

Food Safety And Choices Among Workers: Socio-Economic Dynamics And Food Choice Motives

Desak Dwi Asthri Cahyani¹, Dwi Putra Darmawan^{1,2} and Gede Mekse Korri Arisena^{1,2}
Udayana University, Bali, Indonesia¹
Center of Excellence for Food Sovereignty, Udayana University, Bali, Indonesia²

Corresponding Author : Desak Dwi Asthri Cahyani

E-mail : desakewik14@gmail.com

Submitted June 7, 2025 ; Approved June 22, 2025

ABSTRACT

BACKGROUND AND OBJECTIVES

Workers, especially those in the informal and low-income sectors, often face the dilemma of fulfilling their need for safe and nutritious food. The main problem that emerges is the economic limitations that encourage them to choose food based on price and practicality, even though these choices may ignore the safety and nutritional value of the food. In addition, access to healthy food is often limited due to unsupportive working conditions, low food literacy, and lack of regulations or supporting infrastructure in the work environment. This phenomenon indicates a gap between awareness of the importance of healthy food and the ability to realize it in daily practice. This study examines how socio-economic dynamics such as income, market access, education level, and cultural norms influence workers' food preferences and food safety considerations. It also aims to understand how risk perception and work environment conditions shape the workers' consumption patterns.

METHODS

The research method used in this study was a literature study utilizing online sources such as Google Scholar, Scopus, and Science Direct.

FINDINGS

The results of this study show that economic limitations often encourage workers, especially in the informal sector or those on low incomes, to prioritize food affordability and practicality. This often overrides nutritional quality and food safety, even though they are aware of risks such as contamination and poor hygiene standards. On the other hand, workplace conditions and risk perception significantly influence workers' food consumption behavior; workers with low-risk perceptions tend to prefer food practicality, while those with high-risk perceptions face a dilemma between maintaining health and limited resources.

CONCLUSION

The study concluded that integrating food safety aspects with consumer education programs and improving the quality of food infrastructure plays a crucial role in improving workers' welfare. These measures are expected to reduce health risks and support labor productivity. The findings also provide valuable insights relevant to agribusiness sector development and the design of public health initiatives.

Keywords: Agribusiness; Sustainability; Consumption; Food; Workers

INTRODUCTION

Food safety and food choice motives are the two key elements that form the food consumption patterns among workers (1). Food safety is defined as access to food that is not only sufficient in quantity but also safe from contamination and rich in nutrients to support physical health and work productivity (2). Meanwhile, food choice motives reflect the reasons behind workers' preferences in choosing food types, which can be influenced by economic, social, and cultural factors (3). Workers are a group that plays an important role in the economy but often face challenges in meeting safe and adequate nutritional needs. Variations in workers' food choices are highly dependent on their socio-economic context; for example, workers in the informal sector with low incomes may rely more on cheap local foods such as rice and simple side dishes, while office workers in urban areas tend to choose fast food or processed foods due to time constraints.

The decision making process towards food choices is influenced by dynamics such as income level, market accessibility, education level, and cultural norms inherent in the worker's community (4). For example, migrant workers in industrial areas often rely on canteens or street vendors, which sometimes leads to food safety risks due to poor hygiene standards. Meanwhile, workers with busy schedules, such as factory workers or public transport drivers, often prioritize practicality and affordability over nutritional quality, a pattern that reflects a compromise between daily needs and limited resources. (5) In their research stated that the link between food safety and choice motives has significant implications for workers' health, where safe food consumption can reduce the risk of foodborne diseases and improve well-being, while choices driven by economic factors can exacerbate long-term nutritional problems such as malnutrition or obesity.

