



## Value Co-creation of Food Bank and Stakeholder to Achieve Sustainable NGOs: Agenda for Future Research

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### Abstract

Food banks appear to be a "win-win" socially desirable solution to better-utilizing food waste from the waste reduction standpoint. Sadly, despite having a valuable mission, food banks face several barriers due to their reliance on donations. As a result, collaboration is becoming a desirable step for food banks to increase resources, leading to corporate sustainability. This paper employs a systematic literature review approach to analyze 26 "Food Bank and Stakeholder Partnerships" papers published in the Scopus database over the past five years. The findings indicate that most of the research comes from the US, which has a sustainable food bank system. Numerous studies have examined the collaboration between food banks and different institutions, including healthcare, community, retail, academic, self-organizing, and multi-stakeholder entities, in which each collaboration gains a unique partnership objective. This paper discussed the existence of stakeholders and food bank partnerships with the Four-Co-phase Models of Value Co-creation Process as a model to examine how value co-creation leads to long-term relationships through shared values to understand the phases and traits of partnerships better. Communication becomes a critical point in building a sustained partnership. Based on the findings, the topic of communication is widely addressed in articles on collaborative efforts, necessitating further research on trust within collaboration. Due to limited existing studies, further research is needed to explore the sustainability of food banks in developing countries. In addition to external cooperation, internal collaboration within the food bank is also essential for ensuring organizational harmony in the future.

**Keywords** *Collaboration; Food bank; Stakeholder; Sustainable NGO; Value co-creation*

### INTRODUCTION

Food insecurity refers to the insufficient availability of resources, including income, transportation, and skills, that restricts an individual's ability to maintain average growth over an extended period, which can be defined as a metric that measures a nation's capacity to maintain a steady provision of food at the national level, as well as the capability of individuals or households to obtain accessible food. This multifaceted issue has the potential to contribute to both malnutrition and excessive weight gain in numerous countries (FAO, 2023; Gartaula et al., 2017. According to The State of Food Security and Nutrition in the World 2023 Report, the global prevalence of moderate or severe food insecurity, measured by SDG Indicator 2.1.2, has remained stagnant for two consecutive years following a significant increase observed between 2019 and 2020. In 2022, approximately 29,6 percent of the world's population, amounting to 2,4 billion individuals, were moderately or severely food insecure. Around 900 million individuals (11,3 percent of the global population) faced severe food insecurity (FAO, 2023).



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Moreover, there is a tendency for global hunger levels to remain relatively constant in comparison to the previous period. The 2022 Global Hunger Index (GHI) indicates a moderate level of hunger worldwide with a score of 18,2. This represents a slight decrease from the score of 19,1 recorded in 2014 GHI, 2022).

In contrast, approximately 931 million tons of food were discarded in 2019. Notably, households accounted for the majority share of 61 percent, food service establishments contributed 26 percent, and retail establishments contributed 13 percent to this overall wastage (UN Environment Program, 2021). Unfortunately, insufficient treatment practices, including inadequate tools and ineffective waste management regulations, have resulted in poor food waste management in Indonesia. This situation may have adverse environmental consequences (Suhartini et al., 2022). In managing food waste, there is a strong emphasis on prioritizing prevention, recovery, and redistribution for human consumption. This process necessitates active involvement and commitment from local governments (FAO, 2023).

Food loss and waste are significant social and environmental challenges affecting food security. Food production is characterized by activities that need a substantial number of resources. Consequently, the wastage and loss of food also result in the squandering of water, land, energy, and other natural resources utilized in manufacturing. As a result, the mitigation of food loss and waste has been identified as a viable approach towards attaining the objective of zero hunger, as outlined in SDG 2 (Tchonkouang et al., 2023). These strategies align with Muniesue et al. (2015), who stated that a 50% reduction in food losses and food waste in developed regions could potentially lead to a decrease of up to 63.3 million, which is equivalent to approximately 7.4% of the total number of undernourished people. Furthermore, implementing these strategies would also decrease land and water utilization and greenhouse gas emissions.

The utilization of food banks is perceived as a socially favorable approach to managing food waste in terms of waste reduction by rescuing edible food items from the surplus industry, which in turn helps to alleviate hunger (Tarasuk & Eakin, 2005; van der Horst et al., 2014). Regrettably, food banks encounter a predicament arising from the unpredictability of donation levels and frequency, which can lead to inadequate food provisions in terms of quantity, quality, and operational requirements (Middleton et al., 2018; Paul & Davis, 2019). The assertion above aligns with the findings of Mensah et al. (2021), which identified funding and support as the primary obstacles encountered by food banks.

Most food bank research focused on nutrition fulfillment (Bergmann et al., 2021; Brady et al., 2022; Levi et al., 2022; Nogueira et al., 2021; Rao et al., 2021), food insecurity (Lindberg et al., 2019; Roncarolo et al., 2016; Zamora-Sarabia et al., 2019), and supply chain (Azevedo et al., 2022; LeBleu & Landry, 2022 while there is still limited research on capturing a comprehensive collaboration between stakeholders and food bank since the establishment of a collaborative partnership, as proposed by Gurganus et al. (2021) becomes imperative in addressing the fundamental factors contributing to food insecurity.

