

Knowledge, Attitude, and Behavioral Intention on Food Waste of Employees in Selected Food Service Establishment in Northern Negros

Joel Samuling

La Consolacion College Bacolod Bacolod City, Negros Occidental, Philippines

DOI: <https://doi.org/10.47772/IJRISS.2026.100700077>

Received: 09 July 2026; Accepted: 14 July 2026; Published: 25 July 2026

ABSTRACT

Food waste significantly affected the environment and the economy and remained a major concern in the hospitality sector, particularly in food service establishments. This study investigated the knowledge, attitudes, and behavioral intentions regarding food waste management among employees of selected food service establishments in Northern Negros. Specifically, it assessed the respondents' levels of knowledge, attitudes, and behavioral intentions, examined differences according to demographic and organizational variables, and determined the relationships among the study variables. The study employed a descriptive-comparative-correlational research design. A modified survey questionnaire was administered to 273 employees selected through multistage sampling. Data were analyzed using the mean, standard deviation, t-test, analysis of variance, and Pearson's correlation coefficient. The findings revealed variations in employees' knowledge, attitudes, and behavioral intentions when they were grouped according to age, sex, years of operation, tenure, form of business organization, and type of food service establishment. Significant differences were found across several demographic and organizational variables. A significant positive relationship was also established between the respondents' knowledge and attitudes toward food waste management. The results indicated that knowledge alone had a limited influence on employees' attitudes and behavioral practices because their decisions were also shaped by personal preferences, experiences, perceptions, and sense of responsibility. The study concluded that effective food waste management required the combined improvement of knowledge, positive attitudes, responsible behavior, and commitment to sustainable food-handling practices. Customized interventions and educational programs were therefore necessary to address the specific needs of different segments of the food service industry. Food service establishments should conduct regular training and assessments on food waste prevention, proper disposal, recycling, and responsible purchasing. Local government units and the Hotel and Restaurant Association of Negros Occidental should likewise develop coordinated programs, policies, and awareness campaigns to reduce food waste and promote environmental sustainability throughout Northern Negros and nearby communities.

Keywords: Hospitality Management, Knowledge, Attitude, Behavioral Intention, Food Waste, Food Service Establishment, Descriptive Comparative-Correlational, Quantitative Research, San Carlos City, Philippines

INTRODUCTION

Food waste is recognized as a multifaceted and complex issue involving sustainable production practices that are continuous and multidimensional (Schanes et al., 2018). The quantification of food waste is hindered by the existence of various concepts and definitions, leading to a lack of universal consensus. In developed countries, losses of fruits and vegetables occur notably during harvest and sorting processes, often due to the rejection of products that do not meet retailers' quality standards (Zandonadi, 2021). The hospitality industry, particularly the food service sector, faces significant challenges related to food waste, with an estimated 40% occurring in customer-facing businesses such as restaurants, supermarkets, and hotels. Approximately 26% of food waste originates from the food service sector alone (Lipinski & O'Connor, 2016).

Knowledge can be actual or theoretical; most people learn it through school or practice (Habermas, 2015). People can only create knowledge if they are interested in studying and learning the social and physical worlds

and putting what they know into practice. Only a little research has been done on what people know about information and teaching efforts yet (Barrion et al., 2023).

The impact of employee attitudes on food waste in food service establishments is critical, as food waste presents a significant challenge for the industry with substantial environmental and economic repercussions (Stöckli et al., 2018). Research has linked food waste in restaurants and industrial kitchens to several issues, including overproduction, poor meal preparation, and customer behavior (Ko & Lu, 2020; Labib et al., 2023).

Behavioral intentions can offer insights into the inclination to adopt practices promoting food waste reduction and recycling (Warringa, 2021). According to studies commissioned by the Food and Agriculture Organization (FAO), global food loss and waste annually are estimated at approximately 30% for cereals, 40-50% for root crops, fruits, and vegetables, 20% for oilseeds, meat, and dairy products, and 35% for fish (FAO, 2015). Conversely, several researchers have examined how knowledge influences specific behaviors related to food waste. Farr-Wharton et al. (2014) and Barr (2007)

Discovered that one's experiences and knowledge about food significantly impact one's intention to adopt behaviors linked to food disposal. Also, Principato et al. (2015) found that people who do not need to learn more about the expiration date are more likely to throw away food. Graham-Rowe et al. (2015) and Aschemann-Witzel et al. (2018) additionally show that the FWB is significantly affected by how much people know about how to handle food (Barrion et al., 2023).

The existing research clarifies various aspects of food waste in the hotel business, emphasizing quantification, causes, and behavioral implications. Still, more information about how staff attitudes affect food waste in food service establishments is needed. Few studies have examined how employee attitudes play a part in food service settings, despite research on the more significant behavioral intentions and knowledge variables impacting food waste behaviors among consumers and households. Developing focused interventions and policies within the food service industry requires understanding how staff attitudes, motives, and actions interact with food waste management measures.

The study was motivated by the critical need to address food waste issues in food service establishments, mainly focusing on the role of employee attitudes—a gap identified in existing research. Understanding how employee attitudes influenced food waste practices was crucial for developing targeted strategies to reduce waste and promote sustainability. The rationale behind this study lies in the potential impact of employee knowledge, attitudes, and behavioral intentions on food waste generation and disposal practices. By investigating this relationship in selected food service establishments in Northern Negros, the study aimed to provide actionable insights that could inform policies and interventions to enhance food waste management practices. The goal was to formulate a recycling strategy that supported establishments in implementing, maintaining, and complying with proper food waste management protocols.

Statement of the Problem

The study aimed to determine knowledge, attitude and behavioral intention on food waste of employees in selected foodservice establishment in Northern Negros.

Specifically, this study sought to answer the following questions:

1. What is the level of knowledge on food waste management of employees in selected food service establishment in terms of food waste recycling, positive benefits of food waste management and minimizing food waste/food waste as a source of livelihood when they are taken collectively and are grouped according to age, sex, number of years operations, tenure, forms of organization, and types of business establishment?
2. What is the level of attitude on food waste management of employees in selected food service establishments in terms of thriftiness and proper budget allotment, attitude on food waste, and health consciousness when they are taken collectively and when they are grouped according to age, sex, number of years operations, tenure, forms of organization, and types of business establishment?

3. What is the level of behavioral intention on food waste management of employees in selected food service establishments in terms of Awareness of consequences, Ascription of responsibility, Personal norm, Filial piety, and Intention to reduce food waste when they are taken collectively and when they are grouped according to age, sex, number of years operations, tenure, forms of organization, and types of business establishment?
4. Is there a significant difference in the level of knowledge, attitude and Behavioral intention on food waste management of employees in selected food service establishment in terms of variables and when they are grouped according to age, sex, number of years operations, tenure, forms of organization, and types of business establishment?
5. Is there a significant relationship between the level of knowledge and attitude on food waste management in selected food service establishment?
6. Is there a significant relationship between the level of respondents' knowledge and Behavioral Intention on food waste management in selected food service establishment?

Hypotheses

Given with the inferential objectives of the study the following hypotheses were formulate:

1. There is no significant difference in the level of respondents' knowledge, attitude and behavioral intention on food waste management of employees in selected food service establishment in terms of the variables when they are grouped according to age, sex, number of years operations, tenure, forms of organization, and types of business establishment.
2. There is no significant relationship between the level of respondents' knowledge and attitude on food waste management of employees in selected food service establishment.
3. There is no significant relationship between the level of respondents' knowledge and behavioral intention on food waste management in selected food service establishment.

Framework

The KAP (Knowledge, Attitudes, and Practices) framework is integrated into the research framework as a systematic approach to understanding and assessing factors influencing behavior change and decision-making. The framework encompasses three key components: knowledge, referring to individuals' understanding and awareness of relevant information; attitudes, encompassing their beliefs, perceptions, and emotional responses towards the subject; and practices, representing their actual behaviors, habits, and actions in real-life situations (Gusti et al., 2015).

Knowledge and skills specific to food management are also essential to food waste diversion (Graham-Rowe et al., 2014; Whitehair et al., 2013). Food management skills have been the focus of various food waste diversion campaigns and interventions (Oliver, 2010; Pollan, 2008; Qvested et al., 2013). Having specific food-related knowledge and management skills decreases the actual and perceived costs of food preparation and waste management. Consumer perception of their ability to affect systems is also essential in determining action (Eccles & Wigfield, 2002; Alattar et al., 2020).

Meanwhile, cognitive and affective statements measured the attitude toward food waste. Cognitive statements included items such as "Food waste does not bother me" and "My actions towards food waste do not make a difference," which are similar to questions posed in other studies (Brook Lyndhurst, 2007; McKenzie-Mohr et al., 1995; Neff et al., 2015; Alattar et al., 2020).

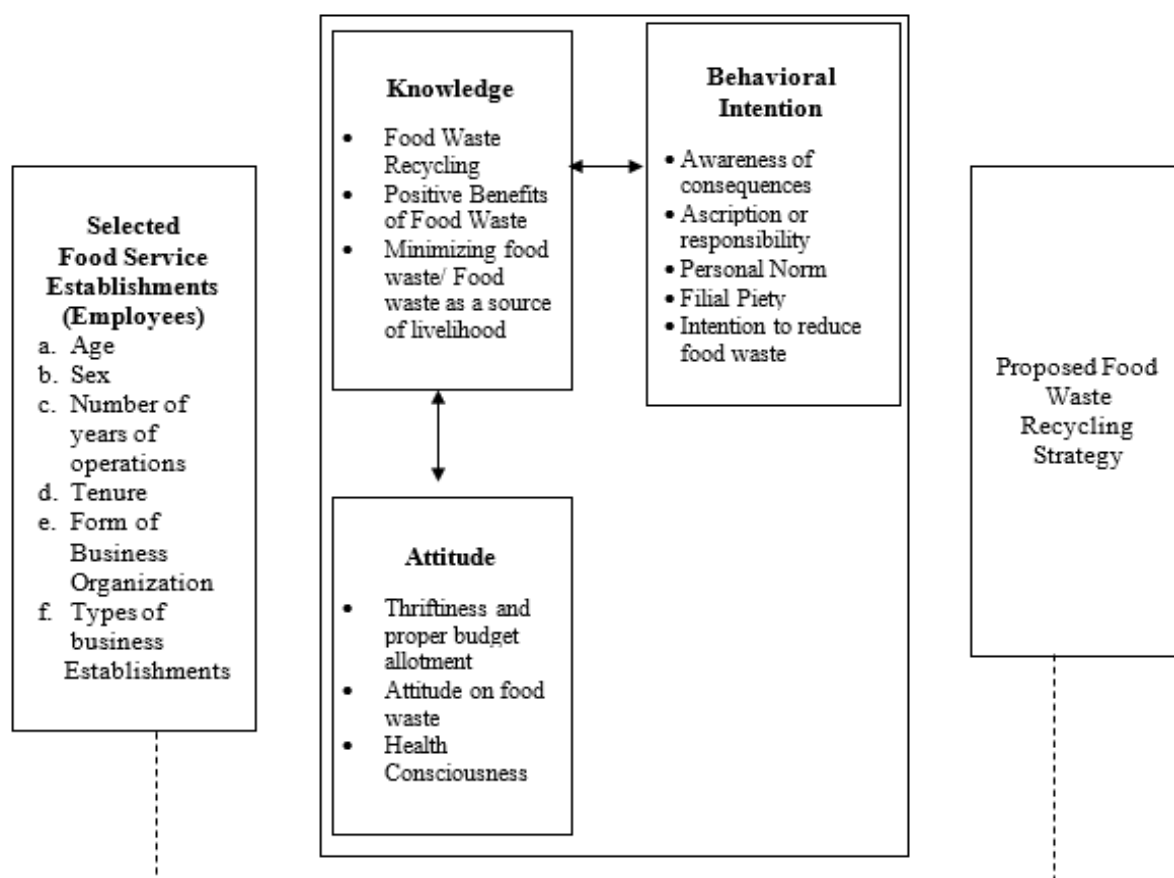
To complement the analysis of how consumer food waste has been studied in the literature, as investigated the theories used to support the selected studies, the great majority of the studies use attitudes and behaviors towards food waste. These attitudes can be attributed to general behaviors that increase food waste or specific aspects associated with the issue, such as suboptimal food consumption (de Hooze et al., 2017). or packaging issues (Williams et al., 2012). The studies reviewed general aspects of food waste, contributing to the understating of consumer food waste (Parfitt et al., 2010).

The available research vaguely mentions strategies and behaviors that lead to food waste in restaurants (Sakaguchi et al., 2018). The behaviors leading to food waste in restaurants need further research; as Blum (2020) stated, there is an evolving amount of literature concerning food waste that focuses on behaviors leading to an increase in food waste. However, waste management strategies still need to be improved in the United States, and the focus should be on restaurant food processes (Blum, 2020). Such food processes include preparation, storage, food waste inventory systems, reducing consumer waste, and reducing portion sizes (Blum, 2020; Ratliff, 2023).

The KAP framework is applied to assess employees' Knowledge, Attitudes, and Behavioral Intentions regarding food waste management in selected food service establishments in Northern Negros. This framework delves into employees' understanding of food waste, their beliefs and motivations towards waste reduction, and their intentions to implement waste management practices. Using the KAP framework, the study aims to understand how these factors influence actual practices, guiding the development of targeted interventions for sustainable waste management in the region.

The study was guided by a modified IPOO model that incorporated the study's outcome. Inputs included the profile of food service establishments, such as business organization, years in operation, and establishment type. The study utilized analysis dimensions for knowledge (food waste recycling, benefits of waste reduction), attitude (thriftiness, health consciousness), and behavioral intentions (awareness of consequences, responsibility, and intention to reduce waste). Process evaluation and implementation were overseen by the Northern Negros Local Government Unit. Results were used to develop action plans for waste reduction. The study examines how attitudes and intentions influence behavior in reducing food waste, aiming to create a recycling strategy for Northern Negros and reduce waste production.