Previous studies on workers' food safety and choice motives tend to focus on nutritional aspects or economic impacts separately, with little attention to how socio-economic dynamics holistically shape food consumption patterns and how food safety is taken into consideration in this process (6)(7)(8)(9)(10)(11)(12). However, comprehensive studies integrating food safety dimensions with choice motives within the framework of socio-economic dynamics are still limited, especially in the context of informal sector workers and migrant workers in developing countries such as Indonesia. The novelty of this study lies in its holistic approach, linking workers' food preferences simultaneously to economic, cultural and risk perception factors faced on a daily basis. The objectives of this paper are to (1) examine the awareness, risk perception, and shopping behavior of workers toward food safety and (2) examine the factors that influence the food choice motives of workers.

RESEARCH METHOD

The method used in analyzing objectives one and two of this study is a literature study. This literature study was conducted by reviewing theories and relationships or influences between variables from various books and journals through online library sources such as Google Scholar, Scopus, and Science Direct. The keywords used as the basis for searching the literature in this study are "food consumption, food safety, food, and workers." The flowchart of this study is as follows.

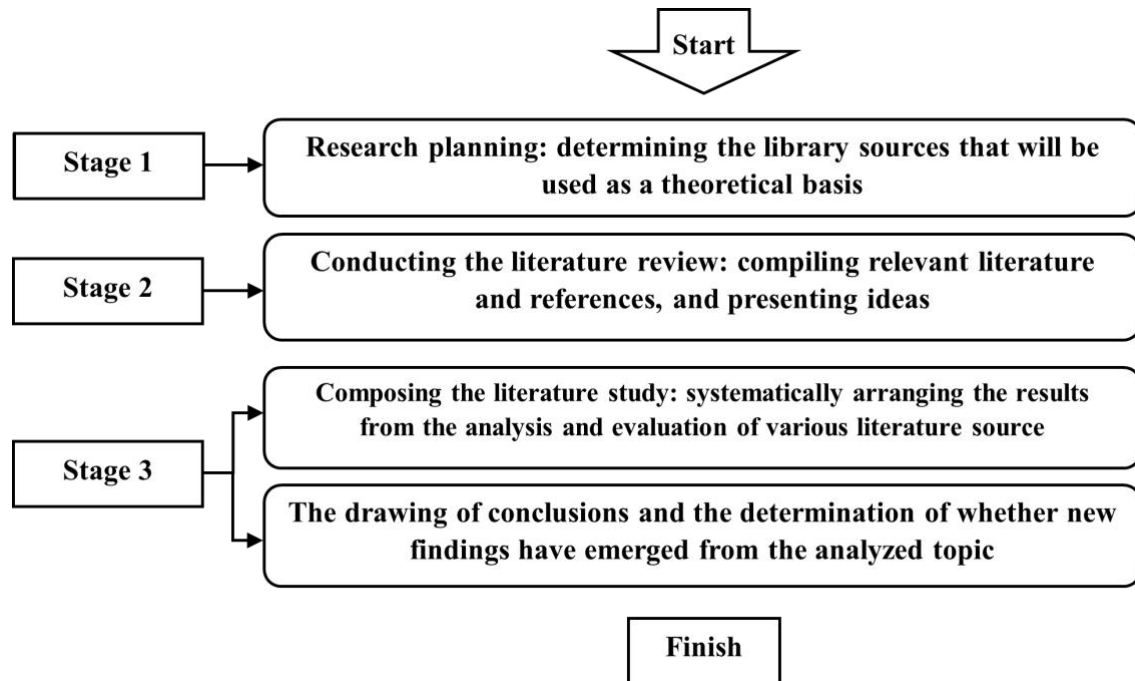


Figure 1. Flowchart of Research on Food Safety and Food Choices among Workers: Socio-Economic Dynamics and Food Choice Motives

The process of conducting this study began with planning, where the selection of sources became an important aspect of ensuring the accuracy and quality of the analysis conducted. The author selected the most relevant and reliable sources to build a strong theoretical foundation, understand the development of previous research, and identify gaps that could form the basis for further analysis. After the planning stage, the next step is to conduct a literature review that must meet several key criteria, namely that it must include relevant literature and references, and the presentation of ideas must be clear, coherent, and structured so that it is easy to understand and does not cause ambiguity.