Food banks have emerged as a promising mechanism to attain the SDGs' 2030 goals, particularly regarding eradicating hunger. Nevertheless, accomplishing this objective necessitates the collaboration of multiple stakeholders in the operation of food banks (Middleton et al., 2018). The potential synergy between the healthcare and food bank sectors can contribute to improving food security. This collaboration involves healthcare institutions utilizing their rich health outcome data

and providing nutritional counseling to individuals experiencing food poverty. In addition to partnering with healthcare organizations, cooperation between governmental entities and food banks holds promise in assisting food banks in overcoming their challenge of obtaining financial support from both public and private sources for the acquisition of vital resources and infrastructure to improve their donation, handling, and management processes (Mensah et al., 2021). Based on this gap, it is imperative to promote heightened stakeholder engagement within the service system to enhance the sustainability of food banks through value co-creation (Biggemann et al., 2014). To effectively engage in collaborative value co-creation, the food bank and its stakeholders must thoroughly comprehend the expected advantages of a collaborative partnership.

The value co-creation model serves multiple purposes. From a manufacturing perspective, value co-creation enhances system integration and augments value (Li et al., 2022). From a marketing standpoint, value co-creation enhances business competitiveness by engaging customers in creating shared values. The Four Actions Framework is a business development tool emphasizing the reduction, elimination, rise, and creation of value-proposition elements. The model was designed to assist executives and organizations in creating new product or service attribute bundles to enhance their value proposition and gain a competitive edge (Kleber & Juusola, 2021). In addition to the Four Actions Framework, the DART model is a widely used value co-creation model employed by firms and suppliers. It facilitates a deeper understanding of customers and generates new ideas for design, engineering, and manufacturing through dialogue, access, risk assessment, and transparency, which are appropriate for product development (Prahalad & Ramaswamy, 2004). Consequently, the author used the Four-co-phase models of value co-creation by Kijima & Arai (2016) to examine how value co-creation leads to long-term relationships through shared values. The models in question comprise four phases for short-term and long-term activities (co-experience and co-definition) and long-term activities (co-elevation and co-development).

The author expresses a keen interest in researching the stages of value co-creation in food banks, utilizing the models proposed by Kijima & Arai (2016), as evidenced by the preceding discussion. This paper explores potential avenues for future research on value co-creation between food banks and stakeholders to establish a sustainable food bank, given its potential to play a crucial role in advancing the zero-hunger initiative, especially in developing countries where there are still uncommon food banks. A systematic literature review was undertaken by formulating three research questions to be explored:

RQ1: What is the current state of collaboration between the food bank and stakeholders?

RQ2: What traits does each collaboration possess by the Four-co-phase model?

## **LITERATURE REVIEW**

### **Food Bank**

Food banks are charitable organizations that help diverse groups of vulnerable people, many of whom are of working age, including the newly unemployed, people facing benefit sanctions or delays, and destitute asylum seekers (Darmowinoto et al., 2020; Prayogo et al., 2018). The term "food bank" originally referred to a central collection and distribution center providing bulk food to local food relief programs; the local food depot or food pantry then directly provided food assistance to those in need (Starkey et al., 1998). Therefore, food banks are a socially desirable solution to better utilizing food waste from the waste reduction standpoint since they link surplus food and those in need (Tarasuk & Eakin, 2005; van der Horst et al., 2014).

On the other hand, food bank management must be taken seriously because food banks must deal with uncertainties in both supply and demand. Food banks must manage their inventory and daily processes effectively to function effectively. They must also be prepared for food shortages and other uncertain situations. To mitigate the impact of uncertainty, food banks must be able to band together and collaborate (Darmowinoto et al., 2020). Nutritionists and food bank clients have long expressed concern about the poor quality and scarcity of nutritional food items available for distribution through food banks (Tarasuk & Eakin, 2005). Historically, food banks prioritized quantity over quality to alleviate hunger. Still, the steady rise in obesity and its associated chronic conditions has prompted the food aid sector to consider how it can promote health while alleviating hunger (Ferrer et al., 2019).

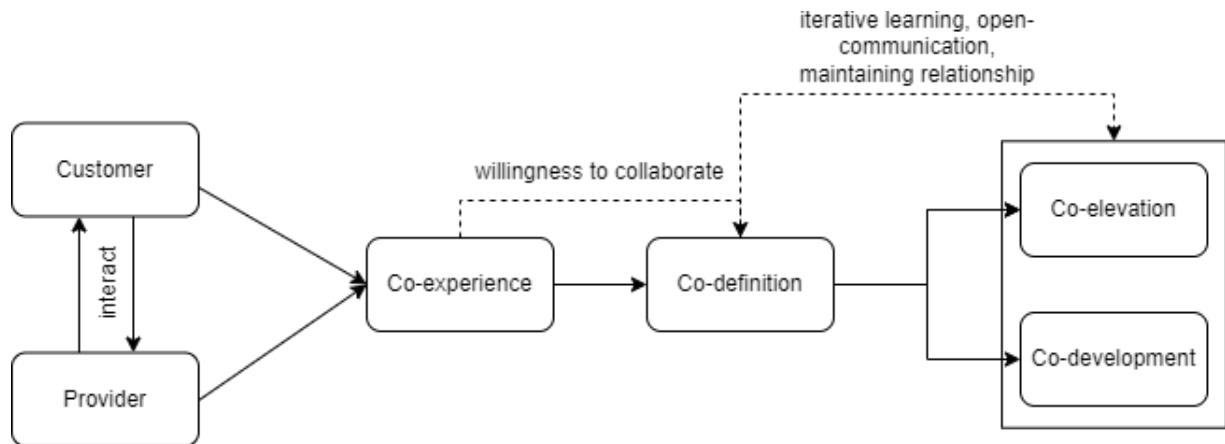
#### **Four-Co-phase Model of Value Co-Creation Process**

