

A Study on Resilient Food Redistribution Supply Chains through Social Entrepreneurship Initiatives in India

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Abstract:

While food waste and food insecurity continue to coexist as significant problems in India, there is a need to explore the connection between them and the ways in which this relationship could be enhanced for the benefit of people in dire need of resources. Social entrepreneurship initiatives in the hospitality industry have taken a vital role as a link between food waste producers and those in need. This work aims to investigate the impact of social entrepreneurship initiatives on creating food redistribution supply chain resilience in India. To conduct this research, a qualitative multiple-case study approach is used. Data collected from the secondary source, including journal articles, organisational reports, websites, and other published materials is analysed. In particular, four key initiatives – Feeding India, Robin Hood Army, No Food Waste and Roti Bank – are examined in terms of their business models, approaches to increasing resilience, technologies incorporated into the system, and involvement of communities in the process. It is discovered that, despite the lack of well-developed infrastructure, resilience in food redistribution systems in India lies predominantly in decentralised systems of volunteers, collaboration between organisations and individuals, adaptability to changes in the situation, and high levels of community involvement. Technologies played an enabling role in improving coordination and efficiency of operations. Nevertheless, the existence of certain barriers to the development of a more effective food redistribution system in India still remains true. Specifically, there is a shortage of sufficient cold chain infrastructure, efficient transport services and coordination processes.

Keywords: Food redistribution, supply chain resilience, social entrepreneurship, food waste, HORECA industry, sustainability, community participation, India.

Introduction

The paradox in India concerns the fact that while it hosts one of the largest agricultural production systems in the world, it faces severe issues related to food insecurity and starvation (Bharucha, 2018). Every year, India disposes of an estimated 67 million tons of food, which corresponds to over US \$14 billion worth of products (Bharucha, 2018). Some portion of the waste occurs in the form of excess preparation in hotels and restaurants, with up to 10% to 20% of prepared food being discarded (Bharucha, 2018). Social entrepreneurship initiatives have become important players in the food distribution chain that connects excessive amounts of food with the people who lack it (Aloysius & Ananda, 2023; Pazhanivel et al., 2024). These social entrepreneurship organizations need to operate in very unstable conditions, making resilience

an important feature of the supply chain. By definition, supply chain resilience means the ability to maintain flows and respond to disruptions (such as natural disasters and pandemics) by relying on the structure of the network and adaptive logistics (Umar & Wilson, 2023). This paper explores the methods used by social entrepreneurship initiatives to create resilient food redistribution supply chains in India with the help of multiple cases. The need to explore the issue arises from the necessity to examine the concept of supply chain resilience specifically for the context of social enterprises, whose resource capabilities differ significantly from those of profit-oriented businesses. As noted in Alexander (2024), social enterprises often suffer from limited management resources and low financing, forcing them to develop resilience based on broad networks and cross-sectoral cooperation. In particular, these approaches are important in India, where complicated climatic and market conditions make resource shortages a pressing problem and call for the implementation of sustainable business models that would reduce post-harvest losses and promote food security (Sengupta et al., 2024).

The purpose of this paper is to shed light on the ways in which social entrepreneurship initiatives are able to ensure supply chain resilience, considering their operation, collaboration with other companies and institutions, logistics coordination, and impact on sustainability. It is necessary to understand the mechanism of the issue due to the fact that about 40% of food in India gets wasted, creating economic, environmental, and social problems (H, 2025). It can be assumed that there is inefficiency within the food supply chain that is expressed in poor post-harvest management and infrastructure (Mangla et al., 2018; Mogale et al., 2022). Moreover, food loss and waste in India's perishable food supply chains are serious barriers to improving food security, sustainable development, and the prosperity of rural areas (Ghosh et al., 2026). These problems are compounded by the complexity of the food supply chain, which is characterized by perishability, seasonality, and fragmented landholdings, creating important environmental and social consequences (Krishnan et al., 2020). Hence, an effective strategy is needed for developing sustainable food supply chains to increase their resilience in order to create accountability, which links socio-economic and environmental goals (Sharma et al., 2025). The problem becomes more complicated when one takes into account the threat to food security due to the scarcity of resources, climate change, and the degradation of ecosystems (Mohanty et al., 2024a, 2024b; Wronka-Pośpiech & Twaróg, 2024). In turn, social entrepreneurship has been identified as a promising solution to the problem of food waste reduction and food security improvement in the country (Manzoor et al., 2024).

The complex role of social entrepreneurship is examined with regards to reducing food loss and waste while increasing food security through efficient food redistribution in India (Manzoor et al., 2024). The case studies focus on four popular Indian social entrepreneurship initiatives such as Feeding India, Robin Hood Army, No Food Waste, and Roti Bank. The research explores the strategies they use in their operations and collaborations with other companies, as well as problems that hinder them. The analysis will identify and explain how the strategies used by these initiatives allow creating a resilient food redistribution model. Thus, the paper focuses on the strategies of social enterprises aimed at overcoming problems caused by infrastructure inefficiencies in developing countries like India (Duarte et al., 2024).

Supply Chain Resilience

Resilience in food supply chains is categorized into inherent and adaptive forms (Umar & Wilson, 2023).

- **Inherent Resilience:** It results from robust structural foundation, buffer capacity, and strong social ties among participants in supply chains (Umar & Wilson, 2023). Such inherent social cohesion is the backbone of resilience that makes it efficient and flexible in times of crises (Sharma & Srivastava, 2015). On the other hand, adaptive resilience represents the capacity of supply chain actors to respond and overcome potential interruptions in the system via strategic adjustments through learning and innovation

(Ali et al., 2017). This duality reveals the relevance of creating both structurally and operationally resilient supply chains that would endure unexpected disturbances in the food redistribution networks (Umar & Wilson, 2023).