The final stage of the literature review process is literature review reporting, where the analysis and evaluation results of various literature sources are systematically organized. At this stage, the authors conclude and determine whether there are any new findings from the analyzed topics. The resulting conclusions will reflect how workers' food safety and choice motives are viewed in terms of socioeconomic dynamics and food consumption patterns.

RESULTS AND DISCUSSION

Workers' Food Safety Awareness, Risk Perception and Shopping Attitudes toward Food Safety

Perceptions of food safety play an important role in influencing food choice motives, especially among workers who often rely on street food as a quick and economical option. A study by (13) revealed that perceived risks to food safety, such as concerns over the hygiene of raw materials, poor sanitation due to limited water facilities, and unclean sales environments, significantly moderated the relationship between food quality and the utilitarian value perceived by consumers. (14) stated that consumers with low risk perception tend to value the functional benefits of street food more, such as affordable price and adequate quality, thus increasing their intention to repurchase.

Meanwhile, a research by (15) in an informal settlement of Nairobi showed that casual workers face a more complex dilemma regarding food safety perceptions of animal foods (ASFs) such as milk, meat, chicken, eggs and fish. Their concerns are triggered by uncertainty of product origin, unhygienic handling practices and health risks from microbial and chemical contamination. Despite implementing mitigation strategies such as choosing trusted traders or boiling products, economic constraints often force them to continue consuming ASFs to meet nutritional needs.

Workers have a significant awareness of food safety risks, especially related to issues such as raw material hygiene, sanitation of the sales environment, and potential contamination that could endanger health (16). However, this awareness does not always lead to actions to avoid such risks, as their perception of risk and level of trust in food sources are strongly influenced by economic factors and practical daily needs. (17)(18) In their research, economic factors are the dominant element shaping consumption decisions, which often put workers in a dilemma between maintaining health and meeting basic needs with limited resources.

Workers with a high risk perception acknowledge that some food products are risky due to their unclear origin, unhygienic handling, or unsanitary sales environment. (19) stated that financial limitations often force them to compromise and consume the foods regardless. Workers with low risk perception tend to be more relaxed in dealing with food safety issues and trust street food as a reliable solution for their daily needs. (20) stated that for this group of workers, practical benefits such as affordability, accessibility and speed of serving often take precedence over concerns about long-term health risks.

These challenges show that awareness alone is not enough without economic solutions, to obtain safe food. For workers with high risk perception, there is an internal conflict between awareness of hazards and economic realities that limit their options, which may ultimately increase vulnerability to health problems. Meanwhile, workers with low risk perception may overlook potential hazards in favor of convenience, which can also pose long-term risks if food quality turns out to be inadequate. This situation is exacerbated by the lack of supporting infrastructure, such as access to adequate sanitation facilities at food points of sale or strict regulations on vendors, which makes it difficult for workers to break out of these risky consumption patterns. (21) Stated that healthy and nutritious food is a fundamental element in building quality human resources. Without good consumption patterns, individuals are vulnerable to health problems that can impact productivity levels and overall quality of life.

Influential Factors on Workers' Food Choice Motives

Food choices are a complex and dynamic process experienced by everyone (22). A person's pattern of food choices is influenced by various interrelated factors, ranging from health, cultural, and social aspects to individual preferences (23). (24) stated that food choices are influenced by interactions between individuals and their social environment, which includes cultural norms and resource accessibility. This shows that food choices are influenced by personal desires and the social and cultural context in which individuals are located. A person's food choices are influenced by various factors that interact with each other in a complex manner. (25) explained in their research that a person's food choice combines biological, personal, and environmental elements, as shown in Figure 2.

