

Employee Awareness of Food Waste, Waste Separation and Recycling Practices, and Organizational Sustainability Performance: A Systematic Literature Review

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Keywords:	Abstract
Employee Awareness of Food Waste; Food Waste Management; Organizational Sustainability Performance; Systematic Literature Review; Waste Separation and Recycling Practices.	Food waste has become a critical sustainability issue affecting organizational efficiency, environmental quality, and long-term sustainable development, particularly within the hospitality industry. Although food waste management has been widely studied, the relationships among Employee Awareness of Food Waste (EAFW), Waste Separation and Recycling Practices (WSRP), and Organizational Sustainability Performance (OSP) remain fragmented in the existing literature. This study conducts a Systematic Literature Review (SLR) to identify research trends, thematic patterns, theoretical perspectives, methodological approaches, and research gaps related to these constructs. Following the PRISMA 2020 guidelines, 365 records were identified, of which 48 peer-reviewed journal articles published between 2020 and 2025 met the inclusion criteria. Bibliometric analysis using VOSviewer and thematic synthesis were employed to examine the selected studies. The findings indicate that employee awareness of food waste promotes waste separation and recycling practices, which, in turn, contribute to organizational sustainability performance. However, existing studies have largely examined these constructs independently, with limited research integrating them into a comprehensive conceptual framework, particularly within the hospitality industry. This review contributes to the literature by synthesizing current knowledge, identifying critical research gaps, and proposing directions for future research aimed at developing integrated food waste management strategies that enhance organizational sustainability performance.

INTRODUCTION

Food waste has emerged as one of the most significant sustainability challenges confronting modern organizations because it adversely affects environmental quality, economic efficiency, and social well-being. The increasing volume of food waste contributes to excessive resource consumption, greenhouse gas emissions, and operational inefficiencies, making food waste reduction an integral component of sustainable development and corporate sustainability strategies (Ghobakhloo et al., 2023). Consequently, organizations are increasingly expected to integrate food waste management into their sustainability agendas through more effective operational practices and performance measurement systems (Hariram, Mekha, Suganthan, & & Sudhakar, 2023).

Among various organizational settings, the hospitality industry has received considerable attention because food preparation, storage, processing, and food service activities generate substantial amounts of food waste throughout the operational cycle (González-Morales et al., 2022). However, food waste is not exclusive to hotels and restaurants, as similar challenges have also been reported in manufacturing, institutional catering, food processing, and other organizational settings. Previous studies suggest that ineffective food handling, inadequate waste monitoring systems, and limited employee engagement contribute to the generation of avoidable food waste. Consequently, organizations are increasingly encouraged to adopt integrated food waste management strategies that combine operational improvements, technological innovation, and employee participation to enhance resource efficiency and sustainability performance (Sigala et al., 2025).

Beyond technological and operational improvements, the effectiveness of food waste management largely depends on employee behavior (Ibrahim et al., 2025). Employees are directly involved in food receiving, storage, preparation, cooking, serving, and waste disposal, making their daily decisions and practices critical to minimizing food waste. Previous studies consistently indicate that employees with higher levels of food waste awareness demonstrate greater compliance with operational procedures, stronger environmental responsibility, and more sustainable workplace behaviors (Chen & Haron, 2024; Lu & Ko, 2023). Furthermore, organizational initiatives such as environmental training (Daud et al., 2025), green human resource management, and corporate social responsibility programs have been shown to strengthen employee engagement in food waste reduction and environmental sustainability (Lu & Ko, 2023).

Effective food waste management requires not only employee awareness but also the implementation of waste separation and recycling practices as essential operational activities. Proper waste segregation facilitates recycling, composting, food recovery, and other circular economy initiatives while improving resource utilization and reducing environmental impacts (Njoku et al., 2024). Previous studies have demonstrated that waste separation behavior is influenced by employees' attitudes, perceived behavioral control, organizational support, environmental knowledge, and workplace training (Sapawi et al., 2024). These findings indicate that successful waste management depends on the integration of behavioral and organizational factors rather than solely on technical waste disposal systems (Elangovan & Babu, 2025).