- **Adaptive Resilience:** Driven by transportation flows, storage capabilities, information sharing, and demand management (Umar & Wilson, 2023). Key strategies to mitigate disruptions include redundancy, responsiveness, and flexibility (Kumar et al., 2024). Disruptions in emerging economies such as India are relatively common and cause significant problems for product quality and transportation infrastructure (Prakash, 2022). Thus, designing sustainable food redistribution supply chains requires an approach that considers the uniqueness of disruptions associated with underdeveloped infrastructure and socio-economic conditions of countries like India (Kumar et al., 2024). This approach would involve combining robustness as well as the ability to adapt to different conditions and disruptions (Umar & Wilson, 2023), ensuring sustainable access to food in communities at risk. Digital innovations play an essential role in creating resilient food redistribution networks. This includes innovations designed to enhance collaboration, traceability, transparency, and visibility within the entire process (Jagtap et al., 2025; Kumar et al., 2023). Such technologies help share information between relevant parties, optimize logistics, and better meet demands for food resources (Dadi et al., 2021; Fatorachian et al., 2025). However, digital technologies alone are insufficient for creating sustainable and resilient food redistribution processes; strong collaboration and community engagement are also required.

Literature Review

Social Entrepreneurship and Food Loss in India

Social entrepreneurship in India is considered a promising approach to solving social problems that takes into account three aspects, namely economic, social, and environmental considerations (Suresha et al., 2025). This literature review will examine existing research dedicated to food waste, food insecurity, and the contribution of social entrepreneurship to creating resilient food redistribution supply chains with special emphasis on India. The focus will be made on the major challenges that cause loss in food supply chains, especially post-harvest loss accounting for most part of agriculture production in India (Dora et al., 2021). The use of modern technologies such as artificial intelligence (AI) and integrated data platform solutions will be discussed as the means that could help decrease these losses and optimize the redistribution process (Ghag et al., 2024; Sharma, 2024). Moreover, there will be analyzed the ways in which AI-powered systems have been developed to provide urgency-based routing and redistribution of surplus foods by optimizing logistics to deliver them with due consideration to urgency, perishability, and demand (Vijayalakshmi et al., 2025). Nonetheless, little attention has been paid by researchers to resilience and waste reduction as interdependent concepts in the studies devoted to the food supply chain. There is an urgent need to integrate these two objectives.

There is a clear lack of systematic approach and empirical evidence on the potential of using artificial intelligence as the tool to build resilient food redistribution supply chains, especially in the context of social entrepreneurship in developing countries. Therefore, this paper seeks to address this gap in knowledge and fill it by researching the contribution of social entrepreneurship to establishing resilient food redistribution supply chains with the use of AI and other digital technologies. Organizations active in the field of food waste management and redistribution of surplus food usually perform "front-line" tasks and collect food products from donors directly (e.g., restaurants, temples, and wedding parties), and then distribute it to beneficiaries immediately (Aloysius & Ananda, 2023).

Food Redistribution Supply Chain Structures

Supply chains for surplus food redistribution may comprise various triads, tetrads, and chains (Sundgren, 2020). They might be either centralized in case of ambient (shelf-stable) products or decentralized in case of chilled (perishable) items (Sundgren, 2020). In India, there exist about 187 surplus food redistributors operating individually with no coordination at all (Aloysius & Ananda, 2023). Information and communication technologies (ICTs), including mobile applications and hotlines, play the key role in connecting food donors and redistribution networks ("FOODBRIDGE – A WEB BASED PLATFORM FOR EFFICIENT SURPLUS FOOD REDISTRIBUTION," 2026). The digitalization will be instrumental in facilitating a match between the surplus food and the demand, something that is of paramount importance as the primary challenges facing food redistribution networks include high costs, high logistics costs, low efficiency, and poor coordination (Aloysius & Ananda, 2023).

Digital technologies become an integral component of the efforts of dealing with food waste due to their underdeveloped nature, including low digital readiness and logistics capacity (Verma & Chauhan, 2025). The use of mobile apps and food redistribution hotlines will be very beneficial when it comes to the linkage between food donors and volunteers (Aloysius & Ananda, 2023). Besides, the process of matching the demand for surplus food will be facilitated, and inefficiencies, including food wastage in the supply chains featuring perishable goods, can be prevented (Sawyer et al., 2023). Nevertheless, the lack of infrastructure and fragmentation of coordination pose substantial challenges in terms of scaling up food redistribution in developing countries (Broeder et al., 2026; Giroto & Beggio, 2025).

Although previous studies have examined food waste management, sustainable supply chains, and technological interventions separately, limited research has specifically explored how social entrepreneurship initiatives contribute towards building resilient food redistribution supply chains in the Indian context. Furthermore, comparative case-based analyses of Indian food redistribution initiatives remain limited. This study addresses this gap by examining the operational strategies, resilience mechanisms, and collaborative models adopted by selected Indian social enterprises involved in surplus food redistribution.

Research Objectives

1. To examine the operational models adopted by social entrepreneurship initiatives for food redistribution in India.
2. To analyse the resilience mechanisms within food redistribution supply chains.
3. To identify the major challenges affecting surplus food redistribution systems.
4. To examine the role of technology and community participation in enhancing redistribution efficiency.

Methodology

This study utilizes a qualitative multiple-case study design to analyse the resilience strategies of diverse social entrepreneurship initiatives in India. A multiple-case approach allows for a comparative analysis of different business models and operational environments. The selected cases were chosen based on their operational visibility, active engagement in surplus food redistribution, and availability of secondary data sources.

Limitations

The study is limited by its reliance on secondary data sources and selected case organisations. The findings may therefore not be generalisable across all food redistribution initiatives operating in India.

Case Study Analysis

1. Feeding India

Feeding India is currently present in 17 Indian cities and is located in Delhi and Kolkata (Sanyal et al., 2021). This is a technology-enabled food bank which uses the mobile application to coordinate surplus food donation from caterers and corporate companies and distribute it via Hunger Heroes volunteers' network (Agarwal et al., 2021; Sanyal et al., 2021). Thus, this case addresses issues related to food waste prevention and food insecurity via food recovery and redistribution (Singh et al., 2024). Feeding India relies on volunteer-based networks, and this model represents the community-centred approach to food redistribution (Sanyal et al., 2021). The application of technology to coordinate efforts within such networks is an essential element in scaling impact and finding solutions tailored to local needs in relation to food waste (Rogers & Dora, 2024).