The concept of "value co-creation" is a comprehensive terminology that implies mutual value creation by the actors, thereby ensuring business engagement. Both (or multiple) sides contribute to creating value (Grönroos, 2012). According to the conceptual framework developed by Grönroos (2012), the component aspect of value co-creation is interactive communication, which means there is a dialogue between contact employees and customers which can be done in various kinds of communication (e.g., face-to-face or through website) and interaction of customers with physical resource and tangible items. On the other hand, from the service provider's perspective, the starting point of value co-creation is a customer participating in the service process, enabling direct collaboration. The service will gain customer feedback through this collaborative interaction, which may improve the service.

According to a process model by Kijima & Arai (2016), value co-creation entails four stages: co-experience, co-definition, co-elevation, and co-development (illustrated in Figure 1). These service organizations share the trait of having a top layer where consumers and providers connect and co-create new values and a bottom layer where customers and providers are invited to "get on the interaction" process. This layer is a platform for value orchestration, which encourages interaction and co-creation of new value through information and communication technology (ICT) between service providers and customers. Service science aims to spur innovation in the sector and boost output. The "Four-Co-phase Model of the Value Co-Creation Process" is novel.

The first stage in this model is the co-experience phase, which happens when customers and providers are unaware of each other's capabilities and expectations. To co-define a joint understanding of the service, the provider and client share an internal model rather than bridging the gap between requirements (or expectations) and seeds (or capabilities).

The second stage of the Four-Co-phase Model of the Value Co-Creation Process is the co-definition of the shared internal model. To jointly define and share a standard internal model, the customer and provider may learn about one another's preferences, abilities, and expectations through interaction. The co-experience of the service and the co-definition of a standard internal model produce satisfaction for both parties. For instance, at a sushi bar, the chef may gain information about a customer's taste, physical and mental health, and appetite through discussion, and the customer can also learn about the seasonal fish on that day. They will be satisfied if they share the same internal model (e.g., comprehend each other's preferences, abilities, and expectations). This is an ordinary co-experience and co-definition process.



**Figure 1.** Four Co-phase Model of Value Co-creation (Kijima et al. 2012)

Co-elevation is a spiraling process of customer expectations and provider capabilities in an individual-focused context. Intelligent and literate people have higher expectations of the services they receive, which results in higher-quality services and higher societal values (needs-pull). Customer expectations rise as a result of high-quality service (needs-push). On the other hand, in the co-development stage, both parties focus on co-innovation resulting from concurrent collaboration among diverse organizations. Customers typically evaluate and appraise the value of co-developed service innovations, while service providers learn from customer feedback (Kijima & Arai, 2016).

This model maintains the concept proposed by Grönroos (2012), which emphasizes the reciprocal interactions between the client and the supplier. However, by employing this model, researchers could identify the phase of a company's value co-creation.

## METHODOLOGY

Utilizing a systematic literature review is a viable method in this context, as it serves as a crucial component in organizing a research area while also facilitating the recognition of the conceptual substance of the field and furnishing direction toward the development of theory (Easterby-Smith et al., 2008; Meredith, 1993). In the present situation, there needs to be more research on conceptualizing the collaborative stage between food banks and stakeholders. Consequently, conducting a comprehensive literature review and assessing existing research is imperative to get insights into the strategies and factors contributing to successful collaboration. As a result, the literature review outcomes can serve as an initial phase in conducting further research.

Palmatier et al. (2018) suggest that literature reviews serve several purposes, including (1) clarifying definitions and delimiting the scope of a topic; (2) utilizing a comprehensive summary of current knowledge; (3) identifying discrepancies in previous findings and potential explanations (such as moderators, measures, mediators, and approaches); (4) evaluating current methodological approaches and original insights; (5) developing a conceptual framework to integrate and extend previous research; and (6) outlining research insights, gaps, and future directions. The present research utilizes a three-phase approach implemented by Kaartemo & Helkkula (2018). The three key stages involved in this process are conducting a comprehensive literature search, critically evaluating the available evidence, and performing a rigorous analysis and synthesis of the findings. These stages can be further broken down into the following steps: (1) Identifying potentially relevant articles through database searches; (2) Evaluating the appropriateness of the identified articles about the topic; and (3) Analyzing the content and themes present in the selected articles.

The present study involved a systematic literature review that relied on secondary data from the Scopus database, which is recognized as the largest abstract and citation database of peer-reviewed

literature. Despite an increasing trend in utilizing the Web of Science (WOS) database for literature reviews, Scopus is the most comprehensive database, indexing content from over 20,000 articles. This feature enables researchers to avoid overlooking crucial research from various parts of the world. On the contrary, Scopus provides sophisticated instruments for monitoring, analyzing, and visualizing research outcomes (Bhimani et al., 2019), providing valuable support for this research.