Figure 1 Conceptual Model



Scope and limitation

This study, titled "Knowledge, Attitude, and Behavioral Intention of Food Waste Management in Selected Foodservice Establishments in Northern Negros," specifically investigates food waste management practices

within hospitality establishments such as restaurants, hotels, and cafeterias in the Northern Negros region. The study focuses on understanding individuals' knowledge, attitudes, and actions regarding food waste management in these establishments. It is geographically focused on Northern Negros to capture regional nuances and challenges. However, it is essential to note the study's limitations, as the findings may only generalize to some hospitality facilities outside this region. The study employed a survey questionnaire to gather data, which took several hours or days to complete. The research was conducted in February-May 2024 to ensure relevance and timeliness.

Significance

The result of the study may benefit the following:

Food Service Establishment Owner

The results of this study can shed light on how well-functioning and efficient the facilities' present food waste management procedures are. It can determine where waste reduction, cost-cutting, and sustainability initiatives must be strengthened.

Kitchen Staff

Assist kitchen workers in realizing the significance of appropriate food waste management in reducing waste and providing suggestions for better food preparation, storage, and disposal techniques.

Food Service Manager

Provide evidence-based suggestions for improving food waste management practices. Emphasize areas where present methods might be strengthened to improve managerial decision-making.

Community

Raise awareness about the harm that food waste causes to the environment and

the part that nearby lodging facilities play in it and urge the local population to support companies that use environmentally friendly trash handling techniques.

Researcher

Add to the corpus of knowledge on food waste control, especially in the hotel industry, and establish a foundation for additional study, contrasts, and enhancements to waste management tactics.

Future Researcher

Provide a framework for further research examining various facets of food waste management or extend the study to more areas and stimulate fresh approaches to trash reduction and sustainability research.

Definition of Terms

For a better understanding of the essential terms used in the study, the following words were defined operationally:

Knowledge

It is the factual knowledge and comprehension of food waste management procedures that people working in the

chosen San Carlos City hospitality enterprises possess. It involves being aware of laws, regulations, and the effects they have on the environment.

Food Waste Recycling. Is defined as Gathering, processing, and turning wasted food items into energy or valuable products.

Positive Benefits of Food Waste. The study focused on the benefits of following the steps and procedures and knowing the value of food waste management.

Minimizing Food Waste. Is necessary for environmental sustainability and presents economic gain and revenue generation opportunities.

Attitude

It refers to the quantifiable and visible reactions, viewpoints, and actions of people about food waste management in the chosen hospitality establishments in San Carlos City.

Thriftness and Proper Budget Allotment. As used in the study, this term is defined as cutting costs for the food service establishment to streamline all expenses in all ingredients used in creating products. Employees should know how to value expenses as they know how to save costs in the establishment.

Attitude on Food Waste. As used in the study, the term is defined as the diverse attitudes that exist among individuals and communities regarding food waste. These attitudes often mirror individual habits, environmental awareness, and the ideals of the greater community.

Health Consciousness. The association between health consciousness and food waste demonstrates an awareness of one's health and the broader environmental impacts of food intake. At the same time, it is the individual's priority to make health-conscious choices, and often, these choices align with strategies that reduce food waste.

Behavioral Intention

It expressed the likelihood or willingness of food service establishment operators in San Carlos City to engage in recycling practices within their businesses.

Awareness of the Consequences. Degree of awareness demonstrated by San Carlos City's food service outlet operators of the possible results, implications, or ramifications of their recycling practices or lack thereof.

Ascription of Responsibility. The extent to which San Carlos City food service establishment employees believe they have a duty or responsibility to handle recycling-related concerns in their businesses, either on their own or alongside others.

Personal Norms. Individuals internalized a sense of duty or obligation to participate in recycling activities within their San Carlos City restaurant.

Filial Piety. A deeply embedded cultural norm or value that strongly emphasizes showing consideration, deference, and respect to one's parents and ancestors.

Intention to Reduce Food Waste. An individual's demonstrated readiness or resolve to take proactive measures to reduce food waste.

Food Service Establishment. Refers to the entirety of commercial operations that go into preparing, transporting, and serving prepared foods in the chosen San Carlos City dining venues, including cafeterias and restaurants. This term also refers to a canteen, cafeteria, bar and refreshments, hotel, catering establishment, concessioners, food stand consigners, and fast food chain.

Food Waste. As used in the study, it is defined as the deliberate or inadvertent disposal of potentially edible food inside San Carlos City's hospitality establishments for the sake of this study. It comprises parts considered unfit for ingestion, both edible and inedible.

Recycling Strategy. As used in the study, it refers to a planned strategy or collection of techniques intended to efficiently coordinate and boost recycling operations inside a particular setting, such as a city, neighborhood, business, or industry.

METHODOLOGY

This chapter presents the research design, locale, population, sampling technique, data-gathering procedures, and statistical tools for analyzing the gathered data.

Design

To determine the knowledge, attitude, and behavioral intention of food waste management among employees in selected food service establishments in San Carlos City, the researcher used a Descriptive Comparative and Correlational research design (Asmelash & Kumar, 2019). Descriptive research aims to describe a phenomenon and its characteristics systematically (Douglas, 2018). It collects information about variables without changing the environment or manipulating any variables (Drummond & Murphey-Reyes, 2017).

Descriptive comparative-correlation research involves quantitative surveys with a questionnaire, enabling the accurate description of the facts and characteristics of a research population (Litheko & Potgieter, 2016; Personal & Archive, 2021). Researchers conduct relationship studies to examine two changing observations to see if there are any statistically significant differences between them (Ansari et al., 2022).

Respondents and Sampling Technique

Since the researcher conducted the study in Northern Negros, the respondents of this study are the kitchen staff, helper, chef, dining staff/waiter, supervisor, and restaurant manager of eighty-nine (89) food service establishments with two hundred seventy-three (273) employees. The sampling technique that is used is multi-stage sampling. Multi-stage sampling is an extension of cluster sampling in that clusters are randomly selected first, and second, sample units within the selected clusters are randomly selected. In this design, random selection occurs at both the cluster or group level and the sample unit level they exhibit in a study.

Table 1 Types of Food Service Establishments

Foodservice establishment	# of Establishment	Establishment Covered	Total Population (N)	Sample (n)	Percentage
1. Bar and Restaurant	28	14	148	43	15.91
2. Hotel	6	2	20	6	2.15
3. Cafeteria	55	9	94	26	10.11
4. Fast-food catering service	13	7	48	14	5.16
5. Restaurant	33	13	137	39	14.73
6. Consigners	67	62	413	124	44.41
7. Food Concessioners	40	7	70	21	7.53
Total	202	89	930	273	100.00

On the other hand, in Table 1, the results show that the study had Two hundred seventy-three (273) respondents, wherein 71.06 percent (n=194) of the respondents were between the age of 18-32 (age younger). Respondents were weighted towards males, around 63.74 percent (n=174). A large percentage of respondents were shorter (7 years and below), with 78.75 percent (n=215). Most of them are regular employees, with 54.58 percent (n=149). More so, around 59.71 percent (n=163) of the respondents were sole proprietors in business organizations. Likewise, most respondents are usually Consigners, with 45.42 percent (n=124).

Table 2 Profile of the Respondents

Variables	Groupings	Frequency	Percent
Age	Age Younger (18-32 yrs. old)	194	71.06
	Age Older (33-47 yrs. old)	79	28.94
	Total	273	100.00
Sex	Male	174	63.74
	Female	99	36.26
	Total	273	100.00
No. of years of Operations	Shorter (7 years and below)	215	78.75
	Longer (8 years and above)	58	21.25
	Total	273	100.00
Tenure	Regular	149	54.58
	Contractual	71	26.01
	Part-time	53	19.41
	Total	273	100.00
Types of Business Organization	Sole Proprietorship	163	59.71
	Partnership	71	26.01
	Corporation	21	7.69
	Cooperative	18	6.59
	Total	273	100.00
Types of Business Establishment	Restaurant	39	14.29
	Food Vendors	124	45.42
	Cafeteria	26	9.52
	Fast-food Catering Services	14	5.13
	Bar and Restaurant	43	15.75
	Hotel	6	2.20
	Canteen	21	7.69
	Total	273	100.00

Instrument

The researcher surveyed with the modified questionnaire to gather the data needed to answer the problem statement.

For the researcher to determine the Knowledge, Attitude, and behavioral intention on food waste of employees in selected food service establishments in Northern Negros, the following dimensions were used in identifying the Knowledge of food waste recycling, and positive benefits of food waste management, and minimizing food waste/food waste as a source of livelihood. However, in identifying the attitude dimensions, the researcher uses the following dimensions: thriftiness and proper budget allotment, attitude toward food waste, and health consciousness. In contrast, in the practice dimensions, the researcher uses behavioral intention, such as awareness of consequences, the ascription of responsibility, personal norm, filial piety, and intention to reduce food waste.

The survey questionnaire was designed in 4 (four) parts, as follows:

Part I respondents' demographic profile includes age, sex, tenure, form of business organization, business establishment, and number of years in service.

Part II determines the level of Knowledge of food waste management of employees in food service establishments in Northern Negros, such as food waste recycling, positive benefits of food waste management, and minimizing food waste as a source of livelihood when they are grouped according to age, sex, tenure, number of years of operations, form of business organization, and forms of business establishment?

Part III in terms of the level of attitude to food waste management of employees in selected food service establishments in Northern Negros, such as thriftiness and proper budget allotment, attitude to food waste, and health consciousness when they are grouped according to age, sex, tenure, number of years of operations, a form of business organization, and forms of business establishment?

Part VI as to the level of Behavioral Intention on food waste management in selected food service establishments in Northern Negros, such as awareness of consequences, ascription of responsibility, personal norm, filial piety, and intention to reduce food waste, when grouped according to age, sex, tenure, number of years of operations, a form of business organization, and number of business establishments.

The researcher uses the 4-point Likert scale response to determine the Knowledge, Attitude, and behavioral intention of food waste management in selected food service establishments in Northern Negros.

Range	Verbal Description	Verbal Interpretation for Knowledge, Attitude, and Behavioral Intention
1.00 – 1.75	Strongly Disagree	Very Low
1.75 – 2.50	Disagree	Low
2.51 -3.25	Agree	High
3.26 – 4.00	Strongly Agree	Very High

Validity

Validity referred to the extent to which the research instrument accurately measured the concepts or variables it was intended to assess (Rodenas, 2025). The survey questionnaire was subjected to validity using the Content Validity Ratio (CVR) developed by C.H. Lawshe. According to David (2002), an instrument appropriately covers the topics, the variables intended to be studied, and the items adequately represent the subject to be assessed. CVR is a broadly employed method to measure the content validity of an instrument through empirical assessment. This method uses a group of judges who are experts in the instrument's construct, and each expert analyzes the things related to that construct on their own by Lawshe (1975) and Jeldres & Costa (2023).

The content validity was rated by a jury of experts composed of 15 members from the Hospitality and Tourism Industry (with a Doctorate and Master's degree). Polit et al. (2007) developed a critical CVR number 600 for fifteen (15) judges. This is a step forward for Lawshe, who suggested a critical CVR calculation with at least twelve judges. (Jeldres & Costa, 2023b).

The validity index was 0.600 Content Validity Ratio is a method for measuring agreement among experts regarding how essential a particular item is (Almanasreh et al., 2019).

The results obtained a score of .94, which is interpreted as valid.

Reliability

Reliability refers to the consistency, stability, and dependability of a research instrument in measuring the intended variables. A reliable instrument produces consistent results when administered under similar conditions (Rodenas and Menes, 2026). The scale's reliability was examined using Cronbach's alpha internal consistency coefficient, reportedly 0.84. Then, we made observations using the video recording technique to see whether environmental awareness is reflected in behaviors. "Cronbach's Alpha was utilized to achieve reliability of the survey instrument.

The value of Cronbach's Alpha is usually expressed as a number between .00 and 1.0. A value of .00 means no consistency in measurement, while a value of 1.0 indicates perfect consistency. The acceptable range is between 0.70 and 0.90 or higher, depending on the type of research. Cronbach's Alpha values of 0.7 and above indicate that all the variable indices dimensions demonstrate acceptable internal consistency. Furthermore, Cronbach's Alpha of 0.70 is acceptable for exploratory research, while 0.80 and 0.90 are acceptable for basic research and applied scenarios.

The reliability of instruments used in published science education studies is expected to be framed using a statistic known as Cronbach's alpha. Cronbach's alpha has been described as 'one of the most important and pervasive statistics in research involving test construction and use' to the extent that its use in research with multiple-item measurements is considered routine. Alpha is commonly reported for developing scales to measure attitudes and other affective constructs.

Cronbach's alpha measures the internal consistency or reliability between several items, measurements, or ratings. In other words, it estimates how reliable the responses of a questionnaire (or domain of a questionnaire), instrumentation, or rating evaluated by subjects are, which will indicate the stability of the tools.

The survey questionnaire was administered to thirty (30) food service establishment employees in Bacolod City who were not respondents to the study. The minimum acceptability scale was 0.70. This was normally seen as ≥ 0.70 (five instances) or > 0.70 (three instances), although one article more vaguely referred to "the acceptable values of 0.7 or 0.6".

During the reliability testing of the survey instrument, each variable was also tested with the corresponding computed coefficient of correlation: knowledge was .916, attitude was .886, and behavioral intention was .930.

The computed coefficient of correlation was .953, which is higher than the minimum level of 0.70. Therefore, it signifies that the items on the instrument were reliable.

Data Collection Procedure

As soon as the validity and reliability of the data-gathering instrument were attained, the same instrument was reproduced and distributed to the actual respondents of the study.

The researcher first secures a letter of approval from the City Mayor to get a data list of food service Establishments from the Business Permits & Licensing Office (BPLO) of Northern Negros. The letter also includes the endorsement of approval from the City Tourism Office in Northern Negros to conduct the establishment. Prior to the conduct of the study, the researcher administered the survey questionnaire personally and given to every respondent in the establishment in Northern Negros.

The researcher personally facilitates the survey and explains to the respondents how to answer the questionnaire and the purpose of the study. The respondents were asked to answer the survey questionnaire as honestly as possible so that the researcher could have complete and accurate data. The instrument is retrieved after the respondent answers the questionnaire. The results are organized, tallied, and subjected to statistical treatment.