From an organizational perspective, improvements in employee awareness and waste management practices are expected to contribute to Organizational Sustainability Performance (OSP) (Ghardallou, 2022). Organizational sustainability extends beyond environmental performance by integrating economic, social, and governance dimensions to support long-term organizational resilience and competitiveness (Ghardallou, 2022; Mio et al., 2022). Previous studies consistently report that sustainability performance is strengthened by organizational capabilities, corporate sustainability strategies, innovation, organizational learning, and responsible management practices (Porajow et al., 2024; Rahi et al., 2022). Therefore, employee-driven waste management initiatives should be viewed as strategic organizational capabilities that contribute to sustainable organizational performance rather than merely as operational waste reduction activities (Liu & Yang, 2024).

Despite the rapid growth of research on food waste management and sustainability, the existing literature remains fragmented (Zimon, Arianpoor, & Salehi, 2022). Most studies have examined employee awareness, waste separation behavior, green human resource management, corporate social responsibility, or sustainability performance as independent research themes. Only a limited number of studies have attempted to explain how Employee Awareness of Food Waste (EAFW) influences Waste Separation and Recycling Practices (WSRP) and how these practices subsequently contribute to Organizational Sustainability Performance (OSP) within an integrated framework. Moreover, empirical evidence remains concentrated in specific sectors and geographical contexts, indicating the need for more comprehensive research that integrates behavioral, operational, and organizational sustainability perspectives (Tjahjadi et al., 2021).

Therefore, this study conducts a Systematic Literature Review (SLR) to synthesize the current body of knowledge concerning Employee Awareness of Food Waste (EAFW), Waste Separation and Recycling Practices (WSRP), and Organizational Sustainability Performance (OSP). By applying the PRISMA 2020 framework and bibliometric analysis using VOSviewer, this study aims to map the evolution of research and publication trends, identify dominant and emerging research themes, examine relevant theoretical perspectives and methodological approaches, identify existing research gaps, and develop a comprehensive understanding of the behavioral and organizational mechanisms that support sustainable food waste management. The findings are expected to contribute to the advancement of sustainability literature by providing an integrated understanding of the relationships among employee behavior, waste management practices, and organizational sustainability while offering practical insights for organizations, particularly those operating in the hospitality industry, seeking to develop more effective and sustainable food waste management strategies (Principato et al., 2023; Sauer & Seuring, 2023).

METHOD

This study employed a Systematic Literature Review (SLR) following the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA 2020) guidelines to systematically identify, evaluate, and synthesize previous studies related to Employee Awareness of Food Waste (EAFW), Waste Separation and Recycling Practices (WSRP), and Organizational Sustainability Performance (OSP).

The literature search was conducted using Boolean operators (AND and OR) based on keywords representing the three main research variables and their relevant synonyms. The search strategy was designed to identify publications relevant to the research objectives while maintaining adequate search coverage. The Boolean search strategy used in this study is presented in Table 1.

Table 1. Boolean Search Strategy

Variable	Boolean Search
Employee Awareness of Food Waste	("employee awareness of food waste" OR "food waste awareness" OR "employee awareness" OR "staff awareness") AND ("food waste" OR "food loss")
Waste Separation and Recycling Practices	("waste separation" OR "waste segregation" OR "waste sorting" OR recycling OR "recycling practices")
Organizational Sustainability Performance	("organizational sustainability performance" OR "corporate sustainability performance" OR sustainability performance OR "organizational sustainability")

The search process focused on identifying studies discussing food waste management from an organizational perspective, particularly those addressing employee awareness, waste separation and recycling practices, and organizational sustainability performance. The search was limited to peer-reviewed journal articles published in English between 2020 and 2025 to ensure that the selected studies reflected the most recent developments in the field.

Based on the objectives of this systematic literature review, four research questions (RQs) were formulated to guide the review process.

RQ1. What are the publication trends related to Employee Awareness of Food Waste, Waste Separation and Recycling Practices, and Organizational Sustainability Performance?

RQ2. What theories, research methods, and analytical techniques have been applied in studies concerning Employee Awareness of Food Waste, Waste Separation and Recycling Practices, and Organizational Sustainability Performance?

RQ3. How are Employee Awareness of Food Waste and Waste Separation and Recycling Practices associated with Organizational Sustainability Performance?

RQ4. What research gaps and future research opportunities can be identified from the existing literature?

