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Determinants of Food Insecurity among University Students: A case study of UiTM Shah Alam

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Abstract
Food insecurity is a growing concern among Malaysian university students, particularly at UiTM Shah Alam, where rising costs and limited support exacerbate vulnerability. This study investigates the relationship between financial literacy, time constraints, food behaviour, and food insecurity through a cross-sectional survey of 400 students, analysed using descriptive and Pearson correlation methods. Findings reveal moderate food insecurity, negatively correlated with financial literacy and household support, but positively linked to time constraints and poor food behaviour. Recommendations include implementing structured financial literacy programs, affordable nutrition initiatives, and time management support to enhance student well-being, food access, and academic performance.

Keywords: Food Insecurity; Financial Litearcy; Time Constraint; Food Behavior

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1.0 Introduction

Food insecurity is still a problem in the world, as more and more people struggle to get enough safe, nourishing food. The State of Food Security and Nutrition in the World Report (2023) says that low-income families often have trouble affording healthy meals, especially in rural and peri-urban areas. Conflict, climate change, economic instability, and the COVID-19 pandemic's long-term effects are some of the contributing factors that have made the world's hunger situation worse (Global Hunger Index, 2022). Students in educational institutions are also impacted by food insecurity, in addition to households. Numerous studies have shown a strong correlation between food insecurity and adverse outcomes, including long-term health problems, psychological stress, unhealthy eating habits, and poor academic performance (Mohd Abu Bakar et al., 2019; Mohd Jamil et al., 2020; Ahmad et al., 2021). In order to address this issue among students, research by Nur and Norfarizan Hanoon (2024) highlighted the necessity of multi-level strategies involving schools, universities, ministries, and NGOs. University students in Malaysia are increasingly experiencing food insecurity, especially those from lower-income families. There is little empirical research that focuses on particular institutions, despite the fact that national studies have examined food insecurity more broadly. Rising living expenses, a lack of financial support, and a lack of awareness or intervention tools may make students at public universities like Universiti Teknologi MARA (UiTM) Shah Alam especially vulnerable. Thus, the purpose of

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this study is to look into the main institutional and socioeconomic factors that affect food insecurity among students at UiTM Shah Alam, specifically to determine the level of food insecurity among students at UiTM Shah Alam and to examine the relationship between financial literacy, time constraints, and food behavior and food insecurity among these students. This study aims to determine the level of food insecurity among students at UiTM Shah Alam and to examine the relationship between financial literacy, time constraints, and food behavior with food insecurity within this student population. It is anticipated that the results will help policymakers and university administrators make useful suggestions to enhance academic performance, student well-being, and general food access. According to the 2022 Worldwide Hunger Index (GHI), the global food crisis is getting worse due to factors like violence, climate change, and the COVID-19 pandemic, as shown in Figure 1.

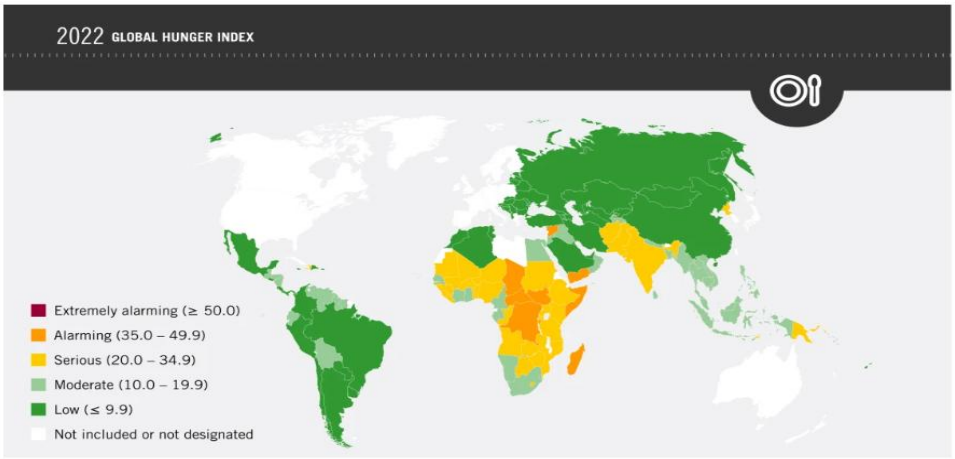

Fig. 1: Map of Global Hunger Index 2022
(Source: Global Hunger Index 2022)