Data Analyses

After the data were retrieved, they were subject to a statistical process. The data gathered from the participants were tallied to facilities statistical analysis.

For problems no. 1, 2, and 3, the level of knowledge, attitude, and behavioral intention on food waste of employees in selected food service establishments in Northern Negros in the aspect of knowledge such as food waste recycling, positive benefits of food waste management and minimizing food waste/food waste as a source of livelihood, while on the aspect of attitude are the following of thriftiness and proper budget allotment, attitude on food waste and health consciousness at the same with the aspect of behavioral intention such as awareness of consequences, the ascription of responsibility, personal norm, filial piety and intention to reduce food waste when they are taken collectively and when they are grouped according to age, sex, number of years in operations,

Tenure, form of business organization, types of business Establishments of the researcher used mean and standard deviation as statistical tool.

For problem no. 4, the significant difference in the level of knowledge, attitude, and behavioral intention on food waste management of employees in selected food service establishments of Northern Negros in terms of age, sex, number of years in operations, Tenure, form of business organization, types of business Establishments of the researcher will use t-test and ANOVA as statistical tool.

For objective no. 5, the significant relationship between knowledge and attitude on food waste management of employees in selected food service establishments of Northern Negros, the researcher employed a Pearson Product Moment Correlation Coefficient (Pearson r).

Ethical Considerations

To ensure the ethical soundness of the study, the researcher addressed the general principles of respect for persons, beneficence, and justice.

Social value

This current pandemic has posed challenges to the country's tourism sector. In line with this, the study is of great value to society in developing the knowledge, attitude, and behavioral intention on food waste of employees in selected food service establishments. In addition, this study's conclusions, recommendations, and output are data-driven and scientifically processed so that they will be responsive to food waste management of food service establishments, especially the employees. Lastly, the results of this study shall serve as literature for future researchers to adapt, adopt, or explore using the variables not covered in the study.

Informed consent

The study's respondents were determined using stratified sampling. Respondents were given time to read the confidentiality clause of the questionnaire. The researcher secured confidentiality on the part of the respondents involved and took full responsibility for whatever issues arose in the conduct of the study. Formulating a food waste recycling strategy was the study's primary purpose; hence, the researcher focused on this matter and avoided other issues not considered by the study.

Vulnerability of the research participants

The categorical and context vulnerability of the research participants was safeguarded by ensuring that their consent was given under no coercion, influence, or probability of being wrong. At the same time, the benefits that the participants would gain were reasonably greater than the risks that were highly minimized in the study.

Risk and benefits

The respondents' participation was significant in this study; however, they are free to withdraw and entitled not to answer the questions given if they feel unsafe, discomfort, and inconvenient. Concerning the participant's disclosed information, the benefits from the result of this study would be the basis of further enhancement of strategic plan in the implementation of learning modalities and for the establishment and formulation of scientific and technological plans that contribute to the current educational system in this time of the pandemic.

Privacy and confidentiality

The data collected in this study was safely kept confidential and destroyed upon completion. This data will be used for study purposes only.

Justice

Although a stratified sampling technique was employed, the researcher ensured that all guests during the covered period were given an opportunity to be selected as respondents to the study.

Transparency

In this study, all methods found herein were religiously followed by the researcher, especially regarding ethical considerations. This was secured for the researcher and shall inform the participants of the nature of the study, as well as any queries and concerns, and address the discomfort of the research participants. Lastly, the researcher stands accountable for the results of this research being objective and unbiased and has no attempt to influence in any way that shall distort the research.

Qualifications of the researcher

The researcher has completed the academic requirements of the Master of Science in Hospitality Management program, with emphasis on qualitative and quantitative research courses. He was arduously trained and is continuously monitored by LCC Bacolod Graduate School to ensure the quality of her research. Significantly, the researcher is intensively capacitated by the Dean of LCC Bacolod Graduate School to comply with ethical considerations in conducting this research.

Adequacy of facilities

The financial resources and equipment/facilities for the study rely on the researcher's personal resources. No financial aid was provided for the study.

Community involvement

The community members provided the context and the data, and they shall be the recipients of the output of this study. The employees, being the respondents of the study, provided their perspectives on the quality and implementation of the study and their encountered challenges, which provided the data for the creation of sound conclusions, recommendations, and proposed outputs in this study. Similarly, future tourists will benefit from this study through the quality and improved services of the resort.

RESULTS AND DISCUSSIONS

This chapter discusses the presentation and analysis of data collected about the statement of the problem. The output of this study determined the knowledge, attitude, and behavioral intention regarding food waste in selected food service establishments in San Carlos City.

The data were analyzed and interpreted to answer questions about the demographic profile of the respondents in terms of age, sex, number of years in operation, tenure, form of business organization, and types of hospitality establishments. The researcher examined each aspect of the variables in terms of knowledge, focusing on the following aspects: food waste recycling, positive benefits of food waste management, and minimizing food waste/food waste as a source of livelihood. The following aspects were considered in attitude: thriftiness and proper budget allotment, attitude towards food waste, and health consciousness. Finally, in terms of behavioral intention, the following aspects were examined: awareness of consequences, ascription of responsibility, personal norm, filial piety, and intention to reduce food waste.

Table 3 Knowledge on Food Waste of Employees in Selected Food Service Establishment in Northern Negros when taken collectively

Dimensions	Mean	SD	VI
Food waste recycling	3.28	0.299	VHK
Positive benefits of food waste management	3.28	0.416	VHK
Minimizing food waste/food waste as a source of livelihood	3.23	0.328	HK
Overall	3.27	0.249	VHK

Legend: SD = Standard Deviation, VI = Verbal Interpretation, VHK = Very High Knowledge, HK = High Knowledge

As shown in Table 3, knowledge of food waste of employees in selected food

service establishments in Northern Negros when taken collectively. It revealed the highest mean score of 3.28 for food waste recycling and positive benefits on food waste management, with Standard Deviation scores of 0.299 and 0.416, respectively. Minimizing food waste/food waste as a source of livelihood has the lowest mean score of 3.23, with a standard deviation score of 0.328.

The results imply that employees have an extensive understanding of food spoilage and preservation methods, which points towards reducing food waste through improved food recycling practices. By implementing these practices, we can conserve resources, lessen greenhouse gas emissions, and create a more sustainable food system. More excellent knowledge about food waste, from minimizing purchases to maximizing storage techniques, empowers us to reduce food spoilage significantly. By adopting these practices and embracing food recycling, we can conserve resources, lessen greenhouse gas emissions, and create a more sustainable food system.

According to the study by Filimonau et al. (2019), to reduce food waste, educating the public about food service food waste and encouraging patrons to work with businesses to reduce it, providing tax breaks to businesses in the sector, and enhancing the effectiveness of commercial food waste sorting, collecting, and recycling processes. On the other hand, Elnasr et al. (2021) affirm employees' perceptions of the causes and driving factors behind food waste and consider why food waste occurs and how best to reduce waste to the minimum. Also, as noted by Abidin et al. (2022), adopting good food storage practices can prevent avoidable food spoilage. Furthermore, based on the study of Derqui et al. (2018), motives reported in the literature to reduce food waste include saving money, saving the planet, saving hungry people, and reducing guilt.

Table 4 Knowledge on Food Waste of Employees in Selected Food Service Establishment in Northern Negros according to Age

Dimensions	Younger (18-32 yrs. Old, n=194)			Older (33-47 yrs. Old, n=79)		
	Mean	SD	VI	Mean	SD	VI
Food waste recycling	3.30	0.293	VHK	3.25	0.312	HK
Positive benefits of food waste management	3.35	0.420	VHK	3.11	0.355	HK
Minimizing food waste	3.27	0.328	VHK	3.14	0.312	HK
Overall	3.31	0.244	VHK	3.16	0.234	HK

Legend: SD = Standard Deviation, VI = Verbal Interpretation, VHK = Very High Knowledge, HK =High Knowledge

Table 4 shows the Knowledge of food waste of employees in selected food service establishments of Northern Negros according to age.

Out of 273 respondents in terms of the Knowledge of food waste of employees in selected foodservice establishments in Northern Negros. When Knowledge of respondents is a concern, when taken the results display that the younger (18-32 years old) got the highest mean score of 3.31 (SD = 0.244, VI = VHK) while older (33-47 years old) with the lowest mean score of 3.16 (SD = 0.234, VI = VHK).

As the younger group (18-32 yrs. old), "Positive benefits of food waste management" got the highest mean score of 3.35 (SD = 0.420, VI = VHK), while "Minimizing food waste/food waste as a source of livelihood" got the lowest mean score of 3.27 (SD = 0.701, VI = VHK).

Likewise, for those who are older (33-47 yrs. old), the results reveal that "Food waste recycling" got the highest mean score of 3.25 (SD = 0.312, VI = VHK) while "Positive benefits of food waste management" got the lowest mean of 3.11 (SD = 0.355, VI = HK).

Younger generations may be more exposed to information about food waste's environmental and social impacts through social media, educational programs, or documentaries. It could also indicate that while younger people understand the importance of recycling food waste, older people might have more established habits or routines for recycling food waste.

As indicated in the research by Filimonau et al. (2020), young people tend to waste more food than older individuals, emphasizing the importance of instilling environmental and social awareness at a young age to foster a sustainable society. Additionally, according to the study by Phooi et al. (2022), results have shown that food waste is linked to social, economic, and environmental impacts, highlighting the need for increased awareness and education on the consequences of wasteful practices. Moreover, as noted in the study of Teoh et al. (2022), the role of social media in promoting food waste prevention behaviors has been recognized. Media coverage on environmental issues and sustainable practices can influence social norms and encourage individuals to adopt eco-friendly behaviors, including reducing food waste. Additionally, based on the study of Mumtaz et al. (2022), the habit has been identified as a critical factor in determining ecologically friendly behavior, suggesting that established habits among older individuals may influence their recycling practices compared to younger generations.

Table 5

Dimensions	Male (n=174)			Female (n=99)		
	Mean	SD	VI	Mean	SD	VI
Food waste recycling	3.25	0.285	HK	3.34	0.316	VHK
Positive benefits of food waste management	3.22	0.308	HK	3.39	0.544	VHK
Minimizing food waste/food waste as a source of livelihood	3.21	0.293	HK	3.27	0.380	VHK
Overall	3.23	0.216	HK	3.33	0.287	VHK

Knowledge on Food Waste of Employees in Selected Food Service Establishment in Northern Negros according to Sex

Legend: SD = Standard Deviation, VI = Verbal Interpretation, VHK = Very High Knowledge, HK =High Knowledge

Table 5 shows knowledge of food waste of employees in selected food service establishments in Northern Negros according to sex.

As to the knowledge of food waste of employees in selected food service establishments in Northern Negros. As to the knowledge of employees in selected food service establishments, when taken as to sex, Females got the highest mean score of 3.33 (SD = 0.287, VI = VHK), while Males got the lowest mean score of 3.23 (SD = 0.216, VI = HK).

Based on the male respondents, "Food waste recycling" got the highest mean score of 3.25 (SD = 0.285, VI = HK), while "Minimizing food waste" got the lowest mean score of 3.21 (SD = 0.216, VI = HK).

Likewise, as for Females, the results reveal that "Positive benefits of food waste management" got the highest mean score of 3.39 (SD = 0.544, VI = HVK) while "Minimizing food waste/food waste as a source of livelihood" got the lowest mean of 3.27 (SD = 0.380, VI = VHK).

This implies that people, on average, seem more interested in the positive outcomes of food waste management (environmental benefits, resource conservation) than simply reducing food waste. This suggests a potential disconnect between understanding the issue and taking preventative actions. Moreover, compared to the general trend, men seem to value food waste recycling more. This suggests a possible action-oriented approach among men regarding food waste management. They might be more likely to use practices like composting or designated recycling bins.

Supported by the study Shaw (2021), The observation that individuals, regardless of gender, may prioritize the positive outcomes of food waste management, such as environmental benefits and resource conservation, over direct waste reduction efforts suggest a nuanced perspective on motivations toward food waste. This preference may stem from a need for more awareness about the impacts of food waste generation (Poonia et al., 2022).

They are leading to wastage at various stages of the food lifecycle. Factors at individual, household, and external levels interact to influence food waste behavior. The study Beheshti & Heydari, (2023) discusses municipal food waste recycling as an environmental strategy. It highlights the importance of waste-related behaviors such as reducing, reusing, and recycling to manage food waste. It aligns with the notion that certain groups, like men, may exhibit a more action-oriented approach toward food waste management, possibly engaging in practices like composting or using designated recycling bins. Moreover, the research Chuah & Singh, (2020) could be relevant in understanding gender differences in food waste and disposal behavior among university students. While their study found no significant difference between young Romanian males and females in the amount of food waste generated, it provides insights into the involvement of different genders in reducing food waste. This further supports the observation that men may value food waste recycling more, indicating a proactive stance toward managing food waste.

Table 6 Knowledge on Food Waste of Employees in Selected Food Service Establishment in Northern Negros according to Number of Years of Operations

Dimensions	Shorter (7 years and below)			Longer (8 years and above)		
	Mean	SD	VI	Mean	SD	VI
Food waste recycling	3.31	0.313	VHK	3.19	0.218	HK
Positive benefits of food waste management	3.31	0.440	VHK	3.18	0.294	HK
Minimizing food waste/food waste as a source of livelihood	3.22	0.341	HK	3.25	0.280	HK
Overall	3.28	0.260	VHK	3.21	0.194	HK

Legend: SD = Standard Deviation, VI = Verbal Interpretation, VHK = Very High Knowledge, HK =High Knowledge

As table 6 shows the knowledge of food waste of employees in the food service establishments of Northern Negros according to the Number of Years in Operation.

Based on the knowledge of employees on food waste in foodservice establishments of Northern Negros the results show that when considering the number of years of operation, shorter years of operation (7 years and below) got the highest mean score of 3.28 (SD = 0.260, VI = VHK) while longer years of operation got the lowest mean score of 3.21 (SD = .194, VI = HK).

However, when shorter (7 years and below) operations are concerned, "food waste recycling" and "Positive benefits of food waste management" while "minimizing food waste/ food waste as a source of livelihood" got the lowest mean score of 3.22 (SD = .341, VI = HK).

