

# Food security and food coping strategies of urban and rural poor households in Indonesia: A systematic review

Hana FATIMAH<sup>1</sup>, Ali KHOMSAN<sup>1</sup>, Cesilia Meti DWIRIANI<sup>1</sup>, Annisa Utami SEMINAR<sup>2</sup>

*1 Department of Community Nutrition, Faculty of Human Ecology, IPB University, Bogor, West Java, Indonesia.*

*2 Department of Communication Science and Community Development, Faculty of Human Ecology, IPB University, Bogor, West Java, Indonesia.*

Recibido: 3/marzo/2025. Aceptado: 2/mayo/2025.

## ABSTRACT

**Introduction:** Poverty is one of the key factors influencing food security in both urban and rural areas. This condition affects the decision-making of poor households regarding the implementation of food coping strategies. The objective of this study is to systematically analyze the level of food security among poor households in rural and urban.

**Methods:** This study employs a systematic review approach following the guidelines of the Preferred Reporting Items for Systematic Reviews and Meta-Analysis (PRISMA). The selected articles were published between 2015 and 2025, covering peer reviewed and non-peer reviewed journals both in Indonesian language and English. Combination of food insecurity, food coping, poor household, rural, urban in Indonesian language and English were used to search the articles. The inclusion criteria for this study are as follows: (1) original articles relevant to the research topic, (2) studies conducted in Indonesia, (3) research focusing on poor households, (4) studies using an observational (cross-sectional) research design, (5) studies that include household food security measurement methods, (6) high-quality articles indexed in SINTA or Scopus, and (7) full-text articles accessible for review. The exclusion criteria include studies with research designs other than observational (cross-sectional), as well as opinion pieces, books, unpublished studies, or abstracts only. A search across seven electronic databases initially identified 2,552 articles using the specified keywords. Ultimately, 12 articles were selected for analysis.

**Results:** Total of 12 articles met the inclusion criteria, revealing differences in food security levels between poor households in urban and rural areas. Rural poor households tend to have greater food security compared to their urban counterparts. The food coping strategies adopted by poor households in rural areas are generally more effective in ensuring food security than those implemented in urban.

**Conclusion:** This study identifies disparities in food security between poor households in urban and rural areas. Poor households in rural areas tend to be more food secure due to greater access to food resources, while those in urban areas are more dependent on income and market conditions, making them more vulnerable. Poor households address food insecurity through various food coping strategies, including reducing food consumption, purchasing cheaper food, or relying on assistance. These strategies vary depending on regional conditions.

## KEYWORDS

Growth, Malnutrition, Nutritional status, Stunting.

## INTRODUCTION

Food is a fundamental human need closely linked to a nation's well-being. According to Indonesia Government Regulation (PP) No. 17 of 2015, food security is defined as the ability to meet food requirements at both national and individual levels, as evidenced by the availability of sufficient, safe, diverse, nutritious, and equitably distributed food. This condition is essential for fostering a healthy, active, productive, and sustainable life. Food security is attained when all individuals consistently have both physical and economic access to safe, adequate, and nutritious food that aligns with their dietary needs and preferences, enabling them to maintain an active and healthy lifestyle<sup>1,2</sup>.

## Correspondencia:

Ali Khomsan  
khomsanali@apps.ipb.ac.id

Food security consists of three key aspects: availability, accessibility, and utilization. Food availability pertains to the adequate provision of food in both quantity and quality to meet the needs of a population. Food accessibility refers to an individual's capacity to acquire food, either through economic means or physical access. Meanwhile, food utilization encompasses the ways in which individuals consume and manage available food to maximize its nutritional benefits<sup>3</sup>. These three aspects are used to assess and adjust the National Food Security Index (IKP) in evaluating food security and nutrition achievements at the district, city, and provincial levels<sup>3</sup>.

Several studies have identified factors influencing food security. Household income levels, family size, food prices, and nutritional knowledge play significant roles in determining food security<sup>4,5</sup>. Food availability and the average length of schooling for women over 15 years old significantly impact food security<sup>6</sup>. Food security is also related to household knowledge and nutritional status. Households with good nutritional knowledge will be able to improve their nutritional status and food security status<sup>7</sup>. Poverty affects food security due to insufficient access to food, leading to malnutrition. Poverty can cause people to have limited economic access to food, which can lead to food insecurity. Food insecurity can increase the risk of malnutrition. This is due to food insufficiency caused by limited household savings, thus increasing the risk of food insufficiency<sup>8</sup>.

Poverty exists in both urban and rural areas, but differences arise based on household characteristics and demographic factors. Rural and urban areas differ not only in terms of physical and environmental aspects but also in population characteristics and activities. In rural areas, poor households tend to improve their quality of life by increasing productivity and employment rather than through education. This is partly due to limited access to education and the fact that many rural occupations rely on skills passed down through generations. In contrast, education is highly valued and often mandatory in urban areas<sup>9</sup>.

According to data from Statistics Indonesia (BPS) in 2023, approximately 25.9 million people in both rural and urban areas experience hunger, with 9.36% of Indonesia's population classified as poor<sup>10</sup>. In 2024, urban poverty in Indonesia was recorded at 7.09%, while rural poverty stood at 11.79%<sup>11</sup>. This level of poverty restricts access to food, leading to hunger and food insecurity<sup>8</sup>.