2.0 Literature Review

2.1 Definition of Food Insecurity

Food insecurity is the state in which people or families do not always have regular access to enough food that satisfies their nutritional needs for living an active and healthy life, according to the Food and Agriculture Organisation (FAO) of the United Nations. This includes social and economic barriers that keep people from getting food, which affects their nutritional well-being in addition to food availability. It emphasizes the complex relationship between food availability, price, and quality by acknowledging that a range of factors, such as social dynamics within households and communities, societal inequalities, and economic constraints, can contribute to food insecurity (Long et al., 2020). Another scholar defines food insecurity as the inability to regularly afford a sufficient and nourishing diet. Millions of American households deal with this issue: some have low food security due to a decline in the variety or quality of their food, while others have extremely low food security due to irregular eating patterns and inadequate food intake. Food deserts are places where it is hard to find reasonably priced and healthful food options nearby, according to Christian et al. (2020). Because there are fewer nearby restaurants, people are compelled to rely on fast food options. Other academics contend that food insecurity is a temporary problem brought on by a number of factors, such as financial difficulties and joblessness. Until a person might experience food insecurity (U.S. Department of Health and Human Services, 2020). Furthermore, food insecurity is measured at the household level as an economic and social condition in both the USDA food security report and the food security survey. As stated by the U.S. another definition, according to the Department of Agriculture (2025), is having erratic or restricted access to enough food. According to these two theories, the main cause of food insecurity is household income.

2.2 Evolution of food Insecurity

Due to changes in the global economy, conflicts, environmental factors, and policy changes, food insecurity has changed dramatically over the past century. Early in the 20th century, regional food insecurity was frequently linked to natural disasters and agricultural constraints. International efforts, including the founding of the Food and Agriculture Organisation (FAO) in 1945, were prompted by severe food shortages brought on by the Great Depression (1930s) and the World Wars (1914–1918 and 1939–1945). Following World War II, poverty, population growth, and colonial legacy caused persistent food insecurity in many countries, especially in the Global South. Agricultural advancements brought about by the Green Revolution (1960s–1970s) temporarily reduced food shortages in nations like Mexico and India, but they also brought about problems like environmental damage and unequal food distribution. In recent decades, food poverty has been made worse by climate change, economic crises (most notably the global crisis of 2008), and conflicts (such as those in Syria and Yemen). Millions of people experienced widespread hunger as a result of the COVID-19 pandemic's disruption of global food supply chains. The achievement of global food security is currently hampered by global problems like gender inequality, economic inequality, and unsustainable food systems, which are linked to food insecurity (Food and Agriculture Organisation of the United Nations, 2010). Reviewing different discussions or research on the topic can help one better understand how food insecurity has

evolved. A study by Akbari et al. (2022) analyses food security research from the middle of the 20th century to 2020 using computer-based system methodologies in order to evaluate its development and pinpoint future directions. concerns about the effects of Malthusian theories after World War II, especially with regard to population growth and the availability of natural resources. initially aided in the expansion of the field, which has since been strengthened by the world's population growth and environmental restrictions on food production. Poverty, harsh weather, and geopolitical concerns are some of the causes of food insecurity, which is made worse by problems with food availability, living expenses, distribution, and wastefulness. Recent research has shifted the focus from global to local factors by emphasising household and individual levels. The study aims to answer several questions about popular themes, well-known works, current trends, cooperative patterns, and the theoretical underpinnings of food security research. A suggested model with a focus on sustainable agriculture is presented in the conclusion for potential study participants.

At the same time, other scholars have looked at a similar summary of this development, concentrating on the relationship between food availability and warfare. Given our current concerns about the effects of World War I, it could hurt justice, health, and other aspects of life. The important relationship between food insecurity and conflict, which is intimately related to a number of UN Sustainable Development Goals, such as peace, justice, functional institutions, and the eradication of hunger, is examined in Shemyakina's (2022) paper. Global food shortages are greatly worsened by armed conflicts, including civil wars and localised violence. Conflict-affected areas are home to about 60% of undernourished people and 80% of acutely malnourished children. Climate-related disasters like hurricanes and tornadoes worsen the situation in these areas, adding to the already fragile economies and populations. Haiti's struggles with economic vulnerability, natural disasters, and political instability serve as an example of how unstable governments marked by poor governance and ongoing conflict often experience protracted food shortages.

2.3 Conceptual Framework

In this conceptual framework, food insecurity serves as the independent variable influencing financial literacy, time constraints, and food behaviour. Financial literacy can be defined as the income and access to financial education resources, while time constraints are limitations of time in getting food access. Understanding these relationships can inform targeted interventions and policies aimed at addressing food insecurity and its associated impacts on financial literacy, time constraints, and food behaviours. Figure 2 shows the conceptual framework of this study.