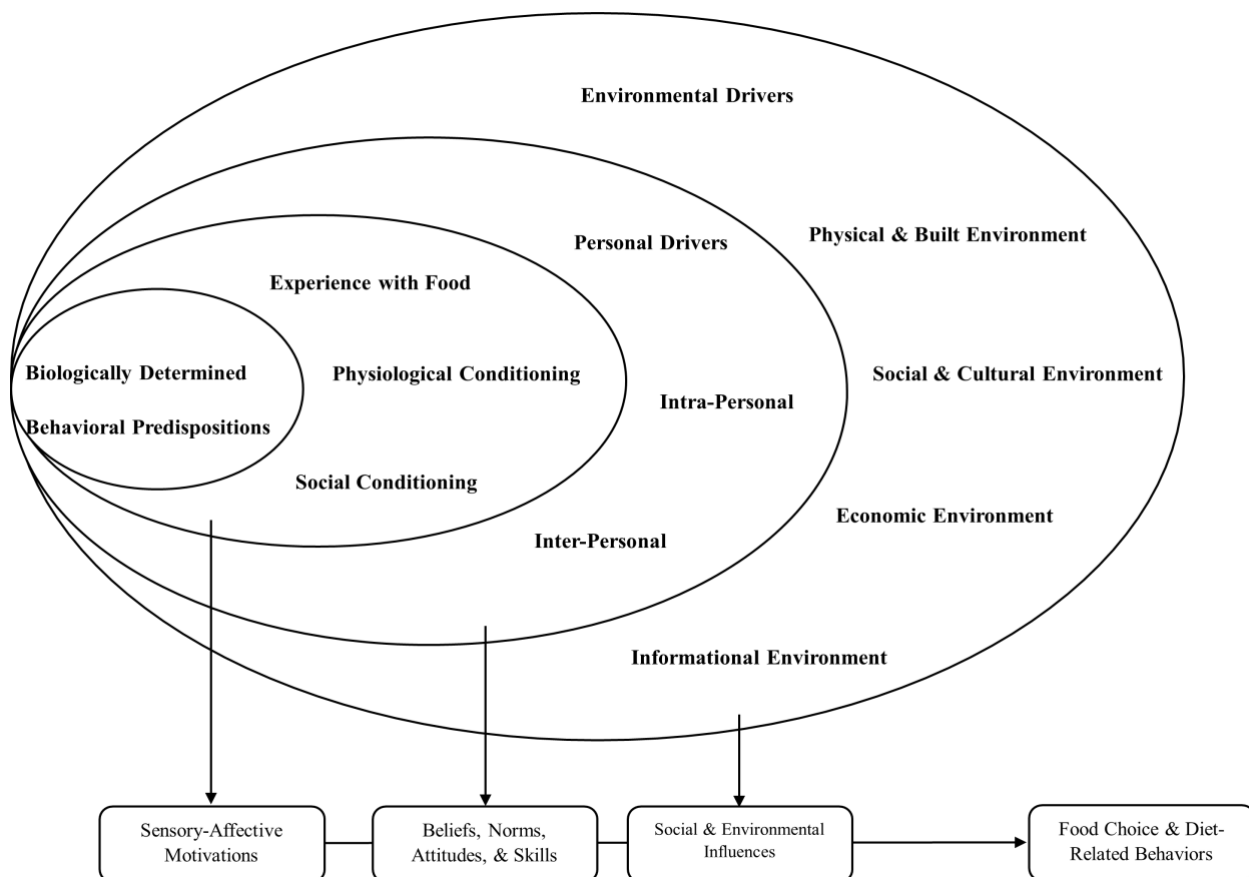


Figure 2. Social and Environmental Influences on Food Choice Patterns at Multiple Levels

Several factors influence a person's food choices, including biological factors, personal drivers, and environmental drivers (26). Biological factors involve a person's behavioral predisposition determined by innate factors (genetics); in choosing food, a person will have a preference for taste (sweet, salty, sour, bitter, and umami) that reflects the body's basic physiological needs. In addition, hunger and satiety mechanisms play a role in regulating consumption based on energy needs. In contrast, specific sensory mechanisms, such as satisfaction with flavor variations, also influence a person's food consumption patterns.