During the preliminary stage, known as the planning process, we formulated research questions that aligned with the primary objectives of our study. In addition, we employ Boolean logic operations and inverted commas in keyword searches to refine and limit the obtained results. The Boolean operator "AND" indicates that all terms in a search query must be present in the search result. On the other hand, the operator "OR" is used to indicate that at least one of the terms in the search query should be present (including synonyms, different spellings, or abbreviations) (Swarnkar et al., 2022). The article title incorporates two terminologies about the objective: 'food bank' and 'collaboration. As a result of synonyms of food bank and collaboration, this research focuses on the keyword food bank ("food bank" OR "food banks" OR "foodbank" OR "food banking" OR "food redistribution") and collaboration ("collaboration" OR "partnership").

The data were carefully curated using simplification and exclusion of extraneous information, as shown in Figure 2, based on the following criteria: (1) written in the English language; (2) about articles of the journal and conference proceedings type; (3) available in their entirety; (4) capable of potentially addressing the research questions; (5) relevant to the context of collaboration in addressing food insecurity; and (6) constrained within the context of an article about the previous five-year period. The manual elimination of articles is carried out by researchers who meticulously read each article. We eliminate articles that need a complete written document and address the collaborative process between the food bank and stakeholders.

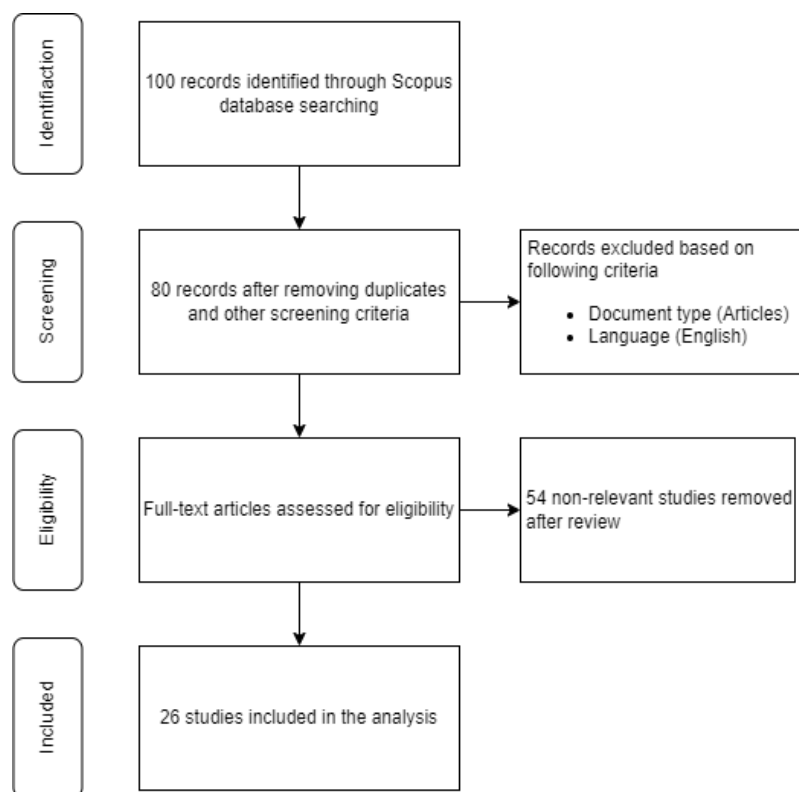


Figure 2. Literature Collection Process



## FINDINGS AND DISCUSSION

### Findings

Table 1 summarizes the overview of the publications selected. Most of the research on the food banks and stakeholders' partnership in addressing food insecurity comes from the health sector (54%). Based on Figure 3, most research on the United States has been conducted.

Table 1. Dispersion of Reviewed Literature by Research Outlet

Knowledge Area	Number of Publications	Total Percentage
<b>Health and Public Health</b>	<b>14</b>	<b>54</b>
Nutrients	1	
American Journal of Preventing Medicine	1	
Preventing Chronic Disease	1	
Journal of Professional Nursing	1	
Progress in Community Health Partnership: Research, Education, and Action	1	
Journal of General Internal Medicine	1	
BMC Public Health	1	
Public Health Nursing	1	
Critical Public Health	1	
Journal of the Academy of Nutrition and Dietetics	1	
Pilot and Feasibility Studies	1	
Foods	1	
Food, Culture, and Society	1	
Journal of Hunger and Environmental Nutrition	1	
<b>Social Science</b>	<b>7</b>	<b>27</b>
Journal of Applied Social Science	1	
Translational Behavioral Medicine	1	
International Journal of Research on Service-Learning & Community Engagement	1	
Journal of Mixed Methods Research	1	
Sustainability	2	
Agriculture and Human Values	1	
<b>Management</b>	<b>5</b>	<b>19</b>
Industrial Marketing Management	1	
Production and Operations Management	1	
Asia Pacific Journal of Public Administration	1	
Voluntas	2	
<b>Total</b>	<b>26</b>	<b>100</b>

Table 2 comprehensively explains the research methods employed in the articles. Most scholarly articles explain the partnership between food banks and stakeholders employ qualitative research methods (73% of total pieces). These methods typically involve the use of semi-structured interviews and ethnographic techniques. This phenomenon arose due to the appropriateness of qualitative methodologies in facilitating an understanding of the underlying mechanisms and rationales behind implementing practices within institutions or systems. On the contrary, it is evident from Figure 3 that the majority of research endeavors are carried out in emerging nations.