Financial limitations among the poor hinder their ability to access safe, sufficient, and nutritious food<sup>12</sup>. This condition influences the decision-making of poor households regarding food coping strategies. Food coping strategies are measures taken by households to manage food shortages and reduced access to food<sup>13</sup>. Food coping strategies are typically adopted by family members when food access declines, ensuring household food security, particularly in terms of food availability<sup>14,15</sup>. In

such situations, individuals may utilize alternative resources to enhance their ability to obtain food, ensuring their own survival and that of their family members. The specific food coping strategies employed by households impact both the quantity and quality of their food consumption<sup>16</sup>.

## METHODS

This study adopts a systematic review methodology in accordance with the guidelines outlined in the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA). Relevant articles were identified through a comprehensive search across seven databases, including Publish or Perish 8, PubMed, MDPI, ScienceDirect, Scopus, Google Scholar, and Semantic Scholar. The selected articles were published between 2015 and 2025 in both English and Indonesian. The search was conducted from December 2024 to January 2025 using five keywords, applying the Boolean operators "AND" and "OR" as follows:

- a. ("urban food security") AND ("rural food security") AND ("household" OR "poor household") AND ("Indonesia" OR "Indonesian")
- b. ("urban food insecurity") AND ("rural food insecurity") AND ("household" OR "poor household") AND ("Indonesia" OR "Indonesian")
- c. ("urban food coping") AND ("rural food coping") AND ("household" OR "poor household") AND ("Indonesia" OR "Indonesian")
- d. ("ketahanan pangan perkotaan") AND ("ketahanan pangan perdesaan") AND ("rumah tangga" OR "rumah tangga miskin") AND ("Indonesia")
- e. ("strategi food coping perkotaan") AND ("strategi food coping perdesaan") AND ("rumah tangga" OR "rumah tangga miskin") AND ("Indonesia")

The inclusion criteria for this study are as follows: (1) original articles relevant to the research topic, (2) studies conducted in Indonesia, (3) research focusing on poor households, (4) studies using an observational (cross-sectional) research design, (5) studies that include household food security measurement methods, (6) high-quality articles indexed in SINTA or Scopus, and (7) full-text articles accessible for review. Meanwhile, the exclusion criteria include studies with research designs other than observational (cross-sectional), as well as opinion pieces, books, unpublished studies, or abstracts only.

All retrieved articles were imported into Mendeley and Covidence applications to identify and eliminate duplicates. The authors then performed a screening process by reviewing the titles and abstracts of the publications. During the final screening phase, the full text of each article was thoroughly reviewed to ensure compliance with the established inclusion and exclusion criteria. Data extraction and study as-

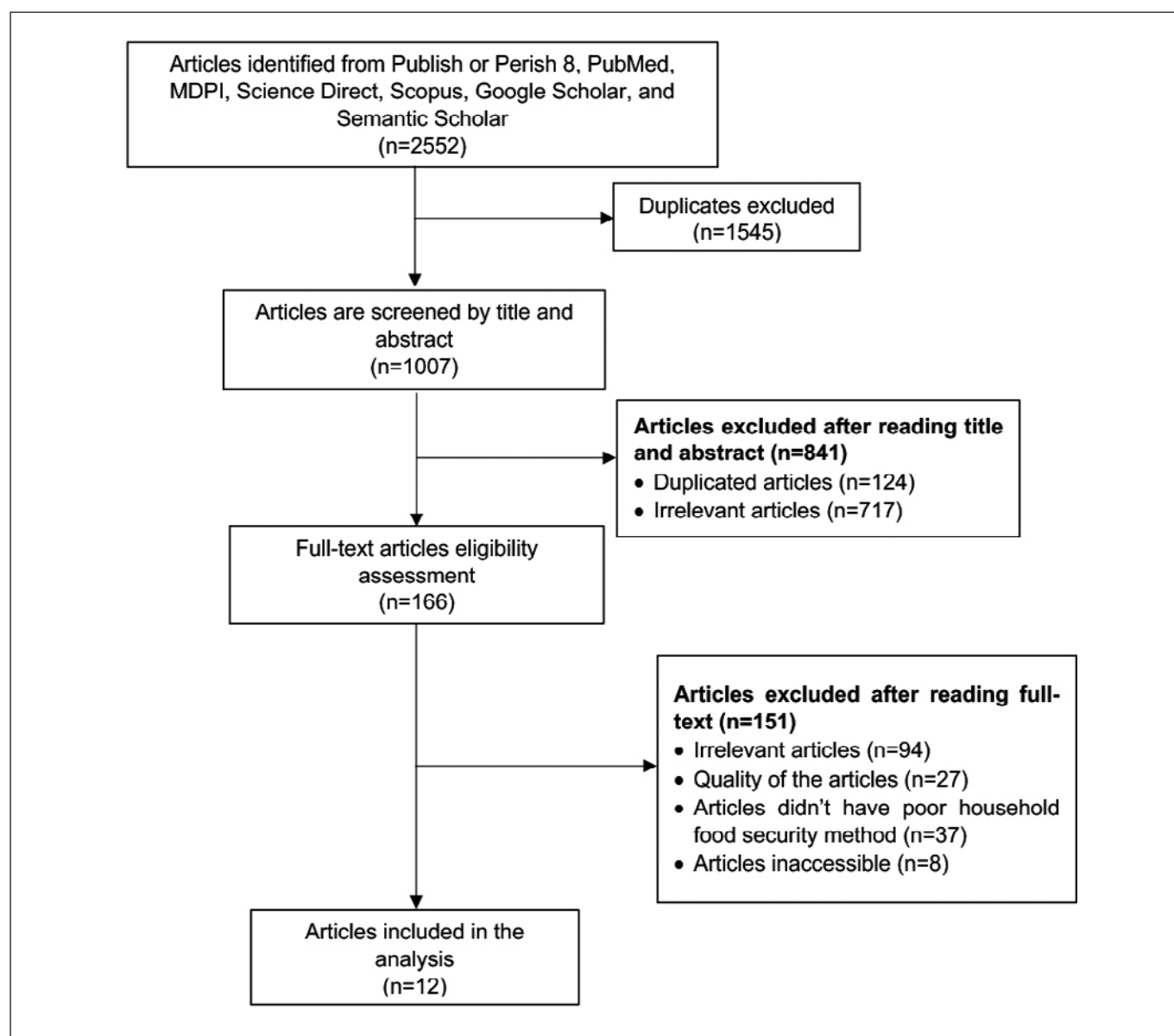
assessment were conducted independently by the authors, followed by a collaborative review of the findings. The selected articles were systematically organized into a table, detailing key information such as author names, publication year, sample size and age, research objectives, methods for assessing household food security and food coping strategies, as well as the relationship between food security and food coping strategies in both urban and rural areas.