Personal drivers include several important dimensions, including individual experiences and physiological and social conditions. Individual experiences, such as positive or negative experiences with a particular food, determine future acceptance of that food. Physiological conditioning, such as familiarity with a particular food and learned perceptions of safety. Also, social conditioning occurs through interactions with family or social environment, such as parenting patterns and inherited cultural values that shape an individual's eating habits. Intra-personal dimensions, such as perceptions, attitudes, beliefs, motivations, values, and socio-cultural norms, provide the psychological foundation for making food-related decisions. In addition, interpersonal relationships, including the support and influence of family or social networks, shape one's food preferences.

Environmental factors, which are external dimensions, consist of several aspects. First, the physical environment, such as food availability and technology, can affect accessibility and food choices. Second, the social and cultural environment includes the influence of social relationships, cultural practices, social structures, and public policies regulating eating behavior. Thirdly, the economic environment, which includes resources, food prices, and time, can be a limiting or driving factor in food choices. Finally, the information environment influences media, education, and advertising on consumers' food perceptions regarding quality, nutritional value, and brand image.

Research by (27) highlights that there are two main dimensions of sustainable food choice motives, which are "general sustainability," which includes environmental aspects (such as carbon emissions and biodiversity), animal welfare (for example, free-range products), and social ethics (such as fair trade), and "local and seasonal" which focuses on preferences for local and seasonal products that support local economies and cultural authenticity. Demographic factors such as country, gender, age, and education level also influence these motives. In addition, sustainable food choices often compete with other motives such as convenience, taste, and price, limiting their applicability, especially for workers with limited time or low incomes. Consumer perceptions of authenticity, pro-environmental attitudes, and sustainable lifestyles reinforce this motive, although product availability in the market is a significant practical factor.

Research by (28) that researched food choice patterns for health care workers revealed that the factors that influence the food choice motives of health workers in hospital cafeterias are influenced by several things, namely product placement, product availability, nutritional information, price, logistical limitations, and collaboration with catering. (29), who researched food selection in the review of existing studies, emphasized that decision makers, be it governments, health organizations, or companies, emphasize the importance of providing the ability and empowering consumers to make healthier and more sustainable food choices. (30), in their research, said that economic factors such as food prices and availability also play an important role in people's food choices, especially for those with limited purchasing power.

Workers' food choice motives are influenced by various interrelated factors (31). Sustainability awareness, such as environmental impact, animal welfare, and local economic support, is one of the main drivers in food choice motives, especially for those concerned with social and cultural issues. However, demographic factors such as age, gender, education, and geographical location also shape workers' food choice preferences. Time constraints and low incomes often lead workers to prioritize convenience, taste, and price over sustainability, especially when suitable products are hard to find in the market. The work environment, such as the arrangement of products in the cafeteria, nutritional information, and cooperation with food providers, also play an important role. (32) stated that food infrastructure also plays an important role, such as the availability of canteens with guaranteed sanitation in the work environment can

increase workers' preference for safe and nutritious food, while reliance on street vendors with low hygienic standards reinforces economic motives and practicality despite the risks to food safety. (33) added that personal perceptions of authenticity and lifestyles that support environmental sustainability can reinforce these food choice motives. However, economic factors such as purchasing power remain key determinants. In addition, efforts by governments, organizations, or companies to provide access to and education about healthy and sustainable food choices also influence workers' decisions, suggesting that their choices depend not only on personal desires but also on enabling external conditions.

CONCLUSION

Workers' food security and food choice motives are influenced by the complexity of socio-economic dynamics, including income, market accessibility, education level, and cultural norms. The study revealed that workers' motives for food safety and choice are inseparable from their socio-economic dynamics. Wage and time constraints encourage compromises that often sacrifice food safety for practicality at work, while adequate food infrastructure can reinforce health and food sustainability motives. Economically constrained workers, such as informal or migrant workers, prioritize practicality and affordability over nutritional quality despite their awareness of food safety risks such as hygiene and contamination. Meanwhile, factors such as work environment, product availability, and risk perception also shape workers' food consumption patterns, where workers with low-risk perceptions prioritize convenience. In contrast, high-risk patients face a dilemma between health and limited resources. The results of this literature study are relevant in the fields of agribusiness and public health as they emphasize the importance of integrating food safety and consumer education in improving worker welfare, as well as the need for supporting infrastructure such as trader regulation and access to quality food to reduce health risks and support labor productivity.