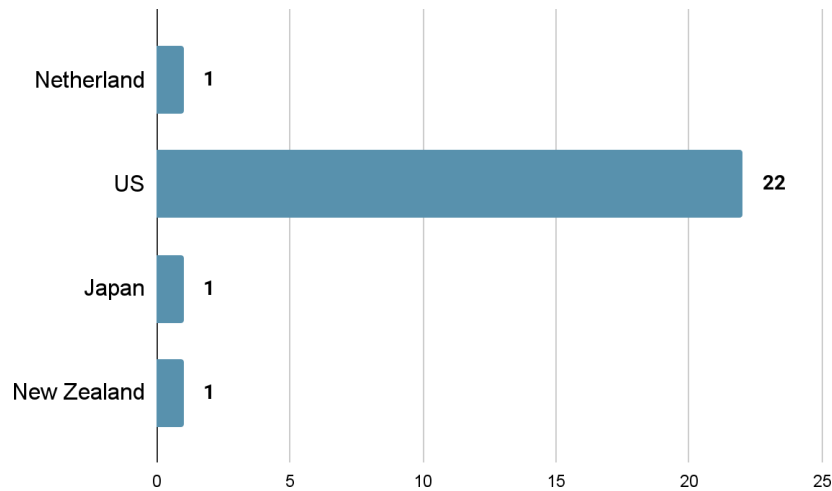


Figure 3. Number of Research Based on Countries

According to Hamilton & Finley (2020), qualitative methodologies are suitable for identifying contextual factors and provider perspectives that impact implementation and sustainability, evaluating the efficacy of organizational strategies, and characterizing system barriers and facilitators. The food bank system and its associated stakeholders involve many actors within this context. Using qualitative approaches, researchers could comprehensively understand the overarching landscape and primary challenges related to the issue. This enabled them to develop strategies for improving the system.

Table 2. Research Method

Research method	Publication	Number
Quantitative	Diallo et al. (2020); Mendez et al. (2020); Scher et al. (2022)	3
Qualitative	Blackmon et al. (2021); Curran & Armenia (2021); Depuccio et al. (2022); Dodd & Nelson (2020); Gurganus et al. (2021); Juris et al. (2021); Kinoshita & Dollery (2021); Martin et al. (2020); McWhorter et al. (2023); Meagher et al. (2020); Poulos et al. (2021); Shannon et al. (2021); Spring & Biddulph (2020); Swords (2019); Walters et al. (2021); Wetherill, White, & Seligman (2019); Wetherill, White, Rivera, et al. (2019)	19
Mixed method	Blessley & Mudambi (2022); Parker et al. (2020); Rao et al. (2021); Zack et al. (2022)	4
Total		26

Table 3 explains the existing partnership condition conducted by researchers in the past five years, which examined a diverse range of stakeholder sectors. Most of the article focuses on the significance of partnerships among multi-stakeholder sectors. This approach enables researchers to comprehensively understand the issue from various perspectives by engaging multiple stakeholders, which will be discussed more in the discussion section.

Table 3. Thematization of Reviewed Articles

Stakeholders	Areas of focus	Publication	Number
Self-organizing	Long-term sustainability	Spring & Biddulph (2020)	1
Healthcare	Clinical health matter	McWhorter et al. (2023)	1
	Challenges	Poulos et al. (2021)	1
	Food insecurity	Scher et al. (2022); Zack et al. (2022)	3
Academic	Support learning experience	Martin et al. (2020)	1
	Development	Curran & Armenia (2021); Mendez et al. (2020); Shannon et al. (2021)	3
Community	Built trust	Sommers et al. (2023)	1
	Food insecurity	Diallo et al. (2020)	1
Retail	Food insecurity	Mendly-Zambo et al. (2023)	1
Multi-stakeholder	Operation	Blessley & Mudambi (2022); Depuccio et al. (2022); Parker et al. (2020); Wetherill, White, Rivera, et al. (2019)	4
	Food insecurity	Kinoshita & Dollery (2021); Rao et al. (2021); Walters et al. (2021)	3
	Development	Blackmon et al. (2021); Dodd & Nelson (2020); Juris et al. (2021); Meagher et al. (2020); Swords (2019)	5
	Nutrition fulfillment	Wetherill, White, & Seligman (2019)	1
Total			26

## Discussion

### 1. Existing Conditions of Partnership

Non-profit organizations (NPOs) are considered a source of innovation in solving social problems with significantly higher performance than the government. Their smaller size and closer contact with communities made NPOs a creative agent in finding solutions. Non-profit organizations (NPOs) do not engage in commercial transactions, yet they endeavor to convince their stakeholders, including patrons, donors, volunteers, and personnel, to support their missions, initiatives, and offerings. Regrettably, NPOs encounter challenges, such as insufficient financial resources for their operations and reduced remuneration for their staff and executives (Nahrkhalaji et al., 2018). As a result, NPOs seek to collaborate with outside parties to gain access to creative information and quicken their propensity for innovation. Notwithstanding, every type of partner possesses a distinct perspective and accesses diverse expertise and information resources (Haus-Reve et al., 2019). According to Table 3, researchers have researched partnerships between food banks and institutions in the past five years.

The healthcare sector, encompassing entities such as hospitals and the local community's health organizations, has focused its attention on exploring the potential of collaborative efforts between food banks and healthcare providers to address the issue of food insecurity. Through this collaboration, beneficiaries can acquire knowledge and skills about attaining optimal nutrition (Diallo et al., 2020; Gurganus et al., 2021). Furthermore, the healthcare industry may serve as an overseer of food bank activities to guarantee that the beneficiaries receive nutritious food. The study by Gurganus et al. (2021) investigated the collaborative efforts between food banks and healthcare systems in the United States to tackle the issue of food insecurity.