## RESULTS

A search across seven electronic databases initially identified 2,552 articles using the specified keywords. After eliminating duplicates, 1,007 articles remained for further review,

where their titles and abstracts were assessed for relevance to the research objectives. This screening process resulted in 166 articles being shortlisted for further evaluation. The next stage involved a full-text review of these articles to determine their eligibility according to the established inclusion and exclusion criteria. Ultimately, 12 articles were selected for analysis. The process of the search, article selection stages, and the final articles meeting the criteria are illustrated in Figure 1.

The general characteristics of the studies included in this systematic review are presented in Table 1. A total of 12 studies conducted in Indonesia were identified. Six studies were found from Sumatra, including two from North Sumatra<sup>17,18</sup>, two from Jambi<sup>19,20</sup>, and two from Lampung<sup>21,22</sup>. Five studies



**Figure 1.** Flowchart of articles selection process by PRISMA

**Table 1.** Summary of selected studies

No.	Study references	Study design	Characteristic of subject	Location	Methods	Study purpose	Result
1.	Nasution <i>et al.</i> , 2023 <sup>17</sup>	Cross-sectional	82 rubber farmer respondents were obtained through simple random sampling technique.	Pagur Village, East Payanguban, Mandailing Natal, North Sumatra.	Interview questionnaire with Explanatory Research.	Explaining the relationship between coping strategies, income, and food security among rubber farmers.	<ul style="list-style-type: none"> <li>• The coping strategy variable has a significant and positive relationship with income and food security.</li> <li>• The better the coping strategies implemented, the higher the income and food security.</li> <li>• The food coping strategies employed by rubber farmers include growing fruits and vegetables and increasing access to food through government food assistance in the form of cash that helps meet daily needs.</li> </ul>
2.	Rifiana and Fauzi 2022 <sup>25</sup>	Cross-sectional	-	Banjar Regency.		To assess the food security of poor farming households in urban and rural areas of Banjar Regency using a new method (HFIAS and Maxwell).	<ul style="list-style-type: none"> <li>• Food security levels are higher in rural households compared to urban households, as measured using the HFIAS and Maxwell methods. - Household size is an important factor that influences household food security.</li> </ul>
3.	Rahman <i>et al.</i> , 2021 <sup>28</sup>	Cross-sectional	35 fishing household respondents were selected using simple random sampling.	Lantagi Village, Kulisusu District, North Buton Regency.	HFSSM-USDA	To assess the level of food security and examine the strategies employed by impoverished coastal households to fulfill their food needs.	<ul style="list-style-type: none"> <li>• The majority of respondents are classified as poor, expressing concern about not being able to meet their food needs due to limited income from fishing alone. Most of them have low food security status due to their dependence on fish catches as their primary source of income.</li> <li>• A large portion of respondents also do not prioritize a balanced, nutritious diet and often reduce meal portions or skip meals due to insufficient food availability and low income.</li> </ul>
4.	Junaidi <i>et al.</i> , 2020 <sup>19</sup>	Cross-sectional	A sample of 200 urban poor households from four selected districts/cities (50 samples from each) was obtained through a two-stage stratified sampling method.	Districts/cities in Jambi Province: Jambi City, West Jabung Regency, Sungai Penuh City, Sarolangun Regency.	Descriptive analysis using Structural Equation Modeling (SEM).	To analyze the influence of socio-economic-demographic characteristics of family (HH), social capital (SC) and economic coping strategies (EC) on level of food security (FS) in urban poor households.	<ul style="list-style-type: none"> <li>• The prevalence of food insecurity is high among impoverished urban households in Jambi Province.</li> <li>• Household characteristics and social capital play a significant role in shaping economic coping strategies; however, these strategies adversely affect food security.</li> <li>• The main recommendation is to enhance social capital and promote healthy eating patterns among poor urban households.</li> </ul>