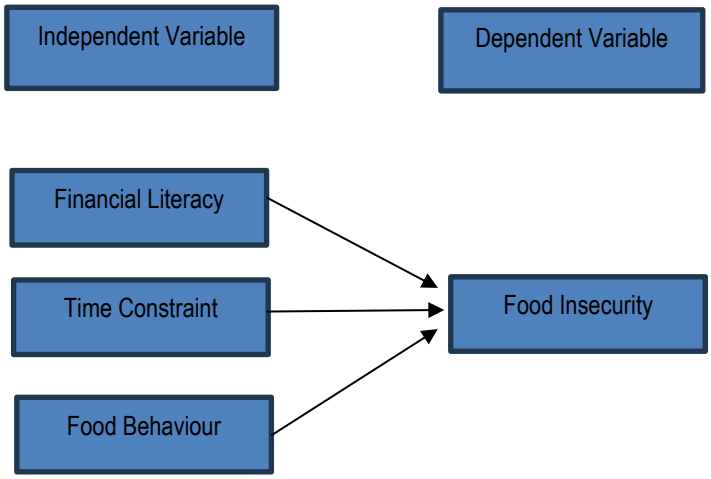

Fig. 2: Conceptual framework

3.0 Research Methodology

A cross-sectional quantitative survey approach will be used in this study to investigate the factors influencing food insecurity among Universiti Teknologi MARA (UiTM) Shah Alam students. Through organised data collection tools and statistical techniques, quantitative research is selected for its ability to systematically measure, quantify, and analyse variables related to food insecurity (Wilson, 2019). In this study, the students serve as the unit of analysis, which will specifically look at the factors that lead to food insecurity among UiTM Shah Alam undergraduate students. The study's goals, data collection strategies, sample demographics, and research methodologies all influence the ideal sample size (Malterud et al., 2016). In order to look into the factors influencing students' food insecurity, this study will only look at the UiTM Shah Alam Campus. Stratified random sample techniques were used in this study to determine the final result.

4.0 Results and Discussion

4.1 Demographic Profile

This study involved a total of 400 respondents from Universiti Teknologi MARA (UiTM) Shah Alam. The demographic characteristics collected included gender, age, ethnicity, year of study, living arrangements, source of funding, origin, number of siblings, and household income. Out of the total respondents, 59.3% were female (n = 237), while 40.8% were male (n = 163). This gender distribution reflects

the general trend of higher female enrolment in Malaysian public universities, including UiTM. A majority of students lived off-campus (44.5%), followed by on-campus residents (31.5%), and those living with parents (24.0%). This indicates that a significant portion of students may be managing their own food and housing costs, potentially impacting their food security status. In terms of financial support, 33.3% of the students relied on PTPTN loans, while 21.8% received JPA scholarships. A notable portion also depended on MARA loans (14.5%), own funding (25.8%), and other sponsors (4.8%). The ethnic breakdown showed that 74.0% were Malay, while 26.0% were from Sabah, Sarawak, or mixed ethnicity. Most respondents were between 22 to 30 years old (55.3%), while 44.8% were in the 18 to 21 age group. The majority of respondents were in their 3rd year (34.8%), followed by 2nd year (31.8%), 1st year (20.3%), and 4th year students (13.3%). The representation from all academic years allows for a more balanced perspective of food insecurity across the university journey. In terms of geographical background, most students came from urban areas (49.3%), while 26.5% were from rural areas and 24.3% from semi-urban locations. This distribution may reflect varying levels of exposure to food accessibility, cost of living, and family income. Most students had between 4 to 6 siblings (46.8%), followed by those with 1 to 3 siblings (39.0%), and 7 or more siblings (14.2%). Most students (40.3%) came from M40 households, with income between RM5,251 and RM11,819. Another 38.5% belonged to the B40 income group, while only 21.3% were from the T20 (high-income) category.

Table 1. Demographic Profile

Profile	Frequency	Percentage
Gender		
Male	163	40.8
Female	237	59.2
Living arrangements		
On-campus	126	31.5
Off-campus	178	44.5
With Parents	96	24.0
Funding		
PTPTN (loans)	133	33.3
JPA (scholarships)	87	21.8
MARA (loans)	58	14.5
Own Funding	103	25.8
Other sponsors	19	4.8
Ethnicity		
Malay	296	74.0
Sabah/Sarawak/Mixed	104	26.0
Age		
18-21	179	44.8
22-30	221	55.3
Years of the study		
1st year	81	20.3
2nd year	127	31.8
3rd year	139	34.8
4th year	53	13.3
Origin		
Rural	106	26.5
Urban	197	49.3
Semi Urban	97	24.3
Number of siblings		
1-3	156	39.0
4-6	187	46.8
>6	57	14.2
Household Income		
B40 (less than RM5,250)	154	38.5
M40 (income between RM5,251 and RM11,819)	161	40.3
T20 (income of RM11,820 or more)	85	21.3

(Source: Data Analysis)