Likewise, for longer years of operations (8 years and above), "minimizing food waste/ food waste as a source of livelihood" got the highest mean score of 3.25 (SD = .280, VI = HK), while "Positive benefits of food waste management" got the lowest mean score of 3.18 (SD =.294, VI = HK).

The study results imply that newer and established businesses are highly aware of the value of food waste segregation to boost the economy and encourage more gust in the establishment. Newer businesses may have a strong advantage because of the advantages of new technology and the thorough training of their employees. On the other hand, established businesses may use their experience as their competitive advantage over new businesses. Furthermore, collaboration among new and older businesses is a new trend in hospitality

management to boost sales and consumer awareness and partner with sustainable practices like food waste reduction practices.

The data showing that new food service businesses are more aware of how to deal with food waste than ones that are open longer can be explained by a few main points. Younger businesses are more likely to have recently undergone training and education programs that taught them the best ways to recycle and deal with food waste. Most of the time, these programs are based on the newest sustainable standards and ideas. They give new businesses the most up-to-date information and methods to make their operations better, according to the study of da Vitória et al. (2021).

However, it is essential to know that operating length can affect knowledge levels differently. For example, a study that looked at the knowledge, attitudes, and practices of people who work with food in school kitchens found that places that had been open longer tended to have better knowledge results through experience. This difference shows that operating duration has a mixed effect on the food service industry's knowledge and habits, according to the study by da Vitória et al. (2021). In these situations, new businesses that want to improve how they handle food waste can learn a lot from following the tried-and-true best practices of companies with more experience based on the study of Bilska et al. (2022).

Additionally, encouraging new businesses to work together and share their knowledge with more seasoned ones can make their efforts to reduce food waste even more effective. By taking these proactive steps, new food service businesses can get past their first problems and become leaders in environmentally friendly ways to deal with food waste. Based on the interviewees' answers and theories, some ideas were made for improving the hotel's overall food waste management. These included putting in place a system to measure food waste, reviewing the food plan regularly, making employees and customers more aware of the problem, and training staff in bright food waste based on the study of Irwansyah et al. (2022).

Table 7 Knowledge of Food Waste of Employees in Selected Food Service Establishments in Northern Negros according to Tenure

Dimensions	Regular (n=149)			Contractual (n=71)			Part-time (n=53)		
	Mean	SD	VI	Mean	SD	VI	Mean	SD	VI
Food waste recycling	3.30	0.281	VHK	3.21	0.298	HK	3.34	0.335	VHK
Positive benefits of food waste management	3.33	0.302	VHK	3.11	0.343	HK	3.39	0.655	VHK
Minimizing food waste/food waste as a source of livelihood	3.26	0.303	VHK	3.15	0.306	HK	3.23	0.405	HK
Overall	3.30	0.214	VHK	3.16	0.250	HK	3.32	0.296	VHK

Legend: SD = Standard Deviation, VI = Verbal Interpretation, VHK = Very High Knowledge, HK =High Knowledge

As illustrated in Table 7, the results of the study show the knowledge of food waste of employees in the food service establishments of Northern Negros, according to tenure.

Table 5 reveals that in terms of the knowledge of employees on food waste in food service establishments in Northern Negros, as tenure is concerned, part-time employees got the highest mean score of 3.32 (SD = 0.296, VI = VHK). In contrast, contractual employees got the lowest mean score of 3.16 (SD = 0.250, VI = HK).

For regular employees, "Positive benefits of food waste management" got the highest mean score of 3.33 (SD = 0.302, VI = VHK), while "Minimizing food waste/ food waste as a source of livelihood" got the lowest mean score of 3.26 (SD = 0.303, VI = VHK).

The results for contractual employees reveal that "Food waste recycling" got the highest mean score of 3.21 (SD = 0.298, VI = HK), while "Positive benefits of food waste management" got the lowest mean of 3.11 (SD = 0.343, VI = HK).

Moreover, for part-time employees, the results reveal that "Positive benefits of food waste management" got the highest mean score of 3.39 (SD = 0.655, VI = VHK), while "Minimizing food waste/ food waste as a source of livelihood" got the lowest mean of 3.23 (SD = 0.405, VI = HK).

The study implies that regular participants understand the benefits of food waste segregation, demonstrating their commitment to waste management. This suggests a need for employees to engage in waste management through more robust communication or education on food waste. It also implies that the establishment's management team should invest in training and development for their food service employees to create positive feedback from guests or patrons. Highlighting food waste recycling projects' environmental and social benefits may help contractual participants understand and support them.

However, hotel managers often think part-time workers are less dedicated, skilled, and willing to work hard. Because of this, they are less likely to spend money on full training for part-time workers. By contrast, there is less food waste in workplace canteens for individual meals. For some banquets, customers often order a lot, thus generating more leftovers. For example, in the Wanhao Hotel ballroom, the food waste from banquets can be as high as five times the usual amount of food waste generated (Liang et al., 2021). Despite this, there are a lot of part-time workers in the food service business (Inman & Enz, 1995; Jaworski et al., 2018).

Furthermore, part-time workers may be more motivated, leading them to learn independently or through informal channels, resulting in better food waste knowledge test scores. Employers may need to offer more official training, which could make it harder for them to develop these skills fully through organized learning programs. The current situation suggests that part-time workers may use their own motivation and outside tools to learn more about dealing with food waste. This implies that employees need more flexibility and training and sometimes need to execute the proper form of work, leading to problems with the timeliness of service. The most essential thing a food service can do to deliver good customer service is to value its customers' time, according to the study by Jayson Dingil et al. (2023).

Table 8 Knowledge on Food Waste of Employees in Selected Food Service Establishment in Northern Negros according to Forms of Business Organization

Here is your data formatted into a clean, publication-style table:

Dimensions	Sole Proprietorship (n=163)			Partnership (n=71)			Corporation (n=21)			Cooperative (n=18)		
	Mean	SD	VI	Mean	SD	VI	Mean	SD	VI	Mean	SD	VI
Food waste recycling	3.33	0.288	VHK	3.15	0.261	HK	3.22	0.284	HK	3.47	0.356	VHK
Positive benefits of food waste management	3.28	0.331	VHK	3.20	0.554	HK	3.54	0.357	VHK	3.33	0.446	VHK
Minimizing food waste/Food waste as a source of livelihood	3.23	0.298	HK	3.17	0.297	HK	3.42	0.471	VHK	3.27	0.438	VHK
Overall	3.28	0.237	VHK	3.17	0.234	HK	3.40	0.305	VHK	3.36	0.228	VHK

Legend: SD = Standard Deviation, VI = Verbal Interpretation, VHK = Very High Knowledge, HK =High Knowledge

Table 8 shows knowledge of food waste of employees in selected food service establishments of Northern Negros as to form of business organization.

Regarding employees' knowledge of the category forms of business organization, the corporation got the highest mean score of 3.40 (SD = 0.249, VI = SA). When taken as a business organization, the corporation got the highest mean score of 3.40 (SD = 0.305, VI = VHK), while the Partnership got the lowest mean score of 3.17 (SD = 0.234, VI = HK).

As a Sole proprietorship, "Food waste recycling" got the highest mean score of 3.33 with (SD = 0.288, VI = VHK) while "Minimizing food waste/ food waste as a source of livelihood" got the lowest mean score of 3.23 (SD = 0.298, VI = HK).

Likewise, as to Partnership, the results reveal that "Positive benefits of food waste management" got the highest mean score of 3.20 (SD = 0.554, VI = HK) while "Food waste recycling" got the lowest mean of 3.15 (SD = 0.261, VI = HK).

Moreover, regarding corporations, the results reveal that "Positive benefits of food waste management" got the highest mean score of 3.54 (SD = 0.357, VI = VHK) while "Food waste recycling" got the lowest mean of 3.22 (SD = 0.284, VI = HK).

Furthermore, as for Cooperative, "food waste recycling" got the highest mean score of 3.47 with (SD = 0.356, VI = VHK) while "Minimizing food waste/ food waste as a source of livelihood" got the lowest mean of 3.27 (SD = 0.228, VI = HK).

The study implies that regardless of the form of the business organization members who support food waste segregation and recycling, the majority, regardless of working status, are highly aware of the positive outcome of food waste recycling and its importance. Hence, corporations have advantages since they have many resources, so they can always give proper training and awareness to their employees about food waste.

In contrast to this result, corporations seldom monitor plate waste since they do not see it affecting their bottom line or contributing to their service obligations, according to the study Derqui et al. (2018). Regardless of working status, as part of their training, they will participate in seminars and other forms of sustainable development education to deepen their understanding of and dedication to Agenda 2030's Sustainable Development Goals (SDGs), according to the study Feijoo & Moreira (2020). According to the study, restaurants run by corporations are more likely to have an official sustainability strategy. It makes sense, considering corporations often use more organized methods and have more resources, according to the study Baloglu et al. (2022). The corporation's culture influences the performance of an organization based on the study of Abadi et al. (2021).

Table 9

Dimensions	Restaurant			Food Vendors			Cafeteria			Bar and Restaurant			Fast-food Catering Services			Hotel			Canteens		
	Mean	SD	VI	Mean	SD	VI	Mean	SD	VI	Mean	SD	VI	Mean	SD	VI	Mean	SD	VI	Mean	SD	VI
Food waste recycling	3.23	0.282	HK	3.23	0.256	HK	3.22	0.341	HK	3.09	0.289	A	3.48	0.281	VHK	3.45	0.138	VHK	3.46	0.345	VHK
Positive benefits of food waste management	3.28	0.333	VHK	3.15	0.476	HK	3.40	0.254	VHK	3.58	0.356	VHK	3.39	0.235	VHK	3.74	0.211	VHK	3.34	0.429	VHK
Minimizing food waste/food waste as a source of livelihood	3.37	0.306	VHK	3.12	0.279	HK	3.19	0.294	HK	3.45	0.488	VHK	3.27	0.206	VHK	3.69	0.304	VHK	3.32	0.456	VHK
Overall	3.30	0.224	VHK	3.17	0.243	HK	3.27	0.217	HK	3.37	0.340	VHK	3.38	0.152	VHK	3.63	0.149	VHK	3.37	0.224	VHK

Knowledge on Food Waste of Employees in Selected Food Service Establishments in Northern Negros according to Forms of Business Establishment

Legends: SD=Standard Deviation, VI = Verbal Interpretation, VHK = Very High Knowledge, HK =High Knowledge.

Table 9 Knowledge of food waste of employees in selected food service establishments in Northern Negros according to Types of business establishments.

The Highest for Overall mean score in hotel establishments, got 3.63 (SD = 0.149, VI = VHK), while Food vendors got the lowest overall mean score of 3.17 (SD = 0.243, VI = HK). For Restaurant, “Minimizing food waste/ food waste a source of livelihood” got the highest mean score of 3.37 (SD = 0.224, VI = VHK), while “Food waste recycling” got the lowest mean score of 3.23 (SD = 0.282, VI = HK).

Likewise, regarding Food vendors, the results reveal that “Food waste recycling” got the highest mean score of 3.23 (SD = 0.256, VI = HK) while “Minimizing food waste/ food waste a source of livelihood” got the lowest mean of 3.12 (SD = 0.279, VI = HK).



Moreover, as to Cafeteria, the results reveal that “Positive benefits of food waste management” got the highest mean score of 3.40 with (SD = 0.254, VI = VHK) while “Minimizing food waste/ food waste a source of livelihood” got the lowest mean of 3.19 (SD= 0.294, VI = HK). Furthermore, as to Fast-food/Catering services, the results reveal that “Food Waste Recycling” got the highest mean score of 3.48 with (SD = 0.281, VI = VHK) while “Minimizing food waste/ food waste a source of livelihood” got the lowest mean of 3.27 (SD= 0.206, VI = VHK).

As to Hotel, the results reveal that “Positive benefits of food waste management” got the highest mean score of 3.74 with (SD = 0.211, VI = VHK) while “Food waste recycling” got the lowest mean of 3.45 (SD= 0.138, VI = VHK).

As to Canteen, the results reveal that “Food waste recycling” got the highestmean score of 3.46 with (SD = 0.345, VI = VHK) while “Minimizing food waste/ food waste a source of livelihood” got the lowest mean of 3.32 (SD= 0.456, VI = VHK).

It implies that employees in all areas on the area of food service establishments have a high awareness and certainly have a positive outlook on food waste management. The employees are doing their tasks as what the top management want them to do. Segregation is crucial in all food service establishments, especially hotels and restaurants they are doing this to minimize waste and cross-cutting purposes. This is a routine that is applied now and for more years to come.

Most dining establishments are knowledgeable of procedures for managing food waste, distributing extra food to personnel, or other creative methods that were shared base on the study of Bharucha (2018) and restaurant leftovers can be taken home to reduce food waste according to Hamerman et al. (2018). Along with cafeteria-service quality and situational characteristics, the goal to prevent food waste also predicts food waste behavior based on the study of Bell & Ulhas (2020) While on canteens simple measures can enhance behavior and boost the sustainability of food waste, but only with the help of well-educated personnel as noted by Pinto et al. (2018). “Positive benefits of food waste management” got the highest mean score of 3.58 with (SD = 0.356, VI = VHK) while “Food waste recycling” got the lowest mean of 3.09 (SD= 0.289, VI = HK).As to Bar and restaurant, the results reveal that “Food waste recycling” got the highest mean score of 3.48 with (SD = 0.281, VI = VHK) while “Minimizing food waste/ food waste a source of livelihood” got the lowest mean of 3.27 (SD= 0.206, VI = VHK).

Table 10 Attitude on Food Waste of Employees in Selected Food Service Establishment in Northern Negros when taken collectively

Dimensions	Mean	SD	VI
Thriftness and proper budget allotment	3.33	0.362	VHA
Attitude on food waste.	2.99	0.451	HA

Health consciousness	3.21	0.364	HA
Overall	3.18	0.286	HA

Legend: SD=Standard Deviation, VI=Verbal Interpretation, VHA = Very High Attitude, HA =High Attitude.

Table 10 illustrates the Attitude toward food waste of employees in the food service establishments of Northern Negros when taken collectively.