**Table 1 continuation.** Summary of selected studies

No.	Study references	Study design	Characteristic of subject	Location	Methods	Study purpose	Result
5.	Junaidi <i>et al.</i> , 2022 <sup>20</sup>	Cross-sectional	200 sample of poor rural households from four selected villages (50 samples from each) using a two-stage stratified sampling method.	Jambi Province: Merangin Regency, Jabung Timur Regency.	Descriptive analysis using Structural Equation Modeling (SEM).	To analyze economic coping strategies and their association with the food security of poor rural households.	<ul style="list-style-type: none"> <li>Poor rural households in Jambi Province have low levels of both passive (cutting expenses) and active (earning income) economic coping strategies.</li> <li>Households engaged in food crop farming generally have higher food security than those involved in plantation crop farming.</li> <li>Family characteristics (such as household size, the proportion of working members, and income) affect food security for both food crop and plantation crop households, while economic coping strategies impact food security exclusively among households engaged in plantation crop farming.</li> </ul>
6.	Ambarsari <i>et al.</i> , 2020 <sup>23</sup>	Cross-sectional	45 heads of poor households were selected through simple random sampling from a population size of 944 poor households.	Cihaurbeuti District, Ciamis Regency.	Distributing questionnaires and conducting interviews	To examine: <ol style="list-style-type: none"> <li>1) The food security of poor households in Cihaurbeuti District, Ciamis Regency.</li> <li>2) The coping strategies employed by poor households in Cihaurbeuti District, Ciamis Regency.</li> <li>3) The correlation between coping strategies and the food security status of impoverished households in Cihaurbeuti District, Ciamis Regency.</li> </ol>	<ul style="list-style-type: none"> <li>The food security condition of poor households in Cihaurbeuti District, Ciamis Regency, is considered low, with a significant portion of food expenditures falling into the food insecurity category.</li> <li>The coping strategies employed by poor households in Cihaurbeuti District, Ciamis Regency, are generally classified as moderate.</li> <li>There is a significant positive relationship between the level of coping strategies and the food security level of poor households.</li> </ul>
7.	Anggrayni <i>et al.</i> , 2015 <sup>27</sup>	Cross-sectional	<ul style="list-style-type: none"> <li>A total of 62 households, consisting of 31 households participating in urban farming agriculture and 31 households participating in urban farming aquaculture.</li> <li>The respondents are mothers who have participated in the urban farming program for at least 1 year and have one child.</li> </ul>	Lakarsantri District, Surabaya.	<ul style="list-style-type: none"> <li>United States Household Food Security Survey Module (US-HFSSM).</li> <li>Reduced Coping Strategy Index (RCSI).</li> </ul>	To analyze the differences in food security and coping strategies between agricultural urban farming households and fishery urban farming households in Surabaya.	<ul style="list-style-type: none"> <li>There were no significant differences in food security between the agricultural urban farming households and the fishery urban farming households, although the agricultural group had a higher percentage of households with better food security.</li> <li>Agricultural urban farming households tend to have better food security and use coping strategies less frequently than fishery urban farming households.</li> </ul>

**Table 1 continuation.** Summary of selected studies

No.	Study references	Study design	Characteristic of subject	Location	Methods	Study purpose	Result
8.	Valešová <i>et al.</i> , 2017 <sup>18</sup>	Cross-sectional	192 rural households from two districts in North Sumatra Province.	Tobasa and Samosir districts, North Sumatra Province.	<i>Household Food Insecurity Access Scale</i> (HFIAS). • <i>Household Food Insecurity Access Prevalence</i> (HFIAP). • Household Dietary Diversity Score (HDDS). • Months of Adequate Household Food Provisioning (MAHFP).	1) to assess the food security status of rural households ( $N = 192$ ). 2) to identify the influence of selected factors on their food security condition. 3) to deliver outcomes which might play an important role in establishing appropriate policies and strategic interventions for the prevention and mitigation of food insecurity.	• More than 50% of households are classified as moderately or severely food insecure. • On average, households have a high HFIAS score of 6.11, low food diversity with an HDDS of 5.30, and are only able to meet food needs for about 11 months a year. • A higher level of education attained by the household head is correlated with a reduced prevalence of food insecurity, as assessed using the Household Food Insecurity Access Scale (HFIAS).
9.	Sari and Budiono 2024 <sup>26</sup>	Cross-sectional	78 households with inclusion criteria, namely mothers with toddlers aged 0-5 years who have lived in the area for at least $\pm 6$ months.	Gunungbrantik urban area, Semarang City, Central Java.	Food coping questionnaire.	To examine the relationship between food coping strategies and factors such as the parents' education level, mother's age, type of occupation, family size, household income, household expenditure, government assistance, and the mother's behavior in monitoring the growth and development of toddlers.	• A significant relationship exists between food coping strategies and factors such as the parents' education level, type of occupation, household income, household expenditure, family size, government assistance, and the mother's behavior in monitoring toddler growth and development. • The mother's age variable does not show a significant relationship.
10.	Delly <i>et al.</i> , 2019 <sup>21</sup>	Cross-sectional	51 fishing households.	Sukajaya Lempasing Village, Teluk Pandan District, Pesawaran Regency, Lampung Province.	Questionnaire.	1) To analyze the food security level of fishing households, measured using a cross-classification indicator between food expenditure share and energy adequacy. 2) To analyze the factors influencing food security levels. 3) To analyze efforts to improve food security through descriptive analysis.	• The majority of fishing households in Sukajaya Lempasing Village fall into the food-insecure category. • Factors influencing the food security level of fishing households include the education level of the head of household and food expenditure. • Efforts made by fishing households include borrowing food items such as staple foods, vegetables, side dishes, cooking oil, and sugar, as well as changing their eating patterns by reducing the quality or portion size of the food consumed.