RECOMMENDATIONS

Based on the literature study that has been conducted, several recommendations can be made for future research and as an applicative input. This literature study-based research has limitations in generalizing findings to specific local contexts and does not produce up-to-date primary data. Future researchers are advised to conduct empirical research using survey methods or case studies on specific groups to gain a deeper understanding of socio-economic dynamics and food choice motives contextually. Furthermore, intervention studies can be designed to test the effectiveness of nutrition education programs or improved access to safe and nutritious food in the work environment. Another weakness of the literature review is the potential for publication bias and coverage that may not capture the current dynamics thoroughly. Therefore, future researchers could broaden the scope of the literature to include relevant non-academic sources or conduct longitudinal trend analysis.

REFERENCES

1. Kosec Z, Sekulic S, Wilson-Gahan S, Rostohar K, Tusak M, Bon M. Correlation between Employee Performance, Well-Being, Job Satisfaction, and Life Satisfaction

- in Sedentary Jobs in Slovenian Enterprises. *Int J Environ Res Public Health*. 2022;19(16).
2. Nicholson CF, Stephens EC, Jones AD, Kopainsky B, Parsons D, Garrett J. Food security outcomes in agricultural systems models: Current status and recommended improvements. *Agric Syst* [Internet]. 2021;188:103028. Available from: <https://doi.org/10.1016/j.agry.2020.103028>
 3. Buksh SM, Wit JBF de, Hay P. A qualitative exploration of food choice motives of urban indigenous food gatekeepers in Fiji: Implications for the use of the food choice questionnaire. *Appetite* [Internet]. 2024;202. Available from: <https://doi.org/10.1016/j.appet.2024.107627>
 4. Lima JPM, Costa SA, Brandão TRS, Rocha A. Food consumption determinants and barriers for healthy eating at the workplace—a university setting. *Foods*. 2021;10(4):1–13.
 5. Wolska A, Stasiewicz B, Kaźmierczak-Siedlecka K, Ziętek M, Solek-Pastuszka J, Drozd A, et al. Unhealthy Food Choices among Healthcare Shift Workers: A Cross-Sectional Study. *Nutrients*. 2022;14(20):1–15.
 6. Put A van der, Ellwardt L. Employees' healthy eating and physical activity: the role of colleague encouragement and behaviour. *BMC Public Health*. 2022;22(1):1–11.
 7. Verain MCD, Snoek HM, Onwezen MC, Reinders MJ, Bouwman EP. Sustainable food choice motives: The development and cross-country validation of the Sustainable Food Choice Questionnaire (SUS-FCQ). *Food Qual Prefer* [Internet]. 2021;93. Available from: <https://doi.org/10.1016/j.foodqual.2021.104267>
 8. Teodoro MA, Silva WR da, Spexoto MCB, Júnior SI da S. Factors of food choice and nutritional intake of Brazilian older adults according sociodemographic and health characteristics. *Appetite*. 2024;199(April).
 9. Nona RV, Ambarawati IGAA, Darmawan DP, Budiasa IW. Realizing Regional Food Security Through Community Food Business Development in East Nusa Tenggara Province, Indonesia. *Int J Agric Syst*. 2019;6(2):146.
 10. Cahyani DDA, Arisena GMK. YouTube as a Source of Information for Agribusiness: Audience Perspective and Content Video Analysis. *Theor Pract Res Econ Fields*. 2023;14(2).
 11. Behbahani HB, Borazjani F, Sheikhi L, Amiri R, Angali KA, Nejad SB, et al. The Association between Diet Quality Scores with Sleep Quality among Employees: A Cross-Sectional Study. *Ethiop J Health Sci*. 2022;32(1):145–54.
 12. Anggraini N, Berliana D, Yolandika C. The Strength of Motives in Food Choosing Behaviour in Fishermen Based on Social Layers in the Coastal area of Bandar Lampung, Indonesia. *IOP Conf Ser Earth Environ Sci* [Internet]. 2022 Apr 1;1012(1):012007. Available from: <https://iopscience.iop.org/article/10.1088/1755-1315/1012/1/012007>
 13. Seo KH, Lee JH. Understanding risk perception toward food safety in street food: The relationships among service quality, values, and repurchase intention. *Int J Environ Res Public Health*. 2021;18(13).
 14. Simoglou KB, Roditakis E. Consumers' Benefit—Risk Perception on Pesticides and