Out of 273 respondents in terms of the Attitude of employees to foodservice establishment of Northern Negros “thriftiness and proper budget allotment” got a mean score of 3.33 (SD = 0.362, VI = VHA) while “attitude on food waste” got the lowest mean score of 2.99 (SD = 0.451, VI = HA).

This implies that respondents may have a society that is deeply based on being conservative. Respondents might get used to respecting every cent, primarily if they work in a field like food service where profits are low. This implies that the same Attitude applies in the workplace.

It is part of the Filipino culture to strive hard and be conservative with money, based on the study of Malong & Salvation (2020). Using a virtue ethics point of view, it looks at how people act in ways that show they care about the world by reducing waste (Petrescu-Mag et al., 2019). A person's state of mind has a significant and good effect on their desire and actions, according to the study of Purwanto et al. (2023). It is necessary to change how people behave to reduce food waste in places significantly, according to a study by Neubig et al. (2020).

Table 11 Attitude on Food Waste of Employees in Selected Food Service Establishment in Northern Negros according to Age

Dimensions	Younger (18-32 yrs. old)			Older (33-47 yrs. old)		
	Mean	SD	VI	Mean	SD	VI
Thriftiness and proper budget allotment	3.42	0.350	VHA	3.12	0.301	HA
Attitude on food waste.	3.01	0.495	HA	2.94	0.318	HA
Health consciousness	3.23	0.368	HA	3.17	0.352	HA
Overall	3.22	0.303	HA	3.08	0.208	HA

Legend: SD=Standard Deviation, VI=Verbal Interpretation, VHA = Very High Attitude, HA =High Attitude.

Table 11 shows the Attitude on food waste of employees in selected food service establishments in Northern Negros according to age.

The study's results show that when it comes to age, younger people (18-32 years old) got the highest mean score of 3.22 (SD = 0.303, VI = HA), while older people (33-47 years old) got the lowest mean score of 3.08 (SD = 0.208, VI = HK).

Based on the age category of Younger (18-32 yrs. old), as to Attitude of employees on food waste management, it shown that "thriftiness and proper budget allotment" for the highest mean with 3.42 (SD = 0.350, VI = VHK) while "Attitude on food waste" display a lowest mean score of 3.01 (SD = 0.495, VI = HK). As to older (33 – 47 yrs. old) Attitude, the results display that "Health consciousness" got the highest mean score of 3.17 with (SD = 0.352, VI = HK) while "Attitude on food waste" got the same lowest mean score of 2.94 (SD = 0.318, VI = HA).

It implies that employees have a highly positive attitude toward food waste recycling. Older food service workers lead their teams by experience. Older people teach younger one's things like saving food in restaurants. It also implies that older people have a highly positive attitude toward food waste recycling because they are concerned with the health of their guests as well as themselves.

Compared to male respondents, female respondents are more likely to engage in environmentally conscious

behaviors, as noted by the study of Wut et al. (2021). The result of the study shows that the levels of positive attitudes exhibited by females were substantially more significant than those exhibited by males, as noted by Peng et al. (2020). As people age, women become more concerned about food waste's influence on social fairness and the family budget than males. Women also squander more food than males due to their food acquisition and preparation habits, even though the study revealed no difference in food waste. The study shows that food waste awareness programs should be tailored to each gender and age group, according to the study of Cantaragiu (2019).

Table 12 Attitude on Food Waste of Employees in Selected Food Service Establishment in Northern Negros according to Sex

Dimensions	Male			Female		
	Mean	SD	VI	Mean	SD	VI
Thriftness and proper budget allotment	3.31	0.329	SA	3.36	0.414	SA
Attitude on food waste.	2.96	0.502	A	3.04	0.340	A
Health consciousness	3.16	0.347	A	3.29	0.380	SA
Overall	3.15	0.289	A	3.23	0.274	A

Legend: SD=Standard Deviation, VI=Verbal Interpretation, SA = Slightly Attitude, A = Attitude.

Table 12 reveals the Attitude on food waste of employees in selected food service establishments in Northern Negros according to Sex. According to the 273 respondents, when in terms of the Attitude of employees in food service establishments in Northern Negros shows that when both sexes are concerned.

Female employees achieved the highest mean score of 3.23 (SD = 0.274, VI = HA), while males had the lowest mean score of 3.15 (SD = 0.289, VI = HA). For male employees, "thriftness and proper budget allotment" received the highest mean score of 3.31 (SD = 0.329, VI = VHA), while "Attitude on food waste" had the lowest mean score of 2.96 (SD = 0.502, VI = HA). Meanwhile, for female employees, the results show that "thriftness and proper budget allotment" received the highest mean score of 3.36 (SD = 0.414, VI = VHA), while "Attitude on food waste" had the lowest mean score of 3.04 (SD = 0.340, VI = HA). Regardless of gender, employees in the food service industry must be given proper training and orientation according to the establishment's policies and strict implementation. This indicates trust in terms of gender, although not all males and females are the same.

Compared to male respondents, female respondents are more likely to engage in environmentally conscious behaviors, as noted by the study of Wut et al. (2021). The study shows that the levels of positive attitudes exhibited by females were substantially more significant than those exhibited by males, as noted by Peng et al. (2020). As people age, women become more concerned about food waste's influence on social fairness and the family budget than males. Women also waste more food than males due to their food acquisition and preparation habits, even though the study revealed no difference in food waste. The study shows that food waste awareness programs should be tailored to each gender and age group, according to the study of Cantaragiu (2019).

In this study, academically educated, publicly employed, and young women had higher KAPs (knowledge, attitude, and practice) but lower disposal system satisfaction, according to Almasi et al. (2019).

Table 13 Attitude on Food Waste of Employees in Selected Food Service Establishment in Northern Negros according to Number of Years of Operation

Dimensions	Shorter (7 years and below)			Longer (8 years and above)		
	Mean	SD	VI	Mean	SD	VI
Thriftness and proper budget allotment	3.34	0.372	VHA	3.30	0.321	VHA
Attitude on food waste.	2.97	0.489	HA	3.04	0.268	HA
Health consciousness	3.22	0.384	HA	3.18	0.276	HA
Overall	3.18	0.308	HA	3.17	0.181	HA

Legend: SD=Standard Deviation, VI=Verbal Interpretation, VHA = Very High Attitude, HA =High Attitude.

Table 13 contributes the Attitude to food waste of employees in selected food service establishments in Northern Negros according to the number of years in operation.

Based on the results of the computation as to the Attitude to food waste of employees in selected food service establishments in Northern Negros in terms of the number of years of operations, Shorter years of operation (7 years and below) got the highest mean score of 3.18 (SD = 0.308, VI = HA) while longer years of operation (8 years and above) got the lowest mean score of 3.17 (SD = 0.181, VI = HA).

As number of years of operation was shorter (7 years and below), "thriftiness and proper budget allotment" got the highest mean score of 3.34 with (SD= 0.372, VI = VHA) while "Attitude on food waste" got the lowest mean score of 2.97 (SD = 0.489, VI = HA).

However, as to the number of years of operation longer (8 years and above), the results reveal that "thriftiness and proper budget allotment" got the same highest mean score of 3.30 (SD = 0.321, VI = VHA, I = VHA) while "Attitude on food waste" got the lowest mean of 3.04 (SD = 0.268, VI = HA).

This implies that newer businesses are under pressure to survive and prioritize immediate cost-cutting measures over long-term sustainability practices. They might need to be fully aware of food waste's environmental and social costs or the potential cost savings associated with minimizing it. Established businesses might have well-established routines and cost-cutting practices that may not prioritize food waste reduction, even if it could save money in the long run. Their focus might be on optimizing existing processes to reduce waste in areas like labor or utilities, neglecting the potential for food waste reduction.

Based on the study of Gładysz et al. (2020), newer firms may prioritize cost-cutting above sustainability to thrive. These companies may not realize the environmental and social consequences of food waste and the economic savings of reducing it. However, enterprises with established routines and cost-cutting habits may not prioritize food waste reduction, even if it may benefit them financially. They may neglect food waste reduction chances by optimizing labor or utility operations.

Regardless of the number of years in operation, Research by Chaudhary & Sharma, (2023) has shown that investing in waste reduction measures, like better inventory management and portion control, can result in significant cost savings.

As noted by Kör et al. (2022), In the context of food waste management, it is crucial to address challenges such as measuring and monitoring waste, assessing the costs and benefits of waste reduction, and understanding how different stages of the value chain and countries influence waste reduction efforts. According to Kattiyapornpong et al. (2023), Sustainable food waste management practices are essential as food waste significantly impacts the environment, society, and economy of hospitality and tourism businesses.

Table 14

Attitude on Food Waste of Employees in Selected Food Service Establishment in Northern Negros according to Tenure

Dimensions	Regular			Contractual			Part-time		
	Mean	SD	VI	Mean	SD	VI	Mean	SD	VI
Thriftiness and proper budget allotment	3.39	0.309	VHA	3.16	0.362	HA	3.37	0.430	VHA
Attitude on food waste.	2.93	0.542	HA	3.02	0.273	HA	3.09	0.329	HA
Health consciousness	3.18	0.367	HA	3.17	0.302	HA	3.33	0.410	VHA
Overall	3.17	0.305	HA	3.12	0.248	HA	3.26	0.260	HA

Legend: SD = Standard Deviation, VI = Verbal Interpretation, VHA = Very High Attitude, HA =High Attitude.

Table 14 reveals the Attitude toward food waste of employees in the food service establishments of Northern Negros according to tenacity.

The table of tenacity shows that Part-time employees got the highest mean score of 3.26 (SD = 0.260, VI = VHA) while Contractual employees got the lowest mean score of 3.12 (SD 0.248, VI = HA). When scores are taken as to Regular employees, "thriftiness and proper budget allotment" got the highest mean score of 3.39 with (SD = 0.309, VI = VHA) while "Attitude on food waste" got the lowest mean score of 2.93 (SD = 0.542, VI = HA).

Likewise, as to Contractual, the results reveal that "Health consciousness" got the highest mean score of 3.17 (SD = 0.302, VI = HA) while "Attitude on food waste" got the lowest mean of 3.02 (SD = 0.273, VI = HA).

Moreover, as to Part-time employees "thriftiness and proper budget allotment" got a highest mean score of 3.37 with (SD =.430, VI = VHA) while "Attitude on food waste" got the lowest mean score of 3.09 (SD = 0.329, VI = HA).

This implies that while health is a priority, food waste reduction might not be a

primary concern. Additionally, those with less responsibility for food purchasing or planning might be less invested in waste reduction.

The study's result implies that employees have a strong positive attitude toward food waste recycling regardless of tenure. Part-time employees excel in Attitude, which means these types of employees love their jobs and cannot afford to lose them.

Age, unemployment, and part-time jobs reduced food waste in both countries. In Denmark, food waste was higher in males and lower in households with four or more persons, according to a study by Grasso et al. (2019). Unfortunately, firms need more than adequate training, especially for part-time workers, according to a study by Jaworski et al. (2018).

Table 15 Attitude on Food Waste of Employees in Selected Food Service Establishment in Northern Negros according to Forms of Business Organization

Dimensions	Sole Proprietorship			Partnership			Corporation			Cooperative		
	Mean	SD	VI	Mean	SD	VI	Mean	SD	VI	Mean	SD	VI
Thriftiness and proper budget allotment	3.35	0.333	VHA	3.24	0.373	HA	3.52	0.406	VHA	3.28	0.432	VHA
Attitude on food waste.	2.95	0.520	HA	2.99	0.239	HA	3.08	0.473	HA	3.19	0.350	HA
Health consciousness	3.18	0.354	HA	3.10	0.278	HA	3.50	0.347	VHA	3.58	0.400	VHA
Overall	3.16	0.297	HA	3.11	0.207	HA	3.36	0.344	VHA	3.35	0.242	VHA

Legend: SD = Standard Deviation, VI = Verbal Interpretation, VHA = Very High Attitude, HA =High Attitude.

As shown in Table 15, the attitudes on food waste of employees in selected food service establishments in Northern Negros, according to the form of business organization. Based on the study's results among the forms of business organization, Corporation got the highest mean score of 3.36 (SD = 0.344, VI = VHA), while Partnership got the lowest mean score of 3.11 (SD = 0.207, VI = HA).

Regarding sole proprietorship, "thriftiness and proper budget allotment" got the highest mean score of 3.16 (SD = 0.297, VI = HA), while "attitude on food waste" received the lowest mean score of 2.95 (SD = 0.520, VI = HA).

Likewise, in partnerships, the results reveal that "thriftiness and proper budget allotment" got the highest mean score of 3.24 (SD = 0.373, VI = HA), while "attitude on food waste" got the lowest mean of 3.04 (SD = 0.373, VI = HA). For corporations, the results show that "thriftiness and proper budget allotment" got the highest mean score of 3.52 (SD = 0.406, VI = VHA), while "attitude on food waste" got the lowest mean of 3.06 (SD = 0.473, VI = HA).

This implies that corporations have the highest positive attitude towards food waste due to specific rules and obligations in the community and to the government. It also implies that the establishment's rules should be followed to avoid conflict. Therefore, the top management is critical to implementing these rules and regulations.

Corporations seldom monitor plate waste since they do not see it affecting their bottom line or contributing to their service obligations, according to Derqui et al. (2018). Female proprietors of restaurants are less aware than male ones, based on a study by Lang et al. (2020). It is essential to examine if restaurant ownership (corporate, independent, or franchise) or green policy affects green practices and behavior, according to Baloglu et al. (2022). The beliefs and rules of managers can have a significant effect on how the extra food can be used, according to Filimonau et al. (2020).