**Table 1 continuation.** Summary of selected studies

No.	Study references	Study design	Characteristic of subject	Location	Methods	Study purpose	Result
11.	Damayanti 2018 <sup>24</sup>	Cross-sectional	<ul style="list-style-type: none"> <li>• 41 heads of households out of 131 in Kosekan Village.</li> <li>• 48 heads of households out of 199 in Tanjung Village.</li> </ul>	Kosekan Village and Tanjung Village, Gabus District, Pati Regency.	1) Current Population Survey (CPS) Food Security Supplement. 2) Statistical analysis of food security disparities.	1) To analyze tingkat ketahanan pangan rumah tangga miskin. 2) To analyze ketimpangan ketahanan pangan.	<ul style="list-style-type: none"> <li>• Tanjung and Kosekan villages fall into the category of food-secure households.</li> <li>• The level of food inequality in Tanjung and Kosekan villages is not significantly different, despite differences in disaster preparedness status. This is because the majority of residents are over 50 years old, have an elementary school education, and earn an average income of approximately IDR 750,000.</li> </ul>
12.	Sayekti <i>et al.</i> , 2022 <sup>22</sup>	Cross-sectional	92 poor households receiving the RASTRA (Rice for the Prosperous) program in Pringsewu Regency.	Pardasuka District and North Pagelaran District, Pringsewu Regency, Lampung Province.	Interviews and questionnaires.	To identify the key determinants influencing food coping mechanisms among impoverished households.	<ul style="list-style-type: none"> <li>• The primary strategy adopted by most households during food shortages is purchasing cheaper food and reducing both the quantity and variety of food consumed.</li> <li>• The primary factor influencing food coping mechanisms among low-income households is social conditions, encompassing the household head's age, years of formal education, the wife's nutritional knowledge, and the number of individuals engaged in coping strategies.</li> <li>• Formal education plays a crucial role in shaping survival mechanisms to mitigate household food insecurity.</li> </ul>

were conducted on Java Island, specifically in West Java<sup>23</sup>, three in Central Java<sup>24-26</sup>, and one in East Java<sup>27</sup>. One additional study was found in Sulawesi<sup>28</sup>. The study subjects consisted of poor households in both urban and rural areas. All studies employed a cross-sectional research design. Various methods were used to measure household food security. In this review, seven studies utilized the Household Food Insecurity Access Scale (HFIAS) and Maxwell method<sup>25</sup> or the Household Food Security Survey Module (HFSSM)<sup>28</sup>. Some studies combined multiple measurement methods, such as HFIAS, Household Food Insecurity Access Prevalence (HFIAP), Household Dietary Diversity Score (HDDS), and Months of Adequate Household Food Provisioning (MAHFP)<sup>18</sup>. Other studies applied the United States Household Food Security Survey Module (US-HFSSM) and the Reduced Coping

Strategy Index (RCSI)<sup>27</sup>. Additionally, six studies used self-developed interview questionnaires<sup>17,21,22,26,29</sup>, while two studies employed Structural Equation Modeling (SEM)<sup>19,20</sup>.

## DISCUSSION

Food security is defined as the sufficient availability of food at all levels, from national to individual, ensuring an adequate quantity and quality that is safe for consumption, diverse, nutritious, equitably distributed, and economically accessible. Furthermore, food security must be consistent with religious, cultural, and societal values to support individuals in maintaining a healthy, active, and productive life in a sustainable manner<sup>16</sup>. The pillars of food security include food availability, accessibility, and utilization. The factors affecting food secu-

ity, as defined by the Food Security Index (IKP), include the ratio of per capita normative consumption to net production, the proportion of the population living below the poverty line, the percentage of households allocating more than 65% of their total expenditure to food, the proportion of households without electricity access, the average years of schooling among women aged 15 and older, the percentage of households lacking access to clean water, the ratio of the population to healthcare workers relative to population density, the prevalence of stunting among children under five, and life expectancy at birth<sup>16</sup>.

Poverty is a key factor influencing food security, as measured by poverty line indicators. The primary driver of food insecurity is low income. When financial resources are constrained, households may be compelled to make difficult trade-offs, often leading to an inadequate food supply<sup>30</sup>. Several studies highlight differences in food security levels between poor urban and rural households. Ashari *et al.*, (2019)<sup>31</sup> found a disparity in comparison of food security levels between urban and rural households in South Sulawesi, as measured by the Household Food Insecurity Access Scale (HFIAS). Rural households had lower HFIAS scores than urban households, indicating that rural households were more food secure.

Food security levels among poor farming households in rural areas were higher than those in urban areas in Banjar Regency, as measured using HFIAS. Higher HFIAS scores indicated greater food insecurity in urban areas. A modified Maxwell method also demonstrated that urban households were less food secure than rural households. This suggests that food security levels in rural areas are better than in urban areas. Rural areas, which are typically agricultural regions, benefit from the ability to grow various crops and raise livestock, contributing to household food consumption. In contrast, urban areas face land constraints that limit food production during shortages<sup>25</sup>.

A study by Rahman *et al.* (2021)<sup>28</sup> examining food security among poor fishing households in North Buton Regency, Southeast Sulawesi, using the USDA food security scoring method, found that most poor fishing households were food insecure. Only 8.5% of coastal households had high food security, 20% had marginal food security, 45.7% had low food security, and 25.7% had very low food security. Similarly, Delly *et al.* (2019)<sup>24</sup> found that the majority of fishing households were food insecure (68.63%), vulnerable to food insecurity (3.88%), or severely food insecure (11.76%), with only 13.75% achieving food security. Coastal areas have a lot of food insecurity due to the very far accessibility of coastal households to markets or shopping centers. Most fishing households experience economic limitations, as they rely heavily on fish catches. As a result, they often struggle to consume nutritionally balanced meals due to low income. These households frequently cope with food shortages by re-

ducing portion sizes, purchasing cheaper food, or substituting food items<sup>32</sup>.