2. Robin Hood Army

RHA is a volunteer organization operating in more than nine Indian cities (Sanyal et al., 2021; Singh et al., 2024). The organization operates using social media and very basic ICT to organize volunteer work. The resilience of this model is due to the decentralized nature of the organizational structure, allowing local chapters to act quickly in response to availability of surplus food by using volunteers and distributing food directly to those in need without requiring any cold storage facilities or complex logistics (Agarwal et al., 2021). Although this might make the process less effective for large quantities of surplus food, their reliance on volunteers and decentralization provides them with great adaptive capacity to respond to changes in circumstances and available resources. Innovative approach to informal networks and the lack of dependence on formal systems to provide solutions demonstrates that RHA offers a different kind of logistic resilience for food valorisation that departs from conventional approaches (Ouro-Salim et al., 2024).

3. No Food Waste

Following a model adopted by the Annakshetra initiative, No Food Waste uses 24/7 phone lines and smartphone applications for coordination of food donation from weddings and parties (Aloysius & Ananda, 2023). Its supply chain resilience is built upon the concept of front-line agility, where emphasis is put on fast distribution and, thus, does not require storage infrastructure, which is scarce in Indian cities (Sahoo et al., 2022). Front-line agile approach involves quick collection and delivery to beneficiaries in order to minimize the risk of perishable goods spoilage in the supply chain (Bolwig et al., 2021). This approach greatly minimizes reliance on costly logistics and cold-chain logistics and focuses on immediate consumption of recovered food (Katepallewar et al., 2024). In that, it is very similar to the effective approach that connects food donors and recipients and redistributes surplus food via community networks, bypassing supply chain infrastructure ("Global Waste Management Outlook," 2016). In addition, this model is in line with other successful approaches which seek to reduce food waste and mitigate food poverty through food re-allocation by connecting food donors with food recipients through community engagement (Karki et al., 2020).

4. Roti Bank

Notably, Roti Bank is the project of the foundation that supports the renowned Dabbawallas logistics network in Mumbai (Sanyal et al., 2021). Roti Bank uses the well-established, resilient logistics network to redistribute food with little additional costs, and demonstrates how "inherent resilience" of the established logistics networks may be utilized for beneficial purposes (Sanyal et al., 2021; Umar & Wilson, 2023). The model of integrating social entrepreneurship into existing cultural phenomena is promising and allows addressing many socio-economic problems efficiently. Roti Bank demonstrates that such integration allows efficient solutions to issues such as food security and surplus redistribution

(Reddy, 2024). Integration of advanced information technologies, such as SustainNet, may greatly contribute to efficiency of the food redistribution process, increasing agility and improving real-time coordination of food redistribution efforts (Singh et al., 2025).

Initiative	Operational Model	Key Resilience Strategy	Major Challenge
Feeding India	App-based redistribution	Volunteer flexibility	Cold-chain limitations
Robin Hood Army	Decentralized volunteer network	Community engagement	Scalability
No Food Waste	Hotline-based redistribution	rapid delivery	Logistics coordination
Roti Bank	Dabbawalla integration	logistics resilience	Existing delivery Limited coverage

The comparative findings further indicate that resilience in Indian food redistribution systems is predominantly socially embedded rather than infrastructure-driven. Unlike conventional commercial supply chains that depend heavily on centralized warehousing and sophisticated logistics systems, the analysed initiatives rely substantially on volunteer participation, decentralized coordination, and community-based operational flexibility. This demonstrates that social capital and collaborative networks function as critical resilience mechanisms within resource-constrained redistribution environments.

Findings

- Findings indicate that technology is a key enabler of resilience. For example, the Annakshetra scheme in Jaipur has introduced a 24-hour hotline along with an app for collecting food surplus from temples and restaurants (Aloysius & Ananda, 2023). These technological solutions are important to minimize food losses resulting from the information asymmetry between food providers and collectors (Sharma et al., 2022).
- Furthermore, digital interventions such as mobile applications and technologies for analytics contribute to the flexibility in managing the process of food redistribution owing to increased operability and visibility (Fatorachian et al., 2025; Gualandris et al., 2014; Michel-Villarreal et al., 2021). These methods allow one to monitor food stock levels and changing food demands effectively, thus making the redistribution process more efficient (Odulaja et al., 2023).
- Community engagement was another factor determining the efficiency of redistribution activities.
- Volunteer coordination ensured swift collection and redistribution of food surpluses, especially in contexts when logistical infrastructure was underdeveloped.
- Social entrepreneurship initiatives such as Robin Hood Army and Feeding India showed that strong social ties, trust networks, and decentralized participation could significantly increase operational flexibility.

Resilience Mechanisms

It has been shown that resilience in the studied organizations can take place even without advanced logistics infrastructure (Umar & Wilson, 2023).

- **Social Capital:** Strong social bonds and "social cohesion" were found to be intrinsic resources for resilience (Sharma & Srivastava, 2015),(Umar & Wilson, 2023).

- Logistics Flexibility: "Redundancy" strategies involving keeping buffer capacities were more efficient in response to major disruptions like the COVID-19 outbreak (Kumar et al., 2024).
- Diversified Sourcing: In addition, initiatives involved sourcing food surpluses from a number of sources, including weddings and parties (Aloysius & Ananda, 2023).

Justification of Research Objectives

Objective 1: To examine the operational models adopted by social entrepreneurship initiatives for food redistribution in India

This research objective is justified by the increasingly prominent role of social entrepreneurship initiatives in food redistribution in India. Based on existing literature, it is known that various operational models of redistribution can be employed by organizations in India, including hotline-based models, volunteer-driven schemes, mobile apps, decentralized deliveries, etc. However, these models differ greatly in terms of their coordination, logistics management, and other organizational aspects. Case study organizations such as Feeding India, Robin Hood Army, No Food Waste, and Roti Bank use distinctly different models of operation. Therefore, studying their operational models is important in order to understand the way food is redistributed and managed.

Objective 2: To analyse the resilience mechanisms within food redistribution supply chains

This objective is motivated by the volatile and constrained nature of the environment in which food redistribution occurs. Redistribution is associated with perishable products and uncertainty in relation to supply and demand, as well as transportation and infrastructure constraints. Literature suggests that there are several resilience mechanisms that contribute to resilient functioning of food redistribution chains, such as flexibility, adaptability, redundancy, decentralized coordination, etc. Case study initiatives show that in order to remain resilient, many Indian organizations use volunteers and collaborate with communities. Thus, analysing the resilience mechanisms used by the initiatives is important to explain why they are functional.