These research questions served as the foundation for article selection, thematic classification, bibliometric analysis, and synthesis of the reviewed studies. The literature search was performed using several international scientific databases, namely Scopus, ScienceDirect, Springer, Wiley, SAGE, IEEE Xplore, Web of Science, and Google Scholar. The retrieved publications were exported into Microsoft Excel to facilitate duplicate checking, screening, and eligibility assessment. The article selection process followed the PRISMA 2020 framework consisting of four stages: Identification, Screening, Eligibility, and Inclusion, as illustrated in Figure 1.

Figure 2 presents the keyword co-occurrence network generated using VOSviewer based on the 48 selected articles. The visualization identifies four major research clusters. The red cluster is dominated by keywords related to waste, awareness, food, and production, indicating that previous studies have primarily focused on food waste management and waste reduction strategies. The green and blue clusters emphasize performance, employee performance, manager, and influence, reflecting the growing interest in organizational sustainability and employee-related factors. The network further shows that awareness acts as a connecting keyword between food waste management and organizational performance, suggesting that employee awareness plays an important role in supporting sustainable operational practices (Lu & Ko, 2023). However, the relationships among Employee Awareness of Food Waste, Waste Separation and Recycling Practices, and Organizational Sustainability Performance remain relatively fragmented, indicating opportunities for future research to develop a more integrated conceptual framework (Keddari et al., 2025; Nathalia et al., 2024; Vayona et al., 2024).

Table 2. Inclusion and Exclusion Criteria

	Inclusion Criteria	Exclusion Criteria
1.	Topic/Subject: Studies discussing Employee Awareness of Food Waste (EAFW), Waste Separation and Recycling Practices (WSRP), and Organizational Sustainability Performance (OSP).	Studies that do not address EAFW, WSRP, or OSP as the primary research focus.
2.	Population/Context: Studies conducted in organizational settings, particularly the hospitality, food service, manufacturing, service, or other sectors relevant to food waste management and sustainability.	Studies focusing exclusively on household, municipal, agricultural, or consumer food waste without organizational relevance.
3.	Study Design: Empirical studies using quantitative, qualitative, or mixed-method approaches.	Conceptual papers, literature reviews, editorials, perspective papers, book chapters, and conference proceedings.
4.	Publication Year: Articles published between 2020 and 2025.	Articles published before 2020.
5.	Language: English.	Publications in languages other than English.
6.	Publication Type: Peer-reviewed journal articles with full-text availability.	Articles without full-text access or duplicate publications.
7.	Database: Scopus, ScienceDirect, Springer, Wiley, SAGE, IEEE Xplore, Web of Science, and Google Scholar.	Publications indexed outside the selected databases or not meeting the study selection criteria.

Table 2 presents the inclusion and exclusion criteria applied to ensure the relevance, quality, and consistency of the selected studies. The predefined criteria were established to include empirical studies closely related to Employee Awareness of Food Waste, Waste Separation and Recycling Practices, and Organizational Sustainability Performance, while excluding publications that did not meet the research objectives or methodological requirements, thereby enhancing the reliability of the systematic literature review.