Damayanti (2018)<sup>24</sup> studied food security among poor households in flood-prone areas of Pati Regency, Central Java. The study found that most poor households in Tanjung and Kosekan villages—both flood-prone areas—were food secure. The Household Food Security Index in Tanjung Village categorized these households as food secure, with index values of 5.15 and 13.84, respectively. Generally, poor households in these villages could meet their food needs and allocate sufficient budgets for food. Most respondents in Tanjung Village had an income of  $\geq$  IDR 500,000, while others earned < IDR 500,000 but still met their food needs due to reduced family financial burdens, as the majority were over 50 years old and no longer had dependent children.

Low food security or food insecurity in poor households often leads to food coping strategies. Food coping strategies are household measures taken to address food insecurity. These strategies are typically employed when access to food declines, affecting household food security, particularly in terms of food availability<sup>15,14</sup>. Several factors, including parents' education level, occupation, household income, household expenditure, family size, government assistance, and maternal behavior, influence food coping strategies<sup>26</sup>.

A significant positive correlation ( $p = 0.002$ ) is observed between food coping strategies and food security among impoverished households<sup>12</sup>. Sayekti *et al.*, (2022)<sup>22</sup> found that during food shortages, most households coped by purchasing cheaper food and reducing the quantity and variety of consumed food. The primary determinant of food coping mechanisms in impoverished households is social conditions, encompassing the household head's age, years of formal education, the wife's nutritional knowledge, and the number of household members engaged in coping strategies. Among these factors, formal education exerts the most significant influence in shaping survival mechanisms to mitigate household food insecurity.

Food security in urban areas of Jambi Province was investigated by Junaidi *et al.*, (2020)<sup>19</sup>, revealing that the majority (56.5%) of poor urban households in the province experienced food insecurity, with only 7.5% classified as food secure. In contrast, Junaidi *et al.*, (2022)<sup>20</sup> found that rural households in Jambi, particularly those engaged in farming and plantation work, were predominantly food secure. Family characteristics and economic coping strategies played a significant role in determining food security. Key household attributes influencing food security included the education level of the household head, the proportion of working-age members, the percentage of employed household members, and per capita household income. To mitigate food insecurity, impoverished urban households in Jambi adopted moderate coping strategies, such as increasing income through addi-



tional employment and implementing cost-reduction measures. The more effective these strategies, the higher the income earned.

Food coping strategies among poor rubber farmer households in Pagur Village, East Panyabungan, Mandailing Natal, North Sumatra, found that these households employed active coping strategies, such as cultivating fruit trees (mangosteen, tamarillo, and coffee) and growing vegetables (chili and leafy greens) around rubber trees<sup>17</sup>. This approach allowed them to reduce food purchases. Additionally, food security was strengthened through faster access to government food assistance, both in the form of staple foods and cash transfers. The study found a significant relationship between coping strategies and food security, with an F-value of 2247.293 and a significance level of 0.000. Coping strategies contributed 98.2% to the income and food security of rubber farmers, enabling them to meet their daily needs and finance their children's education up to higher education levels<sup>17</sup>.

A study by Anggrayni *et al.*, (2015)<sup>27</sup> on urban farming households engaged in agriculture and fisheries in Surabaya found that most households were food insecure. Agricultural urban farming households were predominantly classified as food insecure without hunger, while fisheries-based urban farming households experienced more severe food insecurity, including hunger. This indicates that agricultural urban farming households had better food security than fisheries households due to higher household incomes. Urban farming profits were most evident when harvests were sold, with most agricultural urban farming households selling their produce at traditional markets or directly to neighbors. Conversely, fisheries-based households primarily consumed their harvest, leading to rapid depletion within days.

However, Valešová *et al.*, (2017)<sup>18</sup> found that households engaged in non-agricultural occupations tended to have better food security than those relying on agriculture or livestock production. Over 50% of agricultural households were classified as moderately or severely food insecure and could only meet their food needs for approximately 11 months per year. In terms of coping strategies, agricultural urban farming households rarely relied on food coping mechanisms (RCSI < 14), whereas fisheries households frequently did (RCSI ≥ 14). Common coping strategies included consuming less preferred foods, reducing portion sizes, decreasing meal frequency, limiting adult food intake, borrowing food, or relying on relatives.

Ambarsari *et al.*, (2020)<sup>33</sup> assessed food security among poor households in Cihaurbeuti District, Ciamis Regency, using household food expenditure share as an indicator. The findings indicated that poor households had high food expenditure shares, signifying low food security. These households employed moderate coping strategies, including increasing income, altering eating habits, improving immediate food access, changing food distribution and frequency, fasting, and

securing immediate funds for food purchases. A significant relationship was observed between coping strategies and food security levels among poor households in Cihaurbeuti District, Ciamis Regency.

## CONCLUSION

This study highlights disparities in food security levels between impoverished households in urban and rural areas. Rural households generally experience greater food security due to better access to food resources, particularly from the agricultural and livestock sectors. In contrast, urban households rely predominantly on income and market access to fulfill their food needs, making them more susceptible to food insecurity. Key determinants of food security include income levels, household size, food prices, the education level of the household head, and access to social assistance. In response to food insecurity, poor households adopt various coping strategies, such as reducing food quantity and quality, purchasing lower-cost food, and depending on government assistance or social networks. These coping mechanisms also vary based on geographical conditions and livelihoods, with households that have access to natural resources demonstrating greater resilience compared to those dependent on informal sector employment in urban areas. Therefore, policies aimed at strengthening food security should be region-specific, prioritizing improvements in economic access, diversification of food sources, and reinforcement of social assistance programs for vulnerable populations.