Conversely, the partnership established between the academic sector (e.g., university and research team) has enhanced food bank operations through comprehensive research. According to Haus-Reve et al. (2019), collaborations with research institutions and universities tend to be characterized by exploratory endeavors that prioritize generating novel knowledge, which may have uncertain commercial utility.

Spring & Biddulph (2020) conducted self-organizing research, which is unique since self-organization refers to the ability to spontaneously generate their structure and behavior without needing external direction. The emergence phenomenon arises from the self-organization process within intricate adaptive systems. According to Williams et al. (2017), self-organization has emerged as a fundamental principle of sustainability within the framework of systems thinking. The outcome of Spring & Biddulph (2020) research is to investigate the scope and characteristics of self-organization within food redistribution initiatives. Despite the absence of external control, both informants collaborate with outside entities. Expansion, which has been identified as one of the self-organization components examined in this investigation, entails the establishment of networks and partnerships with other entities to enhance their impact.

In addition to organizational partnerships, the food bank could collaborate with its beneficiaries. Shannon et al. (2021) stated that food banks have the potential to gain insight into the needs and expectations of their beneficiaries, thereby enabling the identification of various strategies to meet these expectations. Zack et al. (2022) also examined beneficiaries' perspectives to gain insight into the factors that motivate them to visit the free health center produce market. By engaging with the beneficiaries, food banks have the potential to enhance their distribution mechanisms and provide tailored programs that cater to the specific requirements of the beneficiaries.

Besides the stakeholders, multiple tiers of collaboration exist in these papers, ranging from institutional to national level. The food bank that does a partnership at the institutional level (Blackmon et al., 2021; Curran & Armenia, 2021; Dodd & Nelson, 2020; Martin et al., 2020; Mendez et al., 2020; Mendly-Zambo et al., 2023; Parker et al., 2020; Poulos et al., 2021; Scher et al., 2022; Shannon et al., 2021; Spring & Biddulph, 2020; Swords, 2019). At the municipal level (Depuccio et al., 2022; Diallo et al., 2020; Juris et al., 2021; McWhorter et al., 2023; Meagher et al., 2020, the partnership exhibits a greater degree of complexity compared to the institutional level owing to its broader purview. Conversely, more complex stakeholders are involved at the national level (Blessley & Mudambi, 2022; Gurganus et al., 2021), including policymakers, governmental entities, and national objectives.

## 2. Value co-creation Stages

### a. Existing Value Co-creation Process of Food Bank and Stakeholders' Partnership

According to the literature, iterative communication to improve the food bank's and stakeholders' relationship is the most crucial aspect of value co-creation. Three critical relational components underlie value co-creation: (1) relationship is necessary to provide structural support for the creation and application of knowledge resources, (2) communication to interact to develop relationships, and (3) knowledge to improve the customer service experience, especially when co-created through dialogue and learning together. Communication is no longer a one-way concept in the context of value co-creation. Enable value co-creation requires involving all stakeholders in a continuous discourse and everyday sense-making activity (Nätti et al., 2014).

Meagher et al. (2020) stated that maintaining a partnership requires open communication to encourage cooperative issue-solving and mutual flexibility within a commitment to uphold commitments. Both parties must consider each other's interests to find potential

mutual benefits. To perceive a chance for mutual gain, both parties must understand each other's worldviews and day-to-day activities by identifying shared interests.

In the initial phase of value co-creation, it is needed to do interaction. Through the exchange, both parties could understand their needs, leading to the second phase of value co-creation. An example is the research conducted by Zack et al. (2022), which could

identify several beneficiaries' expectations. The statement is also in line with the study conducted by Swords (2019); when the food bank transforms its organization with more focus and pays attention to the beneficiaries, the food bank can understand the beneficiary's needs, which makes the food bank more focused on that and made leader more commitment on delivering the services. On the other hand, it is vital to have a program champion who vocally continues to launch the program to accelerate collaboration (Depuccio et al., 2022).

According to the literature, the main point of value co-creation in the food bank and stakeholders is in the food banks' internal and external communications. Besides contacts, operations and beneficiaries also become one barrier in the food bank.

Table 4. Existing Value Co-creation Process of Food Bank and Stakeholders' Partnership

Articles	Level of Collaboration	Co-experience	Stages		Form of Collaboration	Barriers
			Co-definition	Co-elevation		
Sommers et al. 2023	City				v	They have the same perception and trust toward each other. They also integrate sources that they have.
McWhorter et al. 2023	City		v			Tried to learn the expectations of both parties
Mendly-Zambo et al. 2023	Institutional	v				Food banks tried to help Walmart reduce their surplus food
Scher et al. 2022	Institutional	v				A pilot study of partnership
Depuccio et al. 2022	City		v			Understanding beneficiaries' expectations and problem
Zack et al. 2022	City		v			Understanding beneficiaries' expectation
Blessley & Mudambi 2022	National	v				Each entity already interacts with each other
Gurganus et al. 2021	National		v			Have the same goals
Poulos et al. 2021	Institutional	v				A pilot study of partnership
Rao et al. 2021	City	v				The partnership is only at the interaction level.
Blackmon et al. 2021	Institutional		v			Understand each other abilities by creating a system
Curran & Armenia 2021	Institutional			v		Generally responsive to the needs of the community



Table 4. Cont.