Objective 3: To identify the major challenges affecting surplus food redistribution systems

This objective is important because several challenges continue to prevent the successful functioning of food redistribution initiatives. Based on literature and case analyses, the most common challenges faced by the organizations include lack of cold chain infrastructure, problems in transportation, fragmentation, insufficient storage capabilities, policy gaps, and financial issues. In light of the fact that food redistribution involves perishable goods, any infrastructural deficiencies can result in spoilage and lower effectiveness of food redistribution activities.

Objective 4: To examine the role of technology and community participation in enhancing redistribution efficiency

This objective is motivated by the increasing importance of ICTs and volunteer networks in food redistribution systems. Previous studies show that the use of ICT platforms, hotlines, and other technologies improves the coordination and logistics of food collection and distribution processes. At the same time, community participation and social capital are essential in ensuring rapid food redistribution. As the case study shows, initiatives such as Feeding India utilize both technology and volunteers. Studying the role of technology and community engagement is essential to understand the factors increasing the efficiency of food redistribution.

Suggestions

1. Operational and Logistics Improvements

- From front line to integrated models: At present, most of the Indian food recovery organizations operate on "front line" model wherein food is distributed immediately to avoid any spoilage (Aloysius & Ananda, 2023). To scale, these organizations need to collaborate with back-line organizations that help in logistics and specialized storage of foods to serve larger areas (Aloysius & Ananda, 2023).
- Local cold chains: Due to the highly perishable nature of food wastage from weddings, and restaurants, local cold storage and communal refrigeration systems become necessary (Sahoo et al., 2022). These systems can connect surges in supply, e.g., late night weddings' surplus foods, and demands of beneficiaries for the subsequent days (Sahoo et al., 2022).
- Moving from responsiveness to redundancy: Organizations need to move from merely being responsive to adopting strategies of "redundancy" such as keeping buffer inventories of non-perishable foods and volunteers who are ready (Kumar et al., 2024; Umar & Wilson, 2023).

2. Technological Innovations

- ICT data platforms: There are close to 187 organizations in India that engage in food redistribution activities, but operate in isolation (Aloysius & Ananda, 2023). A national data platform will help such organizations share data about surplus hotspots and beneficiaries' needs (Aloysius & Ananda, 2023).
- Traceability systems: Innovative business models could involve adoption of food traceability using IoT and blockchain technology to reduce information asymmetries (Sharma et al., 2022), build confidence among donors, and ensure safe transportation of food (Kumar et al., 2023).
- Use of machine learning: Machine learning could help in predicting surplus food from ICT platforms based on historical data from restaurants including corporate canteens and large restaurants (Priyanka et al., 2023).

3. Policy Frameworks and Regulations

- Incentives for donors: Government policy framework could facilitate business model innovations by providing carbon credits to restaurants and hotels engaged in food redistribution to avoid dumping them into landfills (Sahoo et al., 2022). Donors should be provided tax incentives to cover their expenses related to preparing such food (Giuseppe et al., 2014).
- Standardization of safety protocols: As mentioned earlier, liability issues have been the main deterrent to large-scale donations. Thus, there is a need for standardized safety guidelines related to handling and transporting food wastage across India, possibly modelled after Good Samaritan laws (Bharucha, 2018).
- Policy support for social entrepreneurs: Government policies need to focus on providing green initiative grants and infrastructural facilities to social entrepreneurship organizations that aim at realizing the UN's 'zero hunger' agenda.

4. Community-based Models

- Exploiting social capital: Being largely characterized by social cohesion, Indian food distribution systems are flexible enough during disasters (Sharma & Srivastava, 2015; Umar & Wilson, 2023). Thus, continued efforts should be made to enhance existing community-based volunteering systems, e.g., 'Hunger Heroes'.
- Social entrepreneurship and high-tech collaborations: There is a need to encourage collaborations between social entrepreneurship initiatives (Feeding India) and established logistics systems (Mumbai dabbawalla Roti Bank) in order to benefit from data efficiency of high-tech startups along with operational robustness of traditional organizations (Sanyal et al., 2021; Umar & Wilson, 2023).

Conclusion

The research shows how social entrepreneurship plays a vital role in developing resilient supply chains in food redistribution in India. Using ICT platforms and social cohesion, such initiatives tackle issues of both food waste and food insecurity. Nevertheless, in order to enhance the resiliency further, there is a need for stronger policies that promote investment in resilient infrastructure and provide regulatory leeway. Additionally, collaboration of multiple stakeholders is important in integrating local cold chains and ICT platforms. Moreover, government regulations and incentives are required in order to address the issue of insufficient governmental leadership and financial constraints that have been identified by earlier studies to affect sustainable operations in the agri-food supply chain (Mangla et al., 2018). In addition, regulatory frameworks and policy support are essential for creating favourable market conditions for social entrepreneurship as well as for providing infrastructure to food redistribution systems (Mangla et al., 2020). Overall, the study contributes to a growing body of literature in the field of sustainable supply chain management.

Future studies may incorporate primary empirical investigations involving HORECA establishments, social enterprises, and beneficiaries to quantitatively assess redistribution efficiency and resilience performance.