## ACKNOWLEDGEMENT

The authors would like to extend their heartfelt thanks to the Neys-van Hoogstraten Foundation, the Netherlands for funding this research and to the Department of Community Nutrition, Faculty of Human Ecology, IPB University for their support throughout the study.

## REFERENCES

1. Food and Agriculture Organization. *The State of Food Insecurity in the World*. Washington DC. FAO. 2003.
2. Syafani TS, Sayekti WD & Zakaria WA. Food coping strategies of beneficiary households receiving raskin (rice for the poor) in Pringsewu Regency (*Bahasa: Food Coping Strategy Rumah Tangga Sasaran Penerima Manfaat Beras Sejahtera Di Kabupaten Pringsewu*). *Indones. J. Socio Econ*. 2019;1: 61–71.
3. National Food Agency. *Food Security Index 2022 (Bahasa: Indeks Ketahanan Pangan tahun 2022)*. Jakarta. 2022.
4. Amalia AL, Hamyana, Saikhu M. Analysis of the food security levels of poor households and the factors affecting them (*Bahasa: Analisis tingkat ketahanan pangan rumah tangga miskin dan faktor-faktor yang mempengaruhinya*). *Jurnal Agriekstensia*. 2020;19(1): 70-77. doi: 10.34145/agriekstensia.v19i1.927.

5. Saputro WA, Fidayani Y. Factors affecting the food security of farmer households in Klaten Regency (*Bahasa: Faktor-faktor yang mempengaruhi ketahanan pangan rumah tangga petani di Kabupaten Klaten*). *Agrica (Jurnal Agribisnis Sumatera Utara)*. 2020;13(2): 115-123. doi: 10.31289/agrica/v12i2.4078.
6. Muttaqin R, Usman F, Subagiyo A. Factors Affecting Food Security in Bungah District, Gresik Regency (*Bahasa: Faktor-faktor yang mempengaruhi ketahanan pangan di Kecamatan Bungah Kabupaten Gresik*). *Planing for Urban Region and Environment*. 2022;11(2): 149-160.
7. Damayanti HO. Food security levels in poor households in flood-prone areas (*Bahasa: Tingkat ketahanan pangan pada rumah tangga miskin di daerah rawan banjir*). *Jurnal Litbang*. 2018; 14(1): 15-26. doi: 10.33658/jl.v14i1.105.
8. Zakiah. Food Security and Poverty in Aceh Province (*Bahasa: Ketahanan pangan dan kemiskinan di provinsi Aceh*). *Analisis Kebijakan Pertanian*. 2016;14(2): 113-124. doi: 10.21082/akp.v14n2.2016.
9. Sevrianda I, Putri DZ. Characteristics of urban and rural poor households in West Sumatra (*Bahasa: Karakteristik rumah tangga miskin perkotaan dan pedesaan di Sumatera Barat*). *EcoGen*. 2018;1(3): 673-680. doi: 10.24036/jmpe.v1i3.5113.
10. Central Bureau of Statistics (*Bahasa: Badan Pusat Statistik*). Improvement in the Compilation of the Regional Development Index (*Bahasa: Penyempurnaan Penyusunan Indeks Pembangunan Regional*). Jakarta. BPS. 2023.
11. Central Bureau of Statistics (*Bahasa: Badan Pusat Statistik*). Poverty Statistics in Indonesia 2024 (*Bahasa: Statistik Kemiskinan di Indonesia 2024*). Jakarta. BPS. 2024.
12. Lybaws L, Renyoet BS & Sanubari TPE. Analysis of the relationship between food coping strategies and food security of poor households in Salatiga City (*Bahasa: Analisis hubungan food coping strategies terhadap ketahanan pangan rumah tangga miskin di Kota Salatiga*). *Amerta Nutrition*. 2022;6(1): 32- 43. doi: 10.20473/amnt.v6i1.2022.32-43.
13. Prakusya DA. Food Coping Strategy, Food Security, and Nutritional Status of Children in Fishing Households During the COVID-19 Pandemic (*Bahasa: Food coping strategy, ketahanan pangan, dan status gizi anak pada keluarga nelayan saat pandemi Covid-19*) [Thesis]. Bogor. Institut Pertanian Bogor. 2021.
14. Purlika. Study of Food Coping Mechanisms in Poor Households in Urban Areas (*Bahasa: Studi food coping mechanism pada rumah tangga miskin di daerah perkotaan*). [Thesis]. Community Nutrition and Family Resources Study Program. Bogor. Faperta IPB. 2024.
15. Usfar AA. *Household coping strategies for food security in Indonesia and the relation to nutrition status: A comparison before and after the 1997 economic crisis*. Germany: Verlag Grauer. 2002.
16. National Food Agency. Food Security Index 2023 (*Bahasa: Indeks Ketahanan Pangan tahun 2023*). Jakarta. 2023.
17. Nasution LF, Aslami N, Yanti N. Analysis of the relationship of coping strategies with income and food security of rubber farmers in Pagur Village, East Payabungan, Mandailing Natal, North Sumatra. *Management Studies and Entrepreneurship Journal*. 2023;4(6): 8772-8781.
18. Valešová L, Herák D, Shinoda K, Mazancová J, Verner V. The nexus between food insecurity and socioeconomic characteristics of rural households in Western Indonesia identified with Food and Nutrition Technical Assistance's approach by USAID. *Agronomy Research*. 2017;15(3): 921-934.
19. Junaidi J, Amir A, Amril A. Analysis of the socio-economic-demographic characteristics of the family, social capital and economic coping strategy in increasing food security for urban poor households in Jambi Province, Indonesia. *Dirasat, Human and Social Science*. 2020;47(2): 408-424.
20. Junaidi J, Amril A, Hernando R. Economic coping strategies and food security in poor rural households. *Agricultural and Resource Economics*. 2022;8(1): 30-51. doi: 10.51599/are.2022.08.01.02.
21. Delly DP, Prasmatiwi FE, Prayitno RT. Food Security Levels of Fishing Households in Sukajaya Lempasing Village, Teluk Pandan District, Pesawaran Regency (*Bahasa: Tingkat ketahanan pangan rumah tangga nelayan di Desa Sukajaya Lempasing Kecamatan Teluk Pandan Kabupaten Pesawaran*). *JIIA*. 2019;7(2): 141-148. doi: 10.23960/jiia.v7i2.3373.
22. Sayekti WD, Zakaria WA, Syafani TS, Mutolib A. Dominant factors on food coping mechanism of poor households in Pringsewu Regency, Indonesia. *Mal J Nutr*. 2022;28(3): 441-452. doi: E-mail: wuryaningsih.sayekti@gmail.com doi: 10.31246/mjn-2020-0099.
23. Ambarsari R, Isyanto AY, Yusuf MN. The relationship between coping strategies and food security levels of poor households in Cihaurbeuti District, Ciamis Regency (*Bahasa: Hubungan tingkat coping dengan tingkat ketahanan pangan rumah tangga miskin di Kecamatan Cihaurbeuti Kabupaten Ciamis*). *Jurnal Ilmiah Mahasiswa AGROINFO GALUH*. 2020;7(3): 693-704. doi: 10.25157/jimag.v7i3.4000.
24. Damayanti HO. Food security levels in poor households in flood-prone areas (*Bahasa: Tingkat ketahanan pangan pada rumah tangga miskin di daerah rawan banjir*). *Jurnal Litbang*. 2018; 14(1): 15-26. doi: 10.33658/jl.v14i1.105.
25. Rifiana, Fauzi M. Food Security of Poor Farmer Households in Urban and Rural Areas in Banjar Regency, Indonesia. *Int. J. Biosci*. 2022;21(4): 34-43.
26. Sari CI, Budiono I. Factors related to food coping strategies in urban poor households in 2022 (*Bahasa: Faktor-faktor yang berhubungan dengan koping strategi pangan pada keluarga miskin perkotaan tahun 2022*). *Indonesian Journal of Public Health and Nutrition*. 2024;4(2): 151-159.
27. Anggrayni FM, Andrias DR, Adriani M. Food security and coping strategies of urban farming households in agriculture and fisheries in Surabaya City (*Bahasa: Ketahanan pangan dan coping strategy rumah tangga urban farming pertanian dan perikanan Kota Surabaya*). *Media Gizi Indonesia*. 2015;10(2): 173-178. doi: 10.20473/mgi.v10i2.173-178.
28. Rahman A, Limi MA, Fyka SA. Analysis of food security status of fishermen's households on Kulisusu District North Buton Regency.