- Food Safety—A Survey in Greece. *Agric.* 2022;12(2):1–20.
15. Bukachi SA, Ngutu M, Muthiru AW, Lépine A, Kadiyala S, Domínguez-Salas P. Consumer perceptions of food safety in animal source foods choice and consumption in Nairobi's informal settlements. *BMC Nutr.* 2021;7(35):1–15.
 16. Imtiyaz H, Soni P, Yukongdi V. Role of sensory appeal, nutritional quality, safety, and health determinants on convenience food choice in an academic environment. *Foods.* 2021;10(2).
 17. Hasan MJ, Uddin R, Rabiul Islam GM. Structural modeling to understand the relationship among food safety knowledge, attitude, and self-reported HACCP practices in restaurant employees in Bangladesh. *PLOS Glob Public Heal* [Internet]. 2022;2(5):1–13. Available from: <http://dx.doi.org/10.1371/journal.pgph.0000103>
 18. Darmawan DP, Arisena GMK, Sukendar NMC, Dewi NLMIM, Krisnandika AAK, Wiguna PPK, et al. Farmer Regeneration and Labor Requirements in Rice Farming : A Case Study of West Denpasar District , Denpasar City , Bali , Indonesia. *Org Farming.* 2024;10(3):185–201.
 19. Khan SAR, Razzaq A, Yu Z, Shah A, Sharif A, Janjua L. Disruption in food supply chain and undernourishment challenges: An empirical study in the context of Asian countries. *Socioecon Plann Sci* [Internet]. 2022;82:101033. Available from: <https://www.sciencedirect.com/science/article/pii/S0038012121000252>
 20. Isanovic S, Constantinides S V., Frongillo EA, Bhandari S, Samin S, Kenney E, et al. How Perspectives on Food Safety of Vendors and Consumers Translate into Food-Choice Behaviors in 6 African and Asian Countries. *Curr Dev Nutr* [Internet]. 2023;7(1). Available from: <https://doi.org/10.1016/j.cdnut.2022.100015>
 21. Iqbal J, Yu D, Zubair M, Rasheed MI, Khizar HMU, Imran M. Health Consciousness, Food Safety Concern, and Consumer Purchase Intentions Toward Organic Food: The Role of Consumer Involvement and Ecological Motives. *SAGE Open.* 2021;11(2).
 22. Baer NR, Schenk L, Bergmann MM, Deutschbein J, Knüppel S, Nickel D, et al. What differentiates the choice of certain foods? An exploratory analysis of food choice patterns among couples from the dyadic NutriAct Family Cohort in relation to social and health-associated determinants. *Food Qual Prefer* [Internet]. 2025;123(October 2024):105354. Available from: <https://doi.org/10.1016/j.foodqual.2024.105354>
 23. Markovina J, Stewart-Knox BJ, Rankin A, Gibney M, de Almeida MD V., Fischer A, et al. Food4Me study: Validity and reliability of Food Choice Questionnaire in 9 European countries. *Food Qual Prefer* [Internet]. 2015;45:26–32. Available from: <http://dx.doi.org/10.1016/j.foodqual.2015.05.002>
 24. Chen PJ, Antonelli M. Conceptual Models of Food Choice: Influential Factors Related to Foods, Individual Differences, and Society. *Foods.* 2020;9(12):1–21.
 25. Monterrosa EC, Frongillo EA, Drewnowski A, Pee S De, Vandevijvere S. Sociocultural Influences on Food Choices and Implications for Sustainable Healthy Diets. *Sage Journals.* 2020;41(25):59–73.
 26. Caso G, Vecchio R. Factors influencing independent older adults (un)healthy food choices: A systematic review and research agenda. *Food Res Int* [Internet]. 2022;158:111476. Available from:

- <https://www.sciencedirect.com/science/article/pii/S0963996922005348>
27. Onwezen MC, Reinders MJ, Verain MCD, Snoek HM. The development of a single-item Food Choice Questionnaire. Food Qual Prefer [Internet]. 2019;71:34–45. Available from: <https://doi.org/10.1016/j.foodqual.2018.05.005>
 28. Meeusen REH, Voorn B van der, Berk KA. Nudging strategies to improve food choices of healthcare workers in the workplace cafeteria: A pragmatic field study. Clin Nutr ESPEN [Internet]. 2023;53:126–33. Available from: <https://doi.org/10.1016/j.clnesp.2022.11.022>
 29. Fernqvist F, Spendrup S, Tellström R. Understanding food choice: A systematic review of reviews. Heliyon. 2024;10(12).
 30. D.P. Darmawan, Arisena GMK, Djelantik AAWS, Krisnandika AAK, Dewi NLMIM, Korri NTL, et al. Farmers' motivation and obstacles in the smallest available agricultural region. Glob J Environ Sci Manag. 2023;9(4):967–82.
 31. Amalia RN, Rahmiwati A, Fajar NA, Sari N. Preferensi pangan fungsional dan implikasinya terhadap kesehatan masyarakat: Tinjauan sistematis. Gizi Dan Kesehatan [Internet]. 2024;5(524):456–65. Available from: <http://dx.doi.org/10.30867/gikes.v5i2.1654>
 32. Prasanna S, Verma P, Bodh S. The role of food industries in sustainability transition: a review. Environ Dev Sustain. 2024;
 33. Wallnoefer LM, Riefler P, Meixner O. What drives the choice of local seasonal food? Analysis of the importance of different key motives. Foods. 2021;10(11).

AUTHOR CONTRIBUTIONS

1	Desak Dwi Asthri Cahyani, S.P.	
	Institutions	Magister student of Agribusiness, Faculty of Agriculture, Udayana University, Jl. PB Sudirman, Dangin Puri Klod, West Denpasar District, Denpasar City, Bali, Indonesia
	Contributions	Drafting the publication manuscript and theoretical justification, and conducting data analysis and data processing.
	Homepage	https://pddikti.kemdiktisaintek.go.id/detail-mahasiswa/84OKz0hYgdAvUf33wx5DHY11TrXgMZmEE9yPrdDX5TqDMNipoL66xuNvnlw3KomUmq82IA==
2	Prof.Dr.Ir.Dwi Putra Darmawan,MP	
	Institutions	Professor, S3 - Agricultural Sciences, Faculty of Agriculture, Udayana University, Jl. PB Sudirman, Dangin Puri Klod, West Denpasar District, Denpasar City, Bali, Indonesia
	Contributions	Coordinating the drafting of publication manuscripts, monitoring the drafting of publication manuscripts, and ensuring the achievement of manuscript objectives.
	Homepage	https://sinta.kemdikbud.go.id/authors/profile/6184883
3	Dr.Ir. Gede Mekse Korri Arisena, S.P.,M.Agb.,IPM	

Institutions	Lecturer, S1 - Agribusiness, Faculty of Agriculture, Udayana University, Jl. PB Sudirman, Dangan Puri Klod, West Denpasar District, Denpasar City, Bali, Indonesia
Contributions	Assisting in the processing and analysis of research data, contributing to the writing of scientific articles, and providing input in the interpretation of results.
Homepage	https://sinta.kemdikbud.go.id/authors/profile/6188678

GRAPHICAL ABSTRACT