Table 16

Attitude on Food Waste of Employees in Selected Food Service Establishment in Northern Negros according to Types of Business Establishment

Dimensions	Restaurant			Food Vendors			Cafeteria			Fast-food Catering Services			Bar and Restaurant			Hotel			Canteen		
	Mean	SD	VI	Mean	SD	VI	Mean	SD	VI	Mean	SD	VI	Mean	SD	VI	Mean	SD	VI	Mean	SD	VI
Thriftiness and proper budget allotment	3.35	0.273	SA	3.16	0.318	A	3.53	0.316	A	3.53	0.414	SA	3.55	0.246	VHA	3.79	0.266	VHA	3.33	0.450	VHA
Attitude on food waste	3.19	0.764	A	2.88	0.374	A	2.90	0.340	A	3.12	0.458	A	2.99	0.223	HA	3.33	0.476	VHA	3.18	0.329	HA
Health consciousness	3.39	0.298	SA	3.04	0.307	A	3.14	0.260	A	3.47	0.315	SA	3.25	0.310	HA	3.76	0.266	VHA	3.56	0.396	VHA
Overall	3.31	0.337	SA	3.02	0.229	A	3.19	0.221	A	3.37	0.316	SA	3.27	0.155	VHA	3.63	0.296	VHA	3.36	0.238	VHA

Legend: SD = Standard Deviation, VI = Verbal Interpretation, VHBI = Very High Behavioral Intention, HBI = High Behavioral Intention

As shown in Table 16, the attitude towards food waste among employees in selected food service establishments in Northern Negros varies according to the form of business establishment. Hotels had the highest mean score of 3.63 (SD = 0.296, VI = VHA), while food consigners had the lowest mean score of 3.02 (SD = 0.299, VI = HA). For restaurant establishments, "health consciousness" got the highest mean score of 3.39 (SD = 0.337, VI = VHA), while "attitude on food waste" got the lowest mean score of 3.19 (SD = 0.764, VI = HA).

Similarly, for food vendors, the results reveal that "thriftiness and proper budget allotment" got the highest mean score of 3.16 (SD = 0.318, VI = HA), while "attitude on food waste" got the lowest mean of 2.88 (SD = 0.374, VI = HA).

For bars and restaurants, the results show that "thriftiness and proper budget allotment" got the highest mean score of 3.55 (SD = 0.246, VI = VHA), while "attitude on food waste" got the lowest mean of 2.99 (SD = 0.223, VI = HA).

For hotels, the results show that "thriftiness and proper budget allotment" got the highest mean score of 3.79 (SD = 0.266, VI = VHA), while "attitude on food waste" got the lowest mean of 3.33 (SD = 0.476, VI = VHA).

As to Canteen, the results reveal that "Health Consciousness" got the highest mean score of 3.56 with (sd. = 0.396, I = VHA) while "Attitude on food waste" got the lowest mean of 3.18 (SD= 0.329, VI = HA). This emphasizes a strong focus on cost control across all food service sectors (Restaurant, food vendor, cafeteria). Furthermore, it implies that while cost-effectiveness is a top priority, food waste reduction might not be getting the same level of attention. As noted by the study of (Meier et al., 2021), The emphasis on cost control in various food service sectors, with a potential lack of equal attention to food waste reduction, is supported by several studies highlight the importance of reducing food waste in different sectors, including food service, to address environmental impacts.

The study of Leverenz et al. (2021) discusses European legal requirements for monitoring food waste levels, indicating an increasing focus on this issue, pointing out that a significant portion of food waste in the food service sector is avoidable, presenting an opportunity for reduction efforts. Moreover, Deksne Litavniece (2022) stresses the relevance of reducing, recycling, and reusing food waste in catering practices to transition towards a circular economy. Based on the study of Filimonau et al. (2020) discusses the importance of sustainable food practices in reducing food wastage within food service sectors. These references underscore the significance of addressing food waste alongside cost control measures in the food service industry.

Table 17 Behavioral Intention on Food Waste of Employees in Selected Food Service Establishment in Northern Negros when taken collectively

Dimensions	Mean	SD	VI
Awareness of consequences	3.33	0.348	VHBI
Ascription of responsibility	2.66	0.318	HBI
Personal norm	2.68	0.328	HBI
Filial piety	2.80	0.352	HBI
Intention to reduce food waste Sub Ratings	2.82	0.348	HBI
Overall	3.29	0.294	HBI

Legend: SD = Standard Deviation, VI = Verbal Interpretation, VHBI = Very High Behavioral Intention, HBI =High Behavioral Intention

Table 17 shows the Behavioral Intention on food waste of employees in selected food service establishments in Northern Negros when taken collectively.

The result shows that "Awareness of consequences" got the highest mean with 3.33 (SD=348, VI=VHBI) while" Ascription of responsibility" got the lowest mean of 2.66 (SD=0.318, VI=HBI)

Employees generally have a high behavioral intention and awareness of the potential negative impacts of food waste. This is a positive sign, suggesting that educational efforts might be working. However, employees might not feel a strong personal sense of responsibility for preventing food waste. Employees might understand the consequences of food waste but lack a clear understanding of how their actions can make a difference. Also, Employees might not feel empowered to make decisions or suggest changes related to food waste management.

According to the study Elford et al. (2023), this explores how different stakeholders, including employees, perceive and handle food waste within various settings. Moreover, it underscores the significance of awareness campaigns in reducing food waste, indicating that raising awareness can lead to tangible reductions in wastage.

As highlighted by Principato et al. (2023) stresses the importance of constant monitoring and management to prevent overproduction and subsequent waste. Based on the study of Alcorn et al. (2021), This aligns with the idea that employees may need more explicit guidelines and training to engage in food waste reduction efforts actively. Also, the study of Ma et al. (2024) emphasizes the role of ethical attitudes and management practices in influencing employee behavior toward food waste reduction.

Table 18 Behavioral Intention on Food Waste of Employees in Selected Food Service Establishment in Northern Negros according to Age

Dimensions	Younger (18-32 yrs. Old)			Older (33-47 yrs. Old)		
	Mean	SD	VI	Mean	SD	VI
Awareness of consequences	3.37	0.353	VHBI	3.21	0.309	VHBI
Ascription of responsibility	2.69	0.323	HBI	2.59	0.297	HBI
Personal norm	2.71	0.323	HBI	2.60	0.329	HBI
Filial piety	2.86	0.345	HBI	2.67	0.338	HBI
Intention to reduce food waste Sub Ratings	2.88	0.333	HBI	2.66	0.332	HBI
Overall	3.34	0.291	VHBI	3.16	0.263	HBI

Legend: SD = Standard Deviation, VI = Verbal Interpretation, VHBI = Very High Behavioral Intention, HBI =High Behavioral Intention

As shown on table 18 shows the Behavioral intention on food waste of employees in selected food service establishments in Northern Negros according to Age.

In terms of the Behavioral Intention of employees concerned in selected food service establishments in Northern Negros when both ages are considered.

The younger group got the highest mean score of 3.34 (SD = 0.291, VI = VHBI), while the older group got the lowest mean score of 3.21 (SD = 0.309, VI = VHBI). As younger (18-32 yrs. Old), “Awareness of consequences” got the highest mean score of 3.37 with (SD = 0.353, VI = VHBI), while “Ascription of responsibility” got the lowest mean score of 2.69 (SD = 0.323, VI = HBI).

Likewise, for older people (33-47 years old), the results reveal that “Awareness of consequences” got the highest mean score of 3.21 (SD = 0.309, VI = HBI) while “Ascription of responsibility” got the lowest mean of 2.59 (SD = 0.297, VI = HBI).

This suggests a greater willingness among younger employees to take action to reduce food waste compared to older employees. It also indicates a strong awareness of the negative impacts of food waste. At the same time, this suggests a disconnect between understanding the consequences and feeling personally responsible for acting.

This study by Attiq et al. (2021) aligns with research indicating that younger consumers are more likely to engage in food waste reduction behaviors than older counterparts. Similarly, based on the study of Marek-Andrzejewska & Wielicka-Regulska (2021), the youth have a positive personal attitude towards the intention to avoid food waste. As indicated in the research by Filimonau et al. (2020), young people tend to waste more food than older individuals, emphasizing the importance of instilling environmental and social awareness at a young age to foster a sustainable society.

Additionally, according to the study by Phooi et al. (2022), results have shown that food waste is linked to social, economic, and environmental impacts, highlighting the need for increased awareness and education on the consequences of wasteful practices that established habits among older individuals may influence their recycling practices compared to younger generations.

Table 19 Behavioral Intention on Food Waste of Employees in Selected Food Service Establishment in Northern Negros according to Sex

Dimensions	Male			Female		
	Mean	SD	VI	Mean	SD	VI
Awareness of consequences	3.28	0.337	VHBI	3.40	0.356	VHBI
Ascription of responsibility	2.63	0.293	HBI	2.72	0.353	HBI
Personal norm	2.67	0.299	HBI	2.70	0.374	HBI

Filial piety	2.79	0.333	HBI	2.83	0.385	HBI
Intention to reduce food waste	2.82	0.331	HBI	2.82	0.376	HBI
Overall	3.27	0.263	HBI	3.33	0.339	HBI

Legend: SD = Standard Deviation, VI = Verbal Interpretation, VHBI = Very High Behavioral Intention, HBI = High Behavioral Intention

Table 19 investigates successfully out of 273 respondents when in terms of the Behavioral Intention of employees in food service establishments in Northern Negros according to sex. The Female employees got a mean score of 3.33 (SD = 0.339, VI = VHBI), while males got the lowest mean score of 3.27 (SD= 0.263, VI = VHBI).

As for males, "Awareness of consequences" got the highest mean score of 3.28 with (SD = 0.337, VI = VHBI) while "Ascription of responsibility" got the lowest mean score of 2.63 (SD = 0.2393, VI = HBI). Likewise, as for Females, the results reveal that "Awareness of consequences" got the highest mean score of 3.40 with (SD = 0.356, VI = VHBI) while "Personal norm" got the lowest mean of 2.70 (SD= 0.374, VI = HBI).

This suggests a potential disconnect between understanding the consequences and feeling personally responsible for acting. While females might understand the consequences, their internal sense of responsibility for reducing food waste might be lower. Men might be seen as less involved in household tasks like food management, leading to a lower sense of personal responsibility in a food service setting.

A study by Chuah and Fou (2019), no significant gender differences in young individuals' involvement in reducing food waste, supporting the notion that gender may not influence the sense of responsibility in addressing food waste.

Regardless of sex, the study of Ang et al. (2021) highlights the role of personal and subjective norms in reducing food waste, which ties into the concept of feeling personally responsible. Moreover, the study Brizi & Biraglia (2021) on stockpiling behavior during the COVID-19 pandemic suggests that individuals influenced by factors like gender and cognitive closure may engage in behaviors that lead to food waste. This aligns with the idea that men, possibly less involved in household tasks like food management, may exhibit lower personal responsibility in food service settings, as mentioned in the initial statement.

Table 20 Behavioral Intention on Food Waste of Employees in Selected Food Service Establishment in Northern Negros according to Number of Years of Operation

Dimensions	Shorter (7 years and below)			Longer (8 years and above)		
	Mean	SD	VI	Mean	SD	VI
Awareness of consequences	3.29	0.345	VHBI	3.44	0.338	VHBI
Ascription of responsibility	3.29	0.345	HBI	3.44	0.338	VHBI
Personal Norm	2.68	0.334	HBI	2.59	0.239	HBI
Filial Piety	2.70	0.340	HBI	2.60	0.271	HBI
Intention to reduce food waste	2.81	0.363	HBI	2.78	0.312	HBI
Overall	3.29	0.311	VHBI	3.29	0.223	VHBI

Legend: SD = Standard Deviation, VI = Verbal Interpretation, VHBI = Very High Behavioral Intention, HBI = High Behavioral Intention

As table 20 displays the Behavioral Intention on food waste of employees in selected food service establishments in Northern Negros according to the Number of years of operation.

The results of the study show that both shorter years of operation (7 years and below) and longer years of operation (8 years and above) got the same mean score of

3.29 (SD = 0.311 and 0.223, VI = VHBI). For shorter years of operation (7 years and below), "Awareness of consequences and ascription of responsibility" got the highest mean score of 3.29 (SD = 0.345, VI = VHBI). In contrast, "Personal norm" got the lowest mean score of 2.68 (SD = 0.334, VI = HBI). Likewise, for longer years of operation (8 years and above), the results reveal that "Awareness of consequences and ascription of responsibility" got the highest mean score of 3.44 (SD = 0.338, VI = VHBI). In contrast, "Personal norm" got the lowest mean score of 2.59 (SD = 0.239, VI = HBI).

This suggests that employees in both categories generally understand the negative impacts of food waste and feel a sense of responsibility to address it. This also emphasizes how individual actions can make a difference and connect to personal values like environmental stewardship or community responsibility. Educational programs should go beyond consequences and responsibility to explore the personal connection to food waste reduction. According to Bilska et al. (2022), new businesses that want to improve how they handle food waste can learn a lot from following the tried-and-true best practices of companies with more experience.

Additionally, encouraging new businesses to work together and share their knowledge with more seasoned ones can make their efforts to reduce food waste even more effective. By taking these proactive steps, new food service businesses can overcome their initial problems and become leaders in environmentally friendly ways to deal with food waste. Based on the interviewees' answers and theories, some ideas were made for improving the hotel's overall food waste management. These included implementing a system to measure food waste, regularly reviewing the food plan, raising awareness among employees and customers, and training staff in smart food waste management, based on the study of Irwansyah et al. (2022).

According to Alcorn et al. (2021), employee training is crucial in reducing food waste, which can contribute to decreased waste generation in food service establishments. Miroso et al. (2020) highlight the effectiveness of information campaigns in reducing food waste, emphasizing the role of educational programs in addressing the issue.

Table 21

Behavioral Intention on Food Waste of Employees in Selected Food Service Establishment in Northern Negros according to Tenure

Dimensions	Regular			Contractual			Part-time		
	Mean	SD	VI	Mean	SD	VI	Mean	SD	VI
Awareness of consequences	3.35	0.357	VHBI	3.24	0.309	HBI	3.38	0.354	VHBI
Ascription of responsibility	2.70	0.317	HBI	2.56	0.316	HBI	2.69	0.303	HBI
Personal Norm	3.34	0.515	VHBI	3.13	0.608	HBI	3.28	0.568	VHBI
Filial piety	3.27	0.502	VHBI	3.01	0.643	HBI	3.30	0.540	VHBI
Intention to reduce food waste	3.40	0.567	VHBI	3.14	0.616	HBI	3.30	0.463	VHBI
Overall	3.18	0.570	HBI	3.14	0.568	HBI	3.26	0.524	VHBI

Legend: SD = Standard Deviation, VI = Verbal Interpretation, VHBI = Very High Behavioral Intention, HBI = High Behavioral Intention

As presented in Table 21, the behavioral intention regarding food waste among employees in selected food service establishments in Northern Negros is categorized by tenure. Based on the tenure category, part-time employees had the highest mean score of 3.26 (SD = 0.524, VI = VHBI), while regular employees had the lowest mean score of 3.18 (SD = 0.570, VI = HBI).

