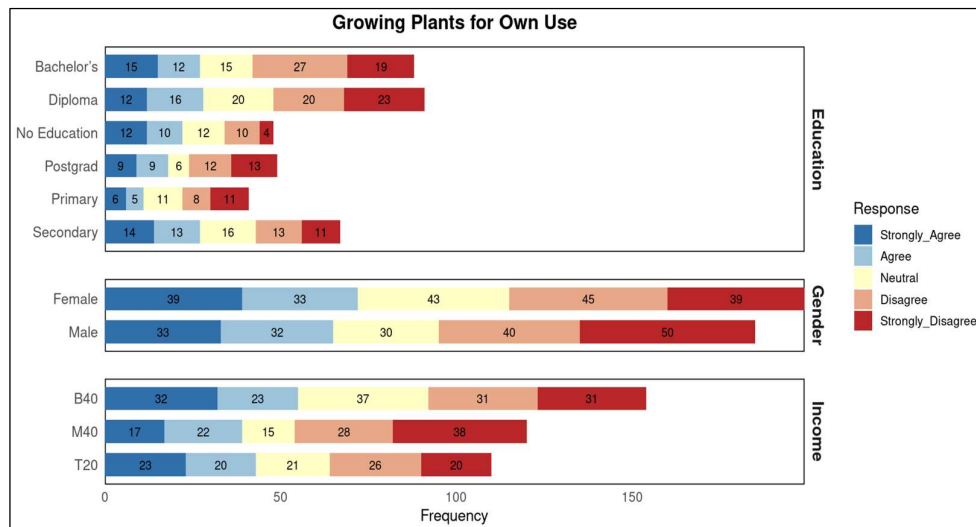


Figure 5: Awareness level of growing plants practices by demographic group

Conclusion

This study uncovers significant gaps in food security knowledge among residents of Seremban, with 42.9% unaware of the term "food security" and only 26.6% demonstrating a clear understanding. Despite this limited awareness, many individuals, particularly women, those from the B40 income group, and respondents with higher educational attainment actively practice forms of food self-sufficiency, such as food prepping, home gardening, and food keeping. The findings suggest that while conceptual understanding may be lacking, practical engagement with food security behaviours exists and is influenced by key demographic factors, such as income level, education, and gender.

In light of the findings, targeted initiatives are essential to enhance food security literacy and promote sustainable practices. Public education campaigns should be developed to introduce the concept of food security in a relatable and accessible manner, using community workshops, schools, and local media. Support for low-income households through microgrants or starter kits can encourage food resilience activities at home. Furthermore, policies that recognise and incentivise sustainable household practices, particularly those led by women, should be integrated into local governance frameworks. The efforts will contribute to strengthening community resilience and advancing Malaysia's commitment to Sustainable Development Goal 2. Future research could expand on the findings through quantitative approaches that test relationships between demographic factors and food security practices, or through longitudinal studies that track changes in awareness and behaviour over time.

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