Articles	Level of Collaboration	Co-experience	Stages		Co-development	Form of Collaboration	Barriers
			Co-definition	Co-elevation			
Juris et al. 2021	City			v	v	Build excellent and sustainable partnerships and determine each other's responsibility. They also do an iterative communication and learning to involve a long-term process.	-
Kinoshita & Dollery 2021	National				v	Each party has a 'win-win' solution from the partnership. The government could achieve its goals, while the food bank could easily create partnerships with the food and beverage sector.	
Walters et al. 2021	City				v	Most of the parties are willing to take part in the community member. They also highlighted the importance of communication and sharing sources.	
Shannon et al. 2021	Institutional		v			Learn others' expectations and preferences.	Communication
Parker et al. 2020	Institutional		v			Lean others' issues and expectation	Communication, sharing value, and resource
Dodd & Nelson 2020	Institutional			v	v	Integrate resources by integrating their expectations as they try to improve the consistency and transparency of eligibility requirements. They also do an iterative cycle of research, reflection, and action and build strong relationships.	

Table 4. Cont.

Articles	Level of Collaboration	Stages				Form of Collaboration	Barriers
		Co-experience	Co-definition	Co-elevation	Co-development		
Diallo et al. 2020	City	v				Interact with beneficiaries with several programs.	Need to understand beneficiaries' expectations and needs
Martin et al. 2020	Institutional		v			Both parties (university and food bank) could meet their need	Communication with the beneficiaries
Meagher et al. 2020	City		v			Tried to understand farmer's perspective by sitting down together	Communication, commitment
Spring & Biddulph 2020	Institutional				v	They created value for both parties	Maintain relationships
Mendez et al. 2020	Institutional	v				Interact with each other to create a pilot study	Further evaluations from both parties
Swords, 2019	Institutional			v	v	Food banks transform their organization (vision, strategic plan, and implementation) where they try to listen to the beneficiaries.	
Wetherill, White, & Seligman 2019	National			v	v	Food banks create integrative systems that focus on health	Collaboration, resource
Wetherill, White, Rivera, et al., 2019	National		v			Understand the barrier for each party.	

b. Characteristics of Each Stage

During the co-experience stage, it is crucial to emphasize the significance of interaction. Several factors can hinder co-experience, including insufficient communication and a lack of motivation for collaboration. The second step of the four-co-phase model is called the co-definition stage, wherein the establishment of mutual understanding holds significant importance. The impediments to co-definition include ineffective communication and the absence of accommodation from all involved parties. The third step of co-elevation involves consistently enhancing its performance to meet customers' rising expectations. This is achieved by ongoing iterative dialogue to comprehend any shifts in client expectations effectively. In the last phase, co-development, the parties involved demonstrate a mutual commitment to providing support and using their respective resources to generate value.

c. Barrier of Each Stage

The significance of collaboration in tackling intricate social and environmental issues cannot be overstated, as it establishes an environment conducive to the collective efforts of various stakeholders in resolving problems that would otherwise be unsolvable individually (Guerrero et al., 2023). Cross-sector alliances serve as a novel means of generating social innovation and value, facilitating the execution of corporate social responsibility initiatives, and enabling non-governmental organizations to enhance their ability to address diverse social issues (Jurgita Joniškienė et al., 2020). During the initial phase, referred to as co-experience, a dynamic interaction exists between the food bank and its stakeholders, eventually establishing a state of "mutual understanding." A potential obstacle at this juncture may result from a lack of shared motivation, perception, and goals, impeding the development of mutual understanding. Leithaus et al. (2023) further asserted that the early engagement of stakeholders in the co-creation process facilitated the sharing of experiences and fostered collaboration, hence raising trust, which subsequently evolved into essential prerequisites for engaging in voluntary and ongoing interactions (He & Sun, 2020; Leithaus et al., 2023)

Once mutual understanding has been achieved, the subsequent co-definition phase involves comprehending each party's needs. Factors that may become barriers to the development of the condition include a dearth of information and a need for more transparency. Effective communication plays a crucial role in ensuring the alignment of project objectives and expectations and addressing any conflicts and misunderstandings that may develop throughout the project (Major & Spalek, 2022; Mukhtar, 2019). Conversely, during the co-elevation and co-development stages, continuity emerges as a significant impediment to creating long-term relationships. Therefore, it is necessary to do further evaluation and motivation since the motivation of individuals was identified as a crucial facilitating implementation factor (Leithaus et al., 2023). In addition, commitment serves as a prospective or explicit promise for a long-term partnership (He & Sun, 2020).

**CONCLUSIONS**

Food banks can expedite zero hunger, especially in times of food waste. Food banks tried to eradicate hunger despite resource limitations and donation dependency. Collaboration is needed to share resources and create value. This paper presents numerous studies on local, national, or institutional food bank-institution partnerships. The report identifies constraints from food collection to beneficiary acceptance to determine what can limit food bank activities in delivering food comprehensively. After understanding bottlenecks, this paper proposes ways to improve partnerships by creating value jointly. Value co-creation is primarily accomplished through conversation. The food bank and stakeholders could understand one another and be willing to work together to achieve goals by having mutual understanding and iterative learning. Effective communication with stakeholders would allow the food bank to comprehend the beneficiaries' requirements and expectations. As a result, further research is required to improve the sustainability of food banks.