REFERENCES:

1. A Survey on Artificial Intelligence in Food Redistribution. (2025). IJARCCCE, 14(6). <https://doi.org/10.17148/ijarccce.2025.14619>
2. Adewusi, A. O., Komolafe, A. M., Ejairu, E., Aderotoye, I. A., Abiona, O. O., & Oyeniran, O. C. (2024). THE ROLE OF PREDICTIVE ANALYTICS IN OPTIMIZING SUPPLY CHAIN RESILIENCE: A REVIEW OF TECHNIQUES AND CASE STUDIES [Review Of THE ROLE OF PREDICTIVE ANALYTICS IN OPTIMIZING SUPPLY CHAIN RESILIENCE: A REVIEW OF TECHNIQUES AND CASE STUDIES]. *International Journal of Management & Entrepreneurship Research*, 6(3), 815–837. Fair East Publishers. <https://doi.org/10.51594/ijmer.v6i3.938>
3. Agarwal, M., Agarwal, S., Ahmad, S., Singh, R., & Jayahari, K. M. (2021). Food Loss and Waste in India: The Knowns and The Unknowns. <https://doi.org/10.46830/wriwp.20.00106>
4. Alexander, J. (2024). Tackling food poverty: Building resilience into alternative food supply chain provision. In ORCA Online Research @Cardiff (Cardiff University). Cardiff University. <https://orca.cardiff.ac.uk/id/eprint/172674/2/jonesaj.pdf>
5. Aloysius, N., & Ananda, J. (2023). A Circular Economy Approach to Food Security and Poverty: A Case Study in Food Rescue in Sri Lanka. *Circular Economy and Sustainability*, 3(4), 1919–1940. <https://doi.org/10.1007/s43615-023-00255-4>
6. Annosi, M. C., Brunetta, F., Bimbo, F., & Kostoula, M. (2021). Digitalization within food supply chains to prevent food waste. Drivers, barriers and collaboration practices. *Industrial Marketing Management*, 93, 208–220. <https://doi.org/10.1016/j.indmarman.2021.01.005>
7. Atadoga, A., Osasona, F., Amoo, O. O., Farayola, O. A., Ayinla, B. S., & Abrahams, T. O. (2024). THE ROLE OF IT IN ENHANCING SUPPLY CHAIN RESILIENCE: A GLOBAL REVIEW [Review of THE ROLE OF IT IN ENHANCING SUPPLY CHAIN RESILIENCE: A GLOBAL REVIEW]. *International Journal of Management & Entrepreneurship Research*, 6(2), 336–351. Fair East Publishers. <https://doi.org/10.51594/ijmer.v6i2.774>
8. Bharucha, J. (2018). Tackling the challenges of reducing and managing food waste in Mumbai restaurants. *British Food Journal*, 120(3), 639–649. <https://doi.org/10.1108/bfj-06-2017-0324>

9. Bolwig, S., Tanner, A. N., Riemann, P., & Redlingshöfer, B. (2021). Reducing consumer food waste using green and digital technologies. In Research Portal Denmark (p. 96). Technical University of Denmark. <https://local.forskningsportal.dk/local/dki-cgi/ws/cris-link?src=dtu&id=dtu-50a62062-0250-464c-85ff-a258205f24a6&ti=Reducing%20consumer%20food%20waste%20using%20green%20and%20digital%20technologies>
10. Broeder, C. den, Lazer, L., Gisasola-Maiztegi, N., Ruggiero, B., & Coopmans, I. (2026). Challenges, coping mechanisms, and solutions in surplus food redistribution efforts at the city level. *Discover Sustainability*, 7(1). <https://doi.org/10.1007/s43621-025-02289-0>
11. Chauhan, Y. (2020). Food Waste Management with Technological Platforms: Evidence from Indian Food Supply Chains. *Sustainability*, 12(19), 8162–8162. <https://doi.org/10.3390/su12198162>
12. Dadi, V., Nikhil, S. R., Mor, R. S., Agarwal, T., & Arora, S. (2021). Agri-Food 4.0 and Innovations: Revamping the Supply Chain Operations. *Production Engineering Archives*, 27(2), 75–89. <https://doi.org/10.30657/pea.2021.27.10>
13. Devadas, T. E. (2024). Harnessing Artificial Intelligence for Urban Food Redistribution: A Socio-Technical Analysis of the Feeding America Initiative. *International Journal for Research in Applied Science and Engineering Technology*, 12(9), 172–180. <https://doi.org/10.22214/ijraset.2024.64156>
14. Duarte, A. L. de C. M., Rodrigues, V. P., & Costa, L. B. M. (2024). The sustainability challenges of fresh food supply chains: an integrative framework. *Environment Development and Sustainability*. <https://doi.org/10.1007/s10668-024-04850-9>
15. Enyejo, J. O., Adeyemi, A. F., Olola, T. M., Igba, E., & Obani, O. Q. (2024). Resilience in supply chains: How technology is helping USA companies navigate disruptions. *Magna Scientia Advanced Research and Reviews*, 11(2), 261–277. <https://doi.org/10.30574/msarr.2024.11.2.0129>
16. Fatorachian, H., Kazemi, H., & Pawar, K. S. (2025). Digital Technologies in Food Supply Chain Waste Management: A Case Study on Sustainable Practices in Smart Cities. *Sustainability*, 17(5), 1996–1996. <https://doi.org/10.3390/su17051996>
17. FOODBRIDGE – A WEB BASED PLATFORM FOR EFFICIENT SURPLUS FOOD REDISTRIBUTION. (2026). *International Journal of Progressive Research in Engineering Management and Science*. <https://doi.org/10.58257/ijprems51381>
18. Fu, X., & Polzin, C. (2010). Sustainability of Technology-intensive Social Innovation in India: The Role of Absorptive Capacity and Complementary Assets. In Palgrave Macmillan UK eBooks (pp. 320–340). Palgrave Macmillan. https://doi.org/10.1057/9780230276123_17
19. Ghosh, P., Kapoor, R., & Gupta, N. (2026). Identifying Necessary and Sufficient Conditions for Food Loss and Waste Reduction in Agricultural Perishable Food Supply Chains: A Multi-Method Causal Analysis from a B2B Perspective Emerging Rural Economy. *Business Strategy & Development*, 9(1). <https://doi.org/10.1002/bsd2.70287>
20. Giroto, F., & Beggio, G. (2025). From burden to backbone: the regenerative potential of food waste through digital, biological, and technological innovation. *Frontiers in Nutrition*, 12. <https://doi.org/10.3389/fnut.2025.1675732>
21. Global Waste Management Outlook. (2016). In United Nations eBooks. United Nations. <https://doi.org/10.18356/765baec0-en>