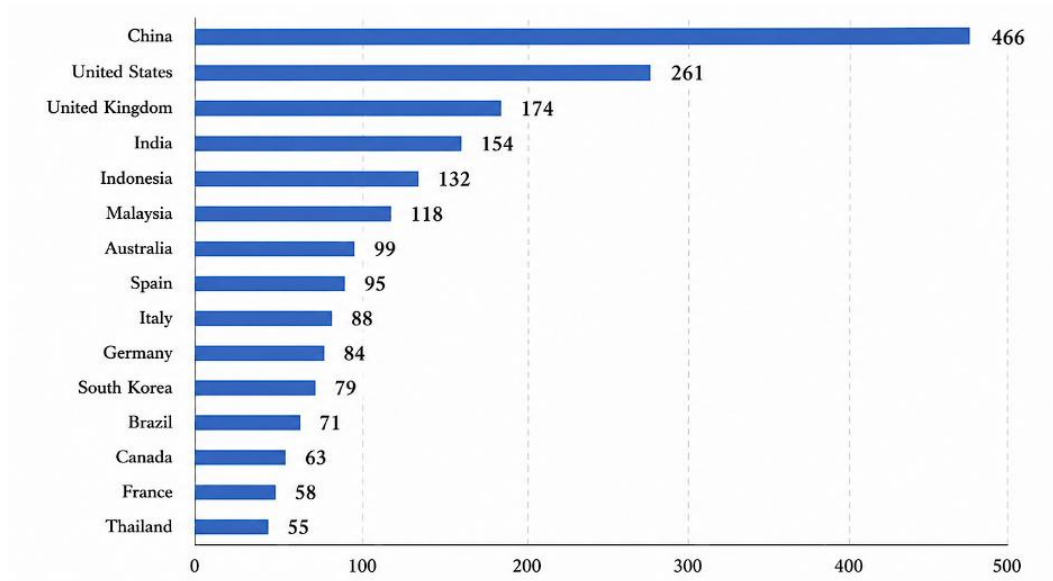


Figure 3. Researcher Country

Figure 3 illustrates the distribution of publications by researchers' countries. The results indicate that China has the highest number of publications (466), followed by the United States (261) and the United Kingdom (174). This distribution suggests that research on food waste management and sustainability has been predominantly conducted in developed and rapidly developing economies, reflecting their growing commitment to addressing environmental challenges and promoting sustainable organizational practices. Meanwhile, Indonesia ranks fifth with 132 publications, indicating increasing research attention to food waste and sustainability issues in the national context (Hariram, Mekha, Suganthan, & Sudhakar, 2023).

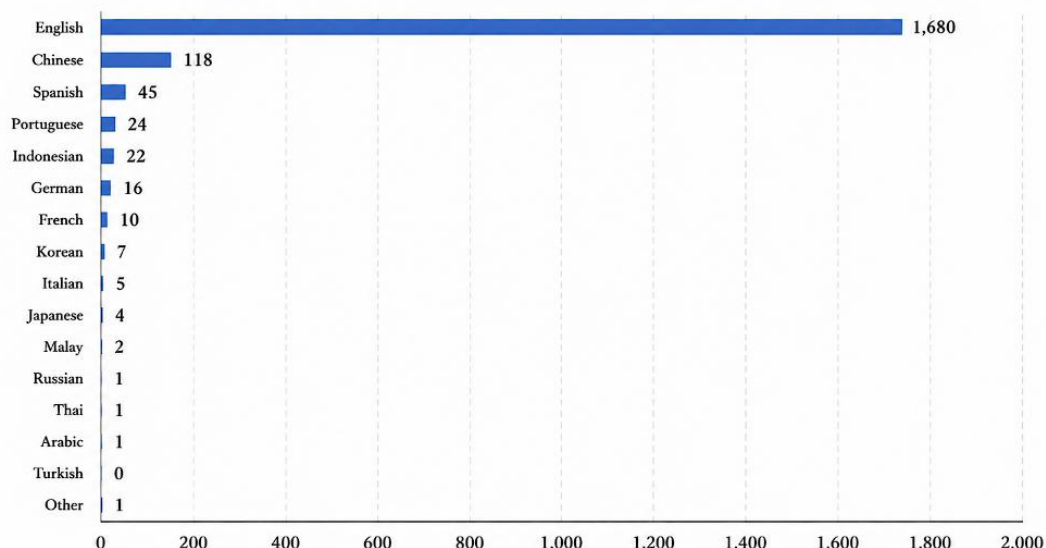


Figure 4. Language

Figure 4 presents the distribution of publications by language. The results show that English overwhelmingly dominates the literature with 1,680 publications, followed by Chinese (118) and Spanish (45), while publications in other languages remain relatively limited. This finding indicates that English has become the primary language for disseminating research on food waste management and sustainability, facilitating broader international collaboration and knowledge exchange. Consequently, this study restricted the review to English-language

publications to ensure the inclusion of high-quality and internationally accessible scientific evidence (Zimon, Arianpoor, & Salehi, 2022).