4.2 Main Findings

4.2.1 Objective 1: To determine the level of food insecurity among students in UiTM Shah Alam

Table 2. Descriptive Analysis

	N	Minimum	Maximum	Mean	Std. Deviation
FI_DV	400	1.00	5.00	2.6029	0.58148
FL_IV	400	1.57	5.00	3.3793	0.55482
TC_IV	400	1.00	5.00	3.0396	0.74982
FB_IV	400	1.11	4.56	2.8758	0.52457
Valid N (listwise)	400				

(Source: Data Analysis)

The descriptive analysis was conducted for the variables in this study, including the dependent variable (Food Insecurity – FI_DV) and the independent variables, Financial Literacy (FL_IV), Time Constraint (TC_IV), Food Budgeting (FB_IV) and Household Support (HS_MV). Descriptive statistics were used to examine the central tendency and dispersion of responses for the variables related to food

insecurity. The results show that the mean score for food insecurity (FI_DV) was 2.60 with a standard deviation of 0.58, indicating that, on average, students experienced a moderate level of food insecurity, with responses generally close to the mean. Among the independent variables, financial literacy (FL_IV) recorded the highest mean of 3.38 (SD = 0.55), suggesting that most students had a relatively good level of financial knowledge. The mean score for time constraint (TC_IV) was 3.04 (SD = 0.75), which means that people had a moderate amount of trouble managing their time for food-related tasks like cooking or grocery shopping. Food budgeting (FB_IV), on the other hand, had a mean score of 2.88 (SD = 0.52), which suggests that students weren't very good at planning or keeping track of their food costs. All of the standard deviations were less than 1, which means that the answers were consistent and didn't change a lot from person to person. The main difference was seen in time constraints, which showed that students had different experiences with how time limits their ability to get food and prepare it.

4.2.2 Objective 2: To identify the relationship between financial literacy, time constraints, and food behaviour with food insecurity among students in UiTM Shah Alam

A Pearson correlation analysis was conducted to examine the relationship between the dependent variable (food insecurity – FI_DV) and the independent variables: financial literacy (FL_IV), time constraint (TC_IV), food budgeting (FB_IV), and household support (HS_MV). The results show that food insecurity (FI_DV) is significantly correlated with all the independent variables at the 0.01 level (2-tailed). Specifically, financial literacy had a moderate negative correlation with food insecurity ($r = -0.442$, $p < 0.001$), indicating that students with higher financial literacy tend to experience lower levels of food insecurity. Similarly, household support was also negatively correlated with food insecurity ($r = -0.504$, $p < 0.001$), suggesting that stronger support from family or household members is associated with reduced food insecurity among students. On the other hand, time constraint ($r = 0.371$, $p < 0.001$) and food behaviour ($r = 0.528$, $p < 0.001$) both had positive correlations with food insecurity. All correlations are statistically significant and demonstrate that financial management skills, time availability, and family support are important factors influencing food insecurity among students in UiTM Shah Alam.

5.0 Discussion

The findings clearly demonstrate that UiTM Shah Alam students face a moderate degree of food insecurity. This shows that there is a considerable problem with food insecurity among students, and many are having trouble consistently getting enough wholesome meals. To mitigate food insecurity, financial literacy programs should be prioritized, as higher literacy is linked to lower food insecurity among students (Che Din et al., 2023; Rich, 2022. Students who experience this degree of insecurity may skip meals, turn to inexpensive but unhealthy options, or worry about their next meal, which may affect both their mental and academic health. Social media and online wellness groups may also motivate healthier food practices (Al Ali et al., 2021). The health of university students is significantly influenced by the interplay of food insecurity, financial literacy, time restrictions, and dietary choices. Hence, food insecurity cannot be overlooked in a university context, where students are supposed to be in a stable atmosphere that fosters their study and development, so these findings are concerning.

6.0 Conclusion and Recommendation

Structured, practical, and student-centered programs at UiTM Shah Alam can strengthen money management skills, improve food access, and support academic and psychological well-being. Equally important is addressing food behaviour, since poor eating habits are strongly correlated with food insecurity (Odoms-Young et al., 2023). Initiatives such as affordable cooking workshops, campus nutrition programs, and peer-led guides can encourage cost-effective and nutritious choices (Teggart et al., 2022). Despite its contributions, this study has several limitations, including the focus on students from UiTM Shah Alam, and the cross-sectional research design limits the generalisability of the findings and restricts the ability to establish causal relationships between food insecurity and the associated factors. Future research should consider longitudinal designs to better examine causal relationships between financial literacy, time constraints, food behavior, and food insecurity. Expanding the study to include multiple universities or diverse student populations would enhance generalizability.

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Paper Contribution to Related Field of Study

This paper contributes to the field of food insecurity by examining the complex relationship between environmental factors and food insecurity.

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