22. Gualandris, J., Golini, R., & Kalchschmidt, M. G. M. (2014). Do supply management and global sourcing matter for firm sustainability performance? *Supply Chain Management An International Journal*, 19(3), 258–274. <https://doi.org/10.1108/scm-11-2013-0430>
23. H, S. S. (2025). The Role of Technology in Reducing Food Wastage: A Business and Social Perspective. *INTERANTIONAL JOURNAL OF SCIENTIFIC RESEARCH IN ENGINEERING AND MANAGEMENT*, 9(2), 1–9. <https://doi.org/10.55041/ijsrem41621>
24. Harvey, J., Smith, A., Goulding, J., & Branco-Illodo, I. (2019). Food sharing, redistribution, and waste reduction via mobile applications: A social network analysis. *Industrial Marketing Management*, 88, 437–448. <https://doi.org/10.1016/j.indmarman.2019.02.019>
25. Hashimoto, Y. (2016). Waste Management in Urban India and Role of Social Enterprises. *Eurasian Journal of Business and Management*, 4(1), 42–50. <https://doi.org/10.15604/ejbm.2016.04.01.005>
26. Hossain, S., & Kashem, S. B. (2025). Transportation resilience and food security: developing a conceptual framework through literature review. *Frontiers in Sustainable Food Systems*, 9. <https://doi.org/10.3389/fsufs.2025.1569474>
27. Jagtap, S., Trollman, H., Gupta, S., & Norrman, A. (2025). Guest editorial: Transforming food supply chains: harnessing the potential of the digital era. *The International Journal of Logistics Management*, 36(2), 349–353. <https://doi.org/10.1108/ijlm-03-2025-613>
28. Jain, V., Tewary, T., & Gopalakrishnan, B. N. (2021). Unlocking Technology Adoption for a Robust Food Supply Chain: Evidence from Indian Food Processing Sector. *Higher School of Economics Economic Journal*, 25(1), 147–164. <https://doi.org/10.17323/1813-8691-2021-25-1-147-164>
29. Jones, A., Walker, H., Wang, Y., & Peattie, K. (2026). Conceptualising Supply Chain Resilience Within Social Enterprises. *Business Strategy and the Environment*. <https://doi.org/10.1002/bse.70682>
30. Karanam, R. K., Sachani, D. K., Natakam, V. M., Natakam, V. M., Yarlagadda, V. K., & Kothapalli, K. R. V. (2024). Resilient Supply Chains: Strategies for Managing Disruptions in a Globalized Economy. *American Journal of Trade and Policy*, 11(1), 7–16. <https://doi.org/10.18034/ajtp.v11i1.719>
31. Karki, S. T., Bennett, A. C. T., & Mishra, J. (2020). Reducing food waste and food insecurity in the UK: The architecture of surplus food distribution supply chain in addressing the sustainable development goals (Goal 2 and Goal 12.3) at a city level. *Industrial Marketing Management*, 93, 563–577. <https://doi.org/10.1016/j.indmarman.2020.09.019>
32. Katepallewar, A., Kaware, A., Suryawanshi, S. D., & Thite, S. (2024). Food Harvest: A Collaborative Solution for Reducing Food Waste. *International Journal for Research in Applied Science and Engineering Technology*, 12(8), 994–1001. <https://doi.org/10.22214/ijraset.2024.64049>
33. Khatami, F., Sanguineti, F., & Khatami, R. (2024). Breaking barriers: the role of digital platforms in enhancing the resilience of food entrepreneurs. *British Food Journal*, 126(11), 3822–3841. <https://doi.org/10.1108/bfj-02-2024-0142>
34. Krishnan, R., Yen, P., Agarwal, R., Kaur, A., & Bajada, C. (2020). Collaborative innovation and sustainability in the food supply chain- evidence from farmer producer organisations. *Resources Conservation and Recycling*, 168, 105253–105253. <https://doi.org/10.1016/j.resconrec.2020.105253>

35. Kumar, M., Choubey, V. K., Raut, R. D., & Jagtap, S. (2023). Enablers to achieve zero hunger through IoT and blockchain technology and transform the green food supply chain systems. *Journal of Cleaner Production*, 405, 136894–136894. <https://doi.org/10.1016/j.jclepro.2023.136894>
36. Kumar, M., Raut, R. D., Sharma, M., Choubey, V. K., & Paul, S. K. (2022). Enablers for resilience and pandemic preparedness in food supply chain. *Operations Management Research*, 15, 1198–1223. <https://doi.org/10.1007/s12063-022-00272-w>
37. Kumar, R., Ganapathy, L., Gokhale, R., Kumar, M., & Tiwari, M. K. (2024). Managing COVID-19 food supply chain disruptions in India: a case study of public distribution system. *International Journal of Logistics Research and Applications*, 28(12), 1454–1475. <https://doi.org/10.1080/13675567.2024.2355944>
38. Kumar, R., Samadhiya, A., Kumar, A., Luthra, S., Pandey, K. K., & Jaouhari, A. E. (2024). Nourish resilience in digital food supply chain in post COVID landscape: literature swill for past insights and future roadmap. *International Journal of Industrial Engineering and Operations Management*. <https://doi.org/10.1108/ijieom-02-2024-0007>
39. Kusumawati, Y. A., Aurellia, V., Lasmy, L., Lukiyanto, K., Awang, M., & Han, C. (2025). From Waste to Worth: Enhancing Access to Edible Surplus Food Using a Mobile App for Better Distribution. *Procedia Computer Science*, 269, 749–761. <https://doi.org/10.1016/j.procs.2025.09.018>
40. Liu, J., Kang, K., Lu, L., Dong, R., Luo, X., Li, C., Long, P., Yang, X., & Mao, S. (2025). Decision analysis considering the resilience level of the food supply chain under the risk of demand disruption. *Frontiers in Sustainable Food Systems*, 9. <https://doi.org/10.3389/fsufs.2025.1563938>
41. Mangla, S. K., Bhattacharya, A., Yadav, A. K., Sharma, Y. K., Ishizaka, A., Luthra, S., & Chakraborty, R. (2020). A framework to assess the challenges to food safety initiatives in an emerging economy. *Journal of Cleaner Production*, 284, 124709–124709. <https://doi.org/10.1016/j.jclepro.2020.124709>
42. Mangla, S. K., Luthra, S., Rich, N., Kumar, D., Rana, N. P., & Dwivedi, Y. K. (2018). Enablers to implement sustainable initiatives in agri-food supply chains. *International Journal of Production Economics*, 203, 379–393. <https://doi.org/10.1016/j.ijpe.2018.07.012>
43. Mani, R. J., Singh, S., Sonu, S., & Katare, D. P. (2025). Tech-Driven Harvest. In *Auerbach Publications eBooks* (pp. 215–236). <https://doi.org/10.1201/9781003507390-13>
44. Manzoor, S., Fayaz, U., Dar, A. H., Dash, K. K., Shams, R., Bashir, I., Pandey, V. K., & Abdi, G. N. (2024). Sustainable development goals through reducing food loss and food waste: A comprehensive review. *Future Foods*, 9, 100362–100362. <https://doi.org/10.1016/j.fufo.2024.100362>
45. Michel-Villarreal, R., Vilalta-perdomo, E. L., Canavari, M., & Hingley, M. (2021). Resilience and Digitalization in Short Food Supply Chains: A Case Study Approach. *Sustainability*, 13(11), 5913–5913. <https://doi.org/10.3390/su13115913>
46. Mishra, O. (2022). Factors Influencing Sustainable Resilience of Social Enterprises During the Different Phases of the COVID-19 Pandemic. In *Advances in logistics, operations, and management science book series* (pp. 241–259). Routledge. <https://doi.org/10.4018/978-1-6684-4605-8.ch011>