For regular employees, "Intention to reduce food waste" had the highest mean score of 3.40 (SD = 0.567, VI = VHBI), while "Ascription of responsibility" had the lowest mean score of 2.70 (SD = 0.317, VI = HBI).

For contractual employees, "Awareness of consequences" had the highest mean score of 3.24 (SD = 0.309, VI = HBI), while "Ascription of responsibility" had the lowest mean score of 2.56 (SD = 0.316, VI = HBI).

For part-time employees, "Awareness of consequences" had the highest mean score of 3.38 (SD = 0.354, VI = VHBI), while "Ascription of responsibility" had the lowest mean score of 2.69 (SD = 0.303, VI = HBI).

This suggests a general willingness and understanding of the importance of food waste reduction across all employee categories. However, it also suggests a consistent pattern where employees might be willing to reduce waste and understand the consequences but feel a lower sense of personal responsibility to act.

Employees across all categories, including part-time, regular, and contractual, demonstrate a general willingness and understanding of the importance of reducing food waste. Based on the study of Alcorn et al. (2021), this willingness and comprehension suggest a consistent trend where employees acknowledge the significance of waste reduction but may feel a diminished sense of personal responsibility to address the issue actively. The lack of proper training on tracking, reducing, and managing food waste can contribute to increased waste generation. According to the study of Chengqin et al. (2024), environmental attitudes, beliefs, concerns about the future, and an individual's sense of responsibility play crucial roles in shaping decisions related to food waste. Moreover, based on the study of Ogiemwonyi et al. (2023), employees' willingness to engage in responsible behaviors supporting environmental improvement can be seen as pro-environmental behavior (PEB).

Table 22 Behavioral Intention on food Waste of Employees in Selected Food Service Establishment in Northern Negros according to Forms of Business Organization

Dimensions	Sole Proprietorship			Partnership			Corporation			Cooperative		
	Mean	SD	VI	Mean	SD	VI	Mean	SD	VI	Mean	SD	VI
Awareness of consequences	3.32	0.352	VHBI	3.29	0.324	VHBI	3.48	0.343	SA	3.32	0.389	SA
Ascription of responsibility	2.69	0.335	HBI	2.52	0.230	HBI	2.78	0.354	HBI	2.81	0.250	HBI
Personal norm	2.70	0.321	HBI	2.54	0.279	HBI	2.90	0.335	HBI	2.83	0.342	HBI
Filial piety	2.84	0.348	HBI	2.68	0.338	HBI	2.90	0.381	HBI	2.90	0.308	HBI
Intention to reduce food waste	2.83	0.325	HBI	2.75	0.391	HBI	2.96	0.385	HBI	2.78	0.279	HBI
Overall	3.31	0.285	VHBI	3.17	0.273	HBI	3.47	0.346	VHBI	3.38	0.211	VHBI

Legend: SD = Standard Deviation, VI = Verbal Interpretation, VHBI = Very High Behavioral Intention, HBI =High Behavioral Intention

Table 22 shows the behavioral intention on food waste of employees in selected food service establishments in Northern Negros, collectively analyzed according to form of business organization. The results indicate that "Awareness of consequences" received the highest mean score of 3.32 (SD = 0.352, VI = VHBI), while "Ascription of responsibility" obtained the lowest mean score of 2.69 (SD = 0.335, VI = HBI). "Thriftness and proper budget allotment" achieved the highest mean score of 3.52 (SD = 0.406, VI = VHA), whereas "Attitude on food waste" garnered the lowest mean score of 3.06 (SD = 0.473, VI = HA).

It implies that regardless of their employment status, employees tend to engage in behaviors they find comfortable, such as reducing food waste, which they consider fulfilling as food service employees. It suggests their commitment to sustainability practices, including deepening their understanding and intention to reduce waste at all costs.

As part of their training, employees participate in seminars and other forms of sustainable development education to deepen their understanding and commitment to

Agenda 2030's Sustainable Development Goals (SDGs), as noted in the study by Feijoo & Moreira (2020). According to Baloglu et al. (2022), restaurants operated by corporations are more likely to have an official sustainability strategy, benefiting from organized methods and more significant resources. The organizational

culture significantly influences the performance of an organization, according to Abadi et al. (2021), highlighting the impact of managers' beliefs and policies on food waste management (Filimonau et al., 2020)

Table 23

Behavioral Intention on Food Waste of Employees in Selected Foodservice Establishment in Northern Negros according to Forms of Business Establishment

Dimension	Restaurant			Food Vendors			Cafeteria			Fast-food Services			Catering			Bar and Restaurant			Hotel			Canteen		
	Mean	SD	VI	Mean	SD	VI	Mean	SD	VI	Mean	SD	VI	Mean	SD	VI	Mean	SD	VI	Mean	SD	VI	Mean	SD	VI
Awareness of consequences	3.51	0.311	VHBI	3.13	0.258	HBI	3.40	0.325	VHBI	3.50	0.390	VHBI	3.58	0.275	VHBI	3.50	0.276	VHBI	3.35	0.394	VHBI			
Ascription of responsibility	2.69	0.338	HBI	2.58	0.299	HBI	2.64	0.313	HBI	2.80	0.419	HBI	2.72	0.288	HBI	3.00	0.315	HBI	2.79	0.253	HBI			
Personal norm	2.72	0.245	HBI	2.59	0.314	HBI	2.54	0.192	HBI	2.93	0.407	HBI	2.78	0.345	HBI	2.97	0.323	HBI	2.85	0.344	HBI			
Filial piety	2.84	0.314	HBI	2.63	0.321	HBI	2.84	0.334	HBI	3.08	0.310	HBI	3.08	0.219	HBI	2.92	0.344	HBI	2.92	0.326	HBI			
Intention to reduce food waste	2.97	0.341	HBI	2.66	0.303	HBI	2.98	0.317	HBI	3.02	0.385	HBI	2.94	0.283	HBI	3.14	0.339	HBI	2.80	0.338	HBI			
Overall	3.39	0.277	VHBI	3.13	0.258	HBI	3.32	0.214	VHBI	3.54	0.354	VHBI	3.48	0.156	VHBI	3.61	0.291	VHBI	3.40	0.232	VHBI			

Legend: VHBI = Very High Behavioral Intention, HBI = High Behavioral Intention

Table 23, comprising 273 respondents, explores the behavioral intentions of employees in selected food service establishments of Northern Negros across various forms of business organizations. The results reveal that hotels attained the highest mean score of 3.61 (SD = 0.291, VI = VHBI), while food consigners recorded the lowest mean score of 3.13 (SD = 0.258, VI = HBI). Specifically:

Restaurants: "Awareness of consequences" received the highest mean score of 3.51 (SD = 0.311, VI = VHBI), whereas "Ascription of responsibility" obtained the lowest mean score of 2.69 (SD = 0.338, VI = HBI).

Food Vendors: "Awareness of consequences" achieved the highest mean score of 3.13 (SD = 0.258, VI = HBI), while "Ascription of responsibility" received the lowest mean score of 2.58 (SD = 0.299, VI = HBI).

Cafeterias: "Awareness of consequences" garnered the highest mean score of 3.40 (SD = 0.325, VI = VHBI), with "Personal norm" recording the lowest mean score of 2.54 (SD = 0.192, VI = HBI).

Fast-food Catering: "Awareness of consequences" achieved the highest mean score of 3.50 (SD = 0.390, VI = VHBI), while "Ascription of responsibility" received the lowest mean score of 2.80 (SD = 0.419, VI = HBI).

Bar and Restaurant: "Awareness of consequences" obtained the highest mean score of 3.58 (SD = 0.275, VI = VHBI), with "Ascription of responsibility" recording the lowest mean score of 2.72 (SD = 0.288, VI = HBI).

Hotel: "Awareness of consequences" achieved the highest mean score of 3.50 (SD = 0.276, VI = VHBI), while "Filial Piety" received the lowest mean score of 2.92 (SD = 0.344, VI = HBI).

Canteen: "Awareness of consequences" garnered the highest mean score of 3.35 (SD = 0.394, VI = VHBI), with "Ascription of responsibility" recording the lowest mean score of 2.79 (SD = 0.253, VI = HBI).

The data indicate a consensus among individuals in various corporate establishments on the obligation to decrease food waste. Nevertheless, there are discrepancies in the magnitude and concentration of this

responsibility among various categories of food businesses. Restaurants and hotels exhibit a notable level of responsibility in reducing food waste, as seen by their high ratings for personal accountability. Notably, the research by Malefors et al. (2019) has shown that restaurants and hotels demonstrate a heightened commitment to minimizing food waste, as evidenced by their strong emphasis on personal accountability.

Studies by Filimonau et al. (2019) emphasize the significant role of the hospitality sector, including establishments like restaurants and hotels, in addressing food waste. It has been highlighted that targeted governmental support is crucial in enhancing the effective management of food waste in restaurants. Additionally, according to the study Camilleri (2021), initiatives within catering businesses, such as implementing preventative measures and recycling practices, are essential in reducing food loss and waste generation.

As noted in the study Chu (2019), Efforts to categorize and separate food waste based on its sources and types have been recognized as effective strategies to enhance consistency in food waste management and recycling success.

Table 24 Difference in Knowledge, Attitude and Behavioral Intention on Food Waste of Employees in Selected Food Service Establishment in Northern Negros according to Age

Dimensions	Computed t-value	Significance @ 0.05 level	Status of Hypothesis
Knowledge			
Food waste recycling	0.184	Not Significant	Accepted
Positive Benefits of Food Waste Management	0.000	Significant	Rejected
Minimizing food waste/food waste as a source of livelihood	0.003	Significant	Rejected
Total	0.000	Significant	Rejected
Attitude			
Thriftiness and proper budget allotment	0.000	Significant	Rejected
Attitude on food waste.	0.256	Not Significant	Accepted
Health consciousness	0.284	Not Significant	Accepted
Total	0.000	Significant	Rejected
Behavioral Intention			
Awareness of consequence	0.001	Significant	Rejected
Ascription of responsibility	0.015	Significant	Rejected
Personal Norm	0.012	Significant	Rejected
Filial Piety	0.000	Significant	Rejected
Intention to reduce food waste	0.000	Significant	Rejected
Total	0.000	Significant	Rejected

As shown in Table 24, significant differences in knowledge, attitude, and behavioral intention regarding food waste were observed among employees in selected food service establishments in Northern Negros according to age.

The significant differences in age regarding knowledge of food waste management, positive benefits, and minimizing food waste, with t-values of 0.000 and 0.003 individually and 0.000 collectively, led to the rejection of the hypothesis. However, for food waste recycling, the t-value of 0.184 exceeds the significance level of 0.05, accepting the hypothesis. Similarly, significant differences in attitude towards food waste management across age groups—thriftiness, proper budget allotment, attitude on food waste, and health consciousness—with t-values of 0.000, 0.000, 0.256, and 0.284 respectively, reject the hypothesis for some dimensions but accept it for others. Likewise, in behavioral intention indicators such as awareness of consequences, ascription of responsibility, personal norm, filial piety, and intention to reduce food waste, with t-values of 0.001, 0.015, 0.012, 0.000, and 0.000 individually and 0.000 collectively, the hypothesis is rejected due to significant differences among selected food service establishments in Northern Negros.

The study's results imply that respondents were knowledgeable about food waste, especially the positive benefits of food waste management and minimizing food waste as a source of livelihood. Perhaps reasons for leaving food on plates include dislike for the foods, a full stomach, dissatisfaction with taste, or unfamiliarity with herbs and spices included in the dish.

The results show subtle differences in how various age groups and attitudes within San Carlos City's food service establishments perceive and handle food waste. The study suggests the need for focused interventions and educational campaigns tailored to specific age demographics and attitude profiles, given the significant differences in knowledge and attitudes regarding food waste management across age brackets and specific aspects of attitudes such as thriftiness and health consciousness. Furthermore, notable variations in behavioral intentions highlight the importance of comprehensive measures to promote responsible food waste behaviors across all dimensions, including personal norms, goals to reduce waste, and understanding of repercussions. These findings demonstrate how targeted educational campaigns and behavior modification programs can enhance food waste management practices, improving efficiency and sustainability in the food service industry.

The study of demographic characteristics revealed a significant relationship between occupation and knowledge ($p < 0.05$), where employees and unemployed individuals had the highest and lowest knowledge, respectively, consistent with the results of the study by Banga (2011). Overall, individuals with a good level of knowledge and attitude did not demonstrate satisfactory practices, possibly due to business priorities and limited opportunities to focus on recycling, as well as the absence of a comprehensive and suitable recycling plan by the municipality, as indicated by the study of Filimonau et al. (2020).

While programs like The Stop Waste Initiative exist in the area—a public agency that connects and supports companies and institutions to reduce costs—none of the consulted restaurants were aware of it (Stop waste, 2016). This lack of knowledge could be addressed by increasing communication among stakeholders (such as the City of Berkeley and neighboring businesses), restaurateurs, and policymakers, which would likely lead to more information sharing on this issue. This also underscores the need for further campaigns emphasizing educational actions directed at businesses and consumers, as suggested by the study of Sakaguchi et al. (2018).