- Buletin Penelitian Sosial Ekonomi Pertanian Fakultas Pertanian Universitas Haluoleo*. 2021;23(2): 56-61.
29. Ambarsari R, Isyanto AY, Yusuf MN. The relationship between coping strategies and food security levels of poor households in Cihaurbeuti District, Ciamis Regency (*Bahasa: Hubungan tingkat coping dengan tingkat ketahanan pangan rumah tangga miskin di Kecamatan Cihaurbeuti Kabupaten Ciamis*). *Jurnal Ilmiah Mahasiswa AGROINFO GALUH*. 2020;7(3): 693-704. doi: 10.25157/jimag.v7i3.4000.
  30. Wight V, Kaushal N, Waldfogel J, Garfinkel I. Understanding the Link between Poverty and Food Insecurity among Children: Does the Definition of Poverty Matter?. *J Child Poverty*. 2015; 20(1): 1-20. doi: 10.1080/10796126.2014.891973.
  31. Ashari CR, Khomsan A, Baliwati YF. Validation of HFIAS (Household Food Insecurity Access Scale) in Measuring Food Security: A Case Study of Urban and Rural Households in South Sulawesi (*Bahasa: Validasi HFIAS (Household Food Insecurity Access Scale) dalam mengukur ketahanan pangan: kasus pada rumah tangga perkotaan dan perdesaan di Sulawesi Selatan*). *Penelitian Gizi dan Makanan*. 2019;42(1): 11-20. doi: 10.22435/pgm.v42i1.2417.
  32. Dewi P, Khomsan A, Dwiriani CM, Sukandar D. Household food security and children's food consumption diversity in the different agroecological regions in West Java, Indonesia. *Nutr Clin Diet Hosp*. 2024;44(4): 353-359. Doi: 10.12873/444khomsan.
  33. Ambarsari R, Isyanto AY, Yusuf MN. The relationship between coping strategies and food security levels of poor households in Cihaurbeuti District, Ciamis Regency (*Bahasa: Hubungan tingkat coping dengan tingkat ketahanan pangan rumah tangga miskin di Kecamatan Cihaurbeuti Kabupaten Ciamis*). *Jurnal Ilmiah Mahasiswa AGROINFO GALUH*. 2020;7(3): 693-704. doi: 10.25157/jimag.v7i3.4000.