47. Mogale, D. G., Ghadge, A., Cheikhrouhou, N., & Tiwari, M. K. (2022). Designing a food supply chain for enhanced social sustainability in developing countries. *International Journal of Production Research*, 61(10), 3184–3204. <https://doi.org/10.1080/00207543.2022.2078746>
48. Mohanty, N., Parida, J. K., Kumar, A., Hota, S. L., & Debyani, D. (2024a). Sustainable development and zero hunger : A focus on India’s social entrepreneurship initiatives. *Journal of Information and Optimization Sciences*, 45(6), 1717–1725. <https://doi.org/10.47974/jios-1707>
49. Mohanty, N., Parida, J. K., Kumar, A., Hota, S. L., & Debyani, D. (2024b). Sustainable development and zero hunger : A focus on India’s social entrepreneurship initiatives. *Journal of Information and Optimization Sciences*, 45(6), 1717–1725. <https://doi.org/10.47974/jim-1707>
50. Odulaja, B. A., Oke, T. T., Eleogu, T., Abdul, A. A., & Daraojimba, H. O. (2023). RESILIENCE IN THE FACE OF UNCERTAINTY: A REVIEW ON THE IMPACT OF SUPPLY CHAIN VOLATILITY AMID ONGOING GEOPOLITICAL DISRUPTIONS [Review of RESILIENCE IN THE FACE OF UNCERTAINTY: A REVIEW ON THE IMPACT OF SUPPLY CHAIN VOLATILITY AMID ONGOING GEOPOLITICAL DISRUPTIONS]. *International Journal of Applied Research in Social Sciences*, 5(10), 463–486. Fair East Publishers. <https://doi.org/10.51594/ijarss.v5i10.634>
51. Orenge-Serra, K. L., & Sánchez-Jauregui, M. (2021). Food supply chain resilience model for critical infrastructure collapses due to natural disasters. *British Food Journal*, 124(13), 14–34. <https://doi.org/10.1108/bfj-11-2020-1066>
52. Ouro-Salim, O., Guarnieri, P., & Fanho, A. D. (2024). Unlocking value: circular economy in ngos’ food waste reduction efforts in Brazil and Togo. *Discover Environment*, 2(1). <https://doi.org/10.1007/s44274-024-00042-4>
53. Parthasarathy, A. (2025). Tackling Food Insecurity Through Food Surplus Redistribution. *American Journal of Student Research*, 93–102. <https://doi.org/10.70251/hyjr2348.3593102>
54. Patil, K. (2025). A Comparative Analysis on Emerging Technologies and Supply Chain Resilience in Maharashtra. *Journal of Informatics Education and Research*, 5(2). <https://doi.org/10.52783/jier.v5i2.2796>
55. Pearson, S., Brewer, S., Manning, L., Bidaut, L., Onoufriou, G., Durrant, A., Leontidis, G., Jabbour, C. J. C., Zisman, A., Parr, G., Frey, J. G., & Maull, R. (2023). Decarbonising our food systems: contextualising digitalisation for net zero. *Frontiers in Sustainable Food Systems*, 7. <https://doi.org/10.3389/fsufs.2023.1094299>
56. Prabhu, Mr. P. M., Rajeswaran, R., Selvinraj, I., & Vikesh, K. S. (2024). Zerohunger Link-Bridging Food Waste and Hunger Gaps-An Integrated Approach. *International Journal of Advanced Research in Science Communication and Technology*, 565–575. <https://doi.org/10.48175/ijarsct-17886>
57. Prakash, G. (2022). Resilience in food processing supply chain networks: empirical evidence from the Indian dairy operations. *Journal of Advances in Management Research*, 19(4), 578–603. <https://doi.org/10.1108/jamr-12-2021-0376>
58. Reddy, Dr. A. A. (2024). A STUDY ON DABBAWALA’S “EFFICIENCY AND RESILIENCE.” *International Scientific Journal of Engineering and Management*, 3(3), 1–9. <https://doi.org/10.55041/isjem01430>
59. Rogers, H., & Dora, M. (2024). Guest editorial: The interplay between new innovations, sustainability and food supply chains. *Supply Chain Management An International Journal*, 29(3), 409–413. <https://doi.org/10.1108/scm-05-2024-644>