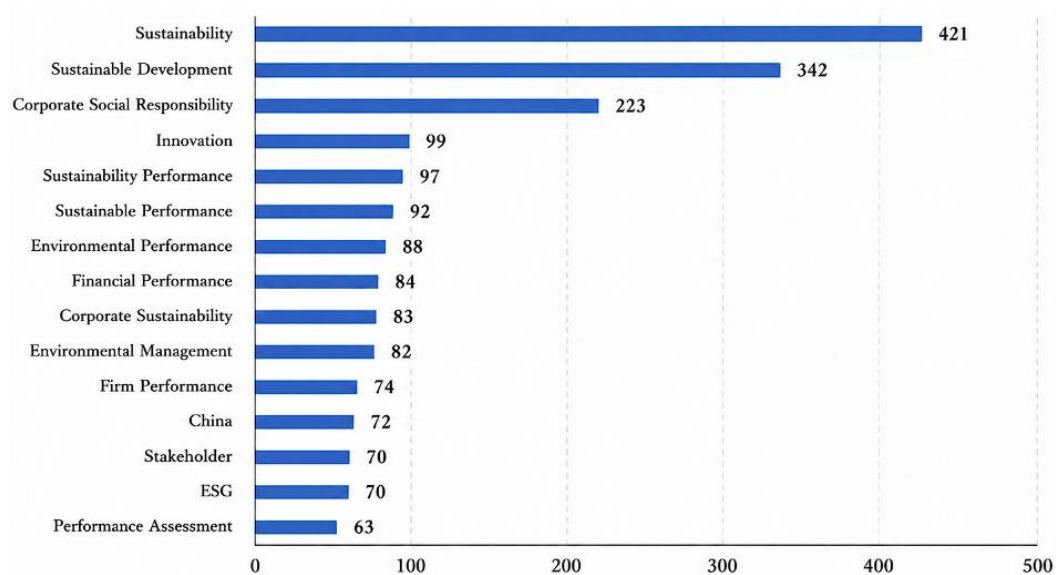


Figure 5. Keywords

Figure 5 illustrates the most frequently occurring research keywords identified from the selected publications. The results indicate that Sustainability (421 occurrences) and Sustainable Development (342 occurrences) are the dominant themes, followed by Corporate Social Responsibility (223 occurrences). Other frequently discussed topics include Innovation, Sustainability Performance, Environmental Performance, Financial Performance, and Environmental Management, demonstrating that previous studies have predominantly examined food waste and sustainability from broader organizational and strategic perspectives. In contrast, keywords directly related to Employee Awareness of Food Waste and Waste Separation and Recycling Practices appear less frequently, suggesting that these topics remain underexplored and present opportunities for further investigation.

CONCLUSION

This study conducted a Systematic Literature Review (SLR) to synthesize the existing body of knowledge on Employee Awareness of Food Waste (EAFW), Waste Separation and Recycling Practices (WSRP), and Organizational Sustainability Performance (OSP). Following the PRISMA 2020 guidelines, 48 peer-reviewed journal articles published between 2020 and 2025 were systematically identified, screened, and analyzed. The findings indicated that previous studies had predominantly focused on sustainability, sustainable development, corporate social responsibility, and organizational performance, whereas research integrating employee awareness with waste separation and recycling practices remained relatively limited. The bibliometric analysis further demonstrated that awareness served as an important connecting concept between food waste management and organizational sustainability, highlighting the critical role of employee behavior in achieving sustainable organizational outcomes. These findings supported the growing recognition that sustainability performance cannot be achieved solely through technological innovation or operational improvements but also requires employee awareness, pro-environmental behavior, organizational commitment, and sustainability-oriented management practices.

This review contributes to the literature by providing a comprehensive synthesis of current research trends, dominant themes, theoretical perspectives, and methodological approaches related to food waste management in organizational settings. More importantly, the review identifies a significant research gap concerning the integration of Employee Awareness of Food Waste, Waste Separation and Recycling Practices, and Organizational Sustainability Performance within a single conceptual framework. The findings also highlight the need to move beyond technology-oriented food waste research by incorporating employee-centered behavioral perspectives and organizational capabilities as key determinants of organizational sustainability performance. From a practical perspective, the findings suggest that organizations, particularly those operating in the hospitality industry, should strengthen employee awareness through continuous education, effective communication, environmental leadership, Green Human Resource Management (GHRM), and organizational policies that encourage appropriate waste separation and recycling practices. Such initiatives are expected to enhance operational efficiency while supporting long-term organizational sustainability objectives, strengthening employee engagement, and fostering a sustainability-oriented organizational culture.

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