**LIMITATION & FURTHER RESEARCH**

The limitation of this paper is the need for more empirical data since it is a literature review. In contrast, most of the literature that is being discussed uses a qualitative approach. Therefore, an alternative method is required to comprehend a food bank's circumstances and operational limitations (e.g., quantitative or modeling approach).

Second, this paper focuses on the sustainable food bank concept, primarily implemented in the USA and the Netherlands. This concept is particularly relevant in developing countries. Hence, it is necessary to establish a framework for food banks in developing nations, as they are currently not widely prevalent.

Furthermore, it is essential to note that the current body of research primarily focuses on the behavior and preferences of beneficiaries, with minimal attention given to understanding the characteristics of donors. By understanding donor behavior comprehensively, food banks may effectively identify potential donors and subsequently increase the overall number of contributors. The greater the number of donors, the higher the potential for food banks to achieve sustainability.

Finally, most scholarly papers elucidate the collaborative efforts between food banks and external stakeholders. Still, there needs to be more research exploring the internal collaboration within food banks, specifically among employees. The present study examines the research completed by Wetherill, White, & Seligman (2019a) and Schockman (2017) about leadership within the context of food banks. One potential research area in human resources is the optimization of food distribution processes, given the heavy reliance of food banks on donor contributions. Additionally, the study can explore the influence of motivation on human resources in food banks, as non-profit organizations typically do not provide monetary compensation to their staff. The subsequent study directions are outlined in Figure 4.

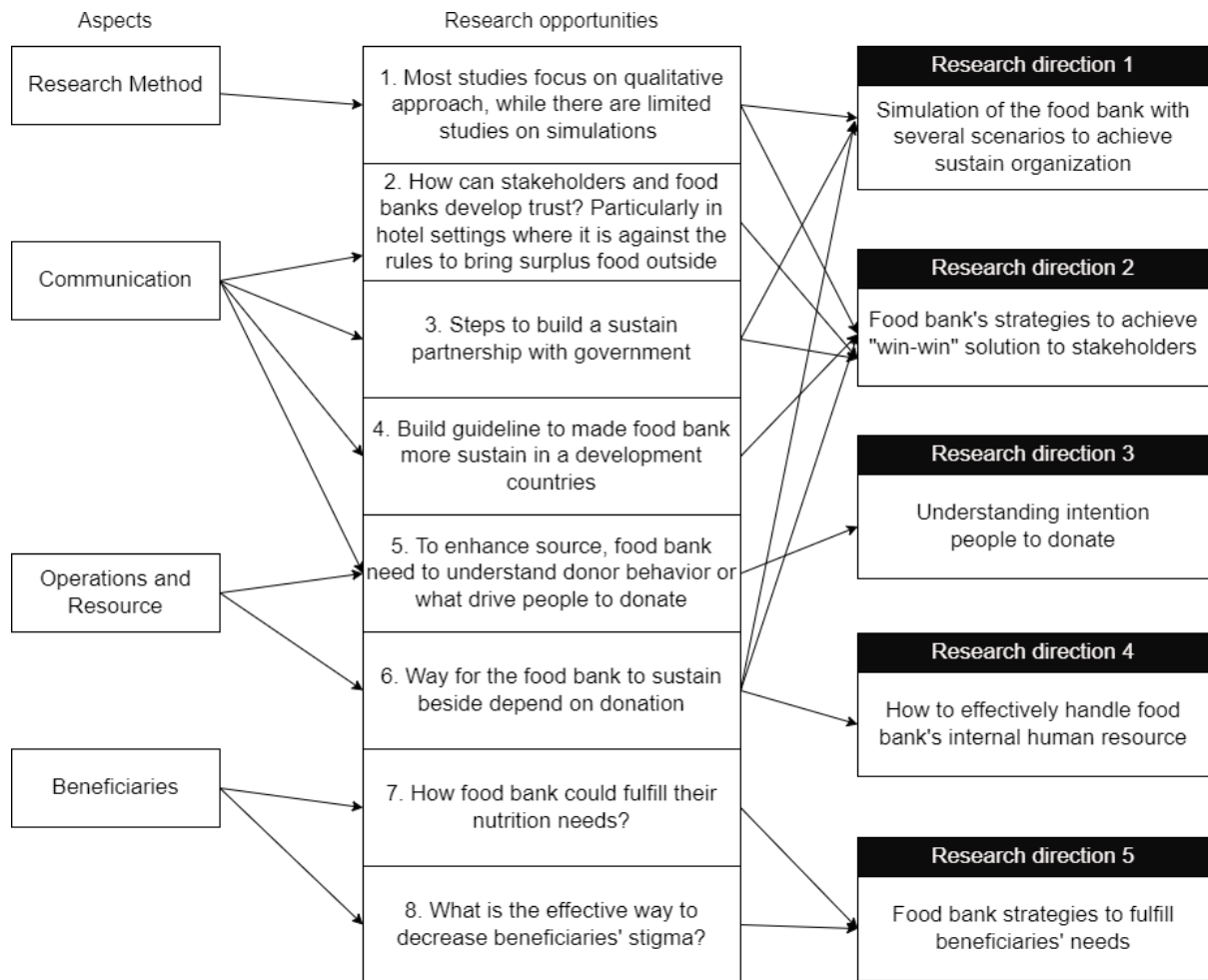


Figure 4. Research Directions

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