60. Sahoo, A., Dwivedi, A., Madheshiya, P., Kumar, U., Sharma, R. K., & Tiwari, S. (2022). Insights into the management of food waste in developing countries: with special reference to India. Research Square (Research Square). <https://doi.org/10.21203/rs.3.rs-2014055/v1>
61. Sandoya, A., Chicaiza-Vaca, J., Sandoya, F., & Barán, B. (2025). A Model for a Circular Food Supply Chain Using Metro Infrastructure for Quito's Food Bank Network. *Sustainability*, 17(12), 5635–5635. <https://doi.org/10.3390/su17125635>
62. Sanyal, S., Singh, V. K., Xhafa, F., Sanyal, B., & Mukhopadhyay, S. (2021). A Game Theoretic Framework for Surplus Food Distribution in Smart Cities and Beyond. arXiv (Cornell University). <https://doi.org/10.48550/arxiv.2102.04929>
63. Sawyerr, E., Bourlakis, M., Conrad, D., & Wagstaff, C. (2023). Impact pathways: unravelling the hybrid food supply chain – identifying the relationships and processes to drive change. *International Journal of Operations & Production Management*, 44(7), 1310–1323. <https://doi.org/10.1108/ijopm-05-2023-0362>
64. Sciortino, C., Giamporcaro, G., Sgroi, F., & Modica, F. (2025). Exploring the role of short food supply chains in agricultural sustainability and resilience: a literature review [Review of Exploring the role of short food supply chains in agricultural sustainability and resilience: a literature review]. *Agricultural and Food Economics*, 13(1). Springer Nature. <https://doi.org/10.1186/s40100-025-00420-3>
65. Sedlmeier, R., Rombach, M., & Bitsch, V. (2019). Making Food Rescue Your Business: Case Studies in Germany. *Sustainability*, 11(18), 5101–5101. <https://doi.org/10.3390/su11185101>
66. Sengupta, S., Choudhary, S., Obayi, R., & Nayak, R. (2024). Reducing food loss through sustainable business models and agricultural innovation systems. *Supply Chain Management An International Journal*, 29(3), 540–572. <https://doi.org/10.1108/scm-01-2023-0059>
67. Seyam, A., Barachi, M. E., Zhang, C., Du, B., Shen, J., & Mathew, S. S. (2024). Enhancing resilience and reducing waste in food supply chains: a systematic review and future directions leveraging emerging technologies. *International Journal of Logistics Research and Applications*, 29(2), 141–175. <https://doi.org/10.1080/13675567.2024.2406555>
68. Sharma, A., Deshmukh, S. S., & Ojha, A. (2022). Business Model Innovation to Address Vegetable Supply Chain Issues: A Case Study of an Indian Startup. *International Journal of Innovation and Technology Management*, 20(2). <https://doi.org/10.1142/s0219877023500086>
69. Sharma, I., Sonar, H., Ghag, N., Belal, H. M., & Majeed, M. A. (2025). Enhancing resilience in the fresh food supply chain: a managerial perspective through interpretive analysis. *British Food Journal*, 127(12), 4715–4741. <https://doi.org/10.1108/bfj-03-2025-0319>
70. Sharma, M. G., & Srivastava, S. K. (2015). Leveraging the social welfare chain to provide resilience during disaster. *International Journal of Logistics Research and Applications*, 19(6), 509–519. <https://doi.org/10.1080/13675567.2015.1090963>
71. Siddique, A., Gupta, A., Sawyer, J. T., Huang, T., & Morey, A. (2025). Big data analytics in food industry: a state-of-the-art literature review [Review of Big data analytics in food industry: a state-of-the-art literature review]. *Npj Science of Food*, 9(1). Nature Portfolio. <https://doi.org/10.1038/s41538-025-00394-y>
72. Singh, G., Ali, A., & Kaur, Dr. R. (2025a). SustainNet: Digital Platform for Food Redistribution. Zenodo (CERN European Organization for Nuclear Research). <https://doi.org/10.5281/zenodo.18095815>

73. Singh, G., Ali, A., & Kaur, Dr. R. (2025b). SustainNet: Digital Platform for Food Redistribution. Zenodo (CERN European Organization for Nuclear Research). <https://doi.org/10.5281/zenodo.18095814>
74. Stone, J. A., & Rahimifard, S. (2018). Resilience in agri-food supply chains: a critical analysis of the literature and synthesis of a novel framework. *Supply Chain Management An International Journal*, 23(3), 207–238. <https://doi.org/10.1108/scm-06-2017-0201>
75. Suali, A. S., Srai, J. S., & Tsolakis, N. (2024). The role of digital platforms in e-commerce food supply chain resilience under exogenous disruptions. *Supply Chain Management An International Journal*, 29(3), 573–601. <https://doi.org/10.1108/scm-02-2023-0064>
76. Sundgren, C. (2020). Supply chain structures for distributing surplus food. *The International Journal of Logistics Management*, 31(4), 865–883. <https://doi.org/10.1108/ijlm-10-2019-0267>
77. Suresha, K. M., Joshi, H. G., & Joisa, J. (2025). Agri social entrepreneurship and rural transformation in Karnataka, India. *Discover Sustainability*, 6(1). <https://doi.org/10.1007/s43621-025-01886-3>
78. Sutar, P. S., Kolte, G., Yamini, S., & Mathiyazhagan, K. (2024). Food supply chain resilience in the digital era: a bibliometric analysis and development of conceptual framework. *Journal of Business and Industrial Marketing*, 39(9), 1863–1893. <https://doi.org/10.1108/jbim-10-2023-0587>
79. Umar, M., & Wilson, M. M. J. (2023). Inherent and adaptive resilience of logistics operations in food supply chains. *Journal of Business Logistics*, 45(1). <https://doi.org/10.1111/jbl.12362>
80. Verma, P., & Chauhan, U. (2025). A Study Of Supply Chain Management In Food Industry. *International Journal of Research Publication and Reviews*, 6(6), 5762–5769. <https://doi.org/10.55248/gengpi.6.0625.21109>
81. Wronka-Pośpiech, M., & Twaróg, S. (2024). SOCIAL ENTERPRISES AND SHORT FOOD SUPPLY CHAINS: INSIGHTS FROM EXPLORATORY CASE STUDIES. *Scientific Papers of Silesian University of Technology Organization and Management Series*, 2024(212), 661–685. <https://doi.org/10.29119/1641-3466.2024.212.40>
82. Zhao, G., Liu, S., Wang, Y., López, C., Ong, A. P. R., & Chen, X. (2022). Reducing food waste from social innovation perspective: a review of measures, research gaps and future directions. *The International Food and Agribusiness Management Review*, 26(2), 199–224. <https://doi.org/10.22434/ifamr2022.0006>