Table 25 Difference in Knowledge, Attitude and Behavioral Intention on Food Waste of Employees in Selected Food Service Establishment in Northern Negros according to Sex

Dimensions	Computed t-value	Significance @ 0.05 level	Status of Hypothesis
Knowledge			
Food waste recycling	0.021	Significant	Rejected
Positive Benefits of Food Waste Management	0.002	Significant	Rejected
Minimizing food waste/food waste as a source of livelihood	0.117	Not Significant	Rejected
Total	0.001	Significant	Rejected
Attitude			
Thriftiness and proper budget allotment	0.317	Not Significant	Accepted
Attitude on food waste.	0.151	Not Significant	Accepted
Health consciousness	0.006	Significant	Rejected
Total	0.020	Significant	Rejected
Behavioral Intention			
Awareness of consequence	0.009	Significant	Rejected
Ascription of responsibility	0.018	Significant	Rejected
Personal Norm	0.347	Not Significant	Accepted
Filial Piety	0.318	Not Significant	Accepted
Intention to reduce food waste	0.879	Not Significant	Accepted
Total	0.066	Not Significant	Rejected

As for the significant difference in knowledge of food waste management between sexes, food waste recycling, and the positive benefits of food waste management, there is a significant difference when taken together. The computed t-values are 0.021, 0.002, and 0.001 respectively. Therefore, the hypothesis status is rejected. Moreover, "Minimizing food waste/food waste as a source of livelihood" achieved a computed t-value of 0.117, more significant than the significance level of 0.05, thus accepting the hypothesis status.

The study's results imply that the respondents have knowledge of food waste management, especially in terms of food waste recycling, and positive attitudes towards food waste management. This indicates that respondents understand the pros and cons of food waste and their responsibilities to nature.

Furthermore, regarding attitudes toward food waste management, "Attitude on food waste" and "Health consciousness" significantly differ. The computed t-values are 0.006 and 0.020, respectively, lower than the significance level. Therefore, the hypothesis status is rejected. Additionally, "Thriftness and proper budget allotment" and, when taken together, achieved computed t-values of 0.317 and 0.151, respectively, which are greater than the significance level of 0.05, thus accepting the hypothesis status.

The respondents' key factors include the right attitude towards food waste and health consciousness. This shows that in addition to their knowledge of food waste management, they also understand the consequences of wasting food. Most importantly, they recognize the value of the money spent on food.

Lastly, regarding Behavioral Intention, "Awareness of consequences" and "Ascription of responsibility" show that the computed t-value is lower than the significance level of 0.05, making the hypothesis significant. Therefore, the hypothesis status is rejected. Meanwhile, in terms of Personal Norm, Filial Piety, and Intention to reduce food waste, and when taken together, the results imply that there is no significant difference in food waste in selected food service establishments in San Carlos City, with computed t-values of 0.347, 0.318, 0.879, and 0.066 respectively, when taken together more significant than the significance level of 0.05. Therefore, the hypothesis status is accepted.

Regarding behavioral intention, respondents needed to understand the consequences and responsibilities of food waste management fully. They only understood that they must consume all their food according to their needs. Some respondents may have reasons why they leave some food behind. Only when they experience scarcity will they realize the importance of every food they purchase.

The study of demographic characteristics revealed a significant relationship between occupation and knowledge ($p < 0.05$), where employees had the highest and unemployed individuals had the lowest knowledge, respectively, which is consistent with the results of the study by Banga (2011). In general, people with a good level of knowledge and attitude did not demonstrate satisfactory practices, possibly due to business demands on employees and limited opportunities for recycling, as well as the lack of a comprehensive and appropriate recycling plan by the municipality, as noted in the study by Filimonau et al. (2020).

Meanwhile, gender has a limited impact, only affecting the probability of wasting "5% or less" of purchased food. It is noteworthy that more than half of the respondents reported wasting "5% or less" of their food, while less than 1% reported wasting "50% or more," according to Grainger et al. (2018).

Based on the findings, this study differs in several key aspects from those of Secondi et al. (2015), who used a structured binomial regression approach to assess another subset of variables from the same dataset. These authors identified differences in food waste behavior between people living in towns or cities versus those in rural areas, with the former wasting more food. In contrast, this study finds that the place of residence has minimal effect on the level of self-reported food waste. Secondi et al. (2015) found the respondent's gender statistically significant, suggesting that women waste less food than men, a finding not strongly supported by this study. Moreover, using a multinomial approach further prevents the overestimation of these variables' differences, as Grainger et al. (2018) noted.

Table 26 Significant Difference in Knowledge, Attitude and Behavioral Intention on Food Waste of Employees in Selected Food Service Establishment in Northern Negros according to Number of Years of Operations

Dimensions	Computed t-value	Significance @ 0.05 level	Status of Hypothesis
KNOWLEDGE			
Food waste recycling	0.006	Significant	Rejected
Positive Benefits of Food Waste Management	0.030	Significant	Rejected
Minimizing food waste/food waste as a source of livelihood	0.599	Not Significant	Accepted
Total	0.038	Significant	Rejected
ATTITUDE			
Thriftiness and proper budget allotment	0.463	Not Significant	Accepted
Attitude on food waste.	0.320	Not Significant	Accepted
Health consciousness	0.411	Not Significant	Accepted
Total	0.908	Not Significant	Accepted
BEHAVIORAL INTENTION			
Awareness of consequence	0.005	Significant	Rejected
Ascription of responsibility	0.048	Significant	Rejected
Personal Norm	0.046	Significant	Rejected
Filial Piety	0.629	Not Significant	Accepted
Intention to reduce food waste	0.312	Not Significant	Accepted
Total	0.938	Not Significant	Accepted

Table 26 demonstrates significant differences in knowledge, attitude, and behavioral intention on food waste among employees in selected food service establishments in Northern Negros according to years of operation.

The dimensions of "Number of Years of Operations," "Food Waste Recycling," and "Positive Benefits of Food Waste Management" reveal significant differences with t-values of 0.006, 0.030, and 0.038, respectively, regarding the knowledge of food waste management. Consequently, the hypothesis is rejected. However, the hypothesis is accepted because the dimension "Minimizing Food Waste/Food Waste as a Source of Livelihood" has a t-value of 0.599, which exceeds the significance level of 0.05.

The variables "Thriftiness and Proper Budget Allotment," "Attitude on Food Waste," and "Health Consciousness" each have t-values of 0.463, 0.320, and 0.411, respectively, with a combined t-value of 0.908 for attitudes towards food waste management. The hypothesis is accepted as each value is higher than the significance level of 0.05.

For the variables "Awareness of Consequence," "Ascription of Responsibility," and "Personal Norm" related to behavioral intention, there are significant differences (t-values of 0.005, 0.048, and 0.046, respectively), leading to the rejection of the hypothesis. However, the t-values of 0.629, 0.312, and 0.938 are more significant than the significance level of 0.05 for the dimensions "Filial Piety" and "Intention to Reduce Food Waste," as well as the overall assessment, indicating no significant difference in the methods used to manage food waste among a subset of San Carlos City's food service establishments. Therefore, the hypothesis for these dimensions is accepted.

The results indicate significant variability among selected food service businesses in San Carlos City concerning knowledge, attitudes, and behavioral intentions regarding food waste management. Expressly, the hypothesis is rejected for "Number of Years of Operations," "Food Waste Recycling," and "Positive Benefits of Food Waste Management," highlighting differing levels of understanding and implementation of food waste practices. Conversely, it is accepted that enterprises have a consistent attitude regarding "Minimizing Food Waste/Food Waste as a Source of Livelihood," as substantial differences are lacking in this dimension.

Regarding the dimensions "Thriftiness and Proper Budget Allotment," "Attitude on Food Waste," and "Health Consciousness," enterprises demonstrate uniform attitudes toward food waste management, supporting the acceptance of the hypothesis. No significant discrepancies are found in these dimensions. However, notable differences in behavioral intentions, particularly in "Awareness of Consequence," "Ascription of

Responsibility," and "Personal Norm," indicate variations in commitment to food waste reduction measures, leading to the rejection of the hypothesis concerning these dimensions.

In summary, consistent guidelines and targeted interventions can enhance food waste management practices, addressing consistent perceptions and significant differences across various dimensions. By filling these gaps through customized training initiatives, standardizing best practices, and promoting accountability and awareness, food service enterprises in San Carlos City can enhance the overall effectiveness of their food waste management programs.

While the level of knowledge may weakly influence handling practices among respondents, it does not necessarily correlate with high knowledge contributing to good practices. This aligns with previous studies by Zainal et al. (2019) and Adeyemo et al. (2013), which found no association between knowledge and the practice of food waste management among Malaysian and Nigerian communities (Filimonau et al., 2020).

Respondents' behavioral intentions reflect an understanding of food waste consequences, responsibilities, and norms, but challenges related to habits and constraints often lead to wastage. The restructuring of kitchens with modern refrigerators is deemed crucial, as emphasized by Szakos et al. (2020), who advocate for childhood education to shape food waste behaviors.

Advancements in attitudes and practices toward food waste management among foodservice operators may occur in tandem with knowledge enhancement. Regulatory initiatives, such as tax deductions for food redistribution and "pay as you throw" schemes that charge food waste producers more, as well as organizational-level implementations like the introduction of software solutions in commercial kitchens, can reduce wastage, as indicated by the World Biogas Association's study (2018). Thus, comprehensive efforts involving all stakeholders, particularly food service operators, are essential in addressing food waste challenges (Ramli et al., 2022).

Table 27 Difference in Knowledge, Attitude and Behavioral Intention on Food Waste of Employees in Selected Food Service Establishment in Northern Negros according to Tenure

Dimensions	Computed p-value	Significance @ 0.05 level	Status of Hypothesis
KNOWLEDGE			
Food waste recycling	0.041	Significant	Rejected
Positive Benefits of Food Waste Management	0.000	Significant	Rejected
Minimizing food waste/food waste as a source of livelihood	0.059	Not Significant	Accepted
Total	0.000	Significant	Rejected
ATTITUDE			
Thriftiness and proper budget allotment	0.000	Significant	Rejected
Attitude on food waste.	0.078	Not Significant	Accepted
Health consciousness	0.024	Significant	Rejected
Total	0.022	Significant	Rejected
BEHAVIORAL INTENTION			
Awareness of consequence	0.046	Significant	Rejected
Ascription of responsibility	0.009	Significant	Rejected
Personal Norm	0.076	Not Significant	Accepted
Filial Piety	0.000	Significant	Rejected
Intention to reduce food waste	0.000	Significant	Rejected
Total	0.000	Significant	Rejected

Table 27 presents the differences in knowledge, attitude, and behavioral intention regarding food waste among employees in selected food service establishments in Northern Negros, according to tenure.

Most dimensions are significant, leading to the rejection of the hypothesis. However, one dimension in each variable is not significant: for knowledge, "Minimizing Food Waste/Food Waste as a Source of Livelihood" has a p-value of 0.059; for attitude, "Attitude on Food Waste" has a p-value of 0.078; and for behavioral intention, "Personal Norm" has a p-value of 0.076. These results lead to the acceptance of the hypothesis for these specific dimensions.

The findings indicate a broad consensus among the variables under study, showing that most dimensions are meaningful, thus leading to the rejection of the hypothesis. The non-significant dimensions, however, highlight areas where attitudes and behaviors are less consistent: "Minimizing Food Waste/Food Waste as a Source of Livelihood" in knowledge, "Attitude on Food Waste" in attitudes, and "Personal Norm" in behavioral intention. These results suggest that while there is a consensus and understanding about food waste, targeted interventions are needed in specific areas. Aligning information, attitudes, and intentions more closely through focused education, awareness campaigns, and behavior modification techniques can enhance overall effectiveness in reducing food waste.

Knowledge plays a crucial role in influencing attitudes and practices among food handlers. This association indicates that food handlers with good knowledge tend to have positive attitudes and practices. This finding aligns with previous research conducted in Vietnam. Moreover, while good attitudes can enhance practices in food safety, practical training among food handlers can significantly improve attitudes and practices (Filimonau et al., 2020).

Regarding attitudes, respondents felt guilty when discarding food, especially knowing many others were hungry. However, a small percentage of respondents believe that more information about the cost of discarded food would influence their attitudes toward food waste. This lack of awareness about food costs may relate to unplanned food preparation before ordering. Better planning before purchasing can help consumers stay within budget and reduce unnecessary spending, reducing food waste (Ramli et al., 2022).

Table 28 Difference in Knowledge, Attitude and Behavioral Intention on Food Waste of Employees in Selected Food Service Establishment in Northern Negros according to Form of Business Organization

Dimensions	Computed p-value	Significance @ 0.05 level	Status of Hypothesis
Knowledge			
Food waste recycling	0.000	Significant	Rejected
Positive Benefits of Food Waste Management	0.011	Significant	Rejected
Minimizing food waste/food waste as a source of livelihood	0.017	Significant	Rejected
Total	0.000	Significant	Rejected
Attitude			
Thriftness and proper budget allotment	0.010	Significant	Rejected
Attitude on food waste.	0.133	Not Significant	Accepted
Health consciousness	0.000	Significant	Rejected
Total	0.000	Significant	Rejected
Behavioral Intention			
Awareness of consequence	0.186	Not Significant	Accepted
Ascription of responsibility	0.000	Significant	Rejected
Personal Norm	0.000	Significant	Rejected
Filial Piety	0.004	Significant	Rejected
Intention to reduce food waste	0.084	Not Significant	Accepted
Total	0.000	Significant	Rejected

Table 28 depicts the differences in knowledge, attitude, and behavioral intention regarding food waste among employees in selected food service establishments in Northern Negros, categorized by types of business organization.

All dimensions related to knowledge are significant, leading to the rejection of the hypothesis. However, the dimension "Attitude on Food Waste" is not significant in the attitude category. For the behavioral intention variable, the dimensions "Awareness of Consequence" (p-value 0.186) and "Intention to Reduce Food Waste" (p-value 0.084) are also not significant. Therefore, the hypothesis for these dimensions is accepted. These findings indicate more significant variability in attitudes and behavioral intentions than knowledge-related dimensions, which uniformly demonstrate a solid and consistent understanding among the groups under study.

There are gaps in attitudes and intentions on food waste reduction despite a substantial body of knowledge, according to the non-significant findings in the "Attitude on Food Waste," "Awareness of Consequence," and "Intention to Reduce Food Waste" dimensions. This implies that changing behaviors can require more than just gaining information. To promote more persistent and significant behavioral changes regarding food waste, interventions must address these attitude and intention gaps. These could be accomplished by implementing practical instruments, motivational techniques, and focused educational efforts.

This shows that a high level of knowledge possessed by the respondents does not always come with excellent and positive attitudes towards food waste, as exhibited by a previous study on Indian men and women, according to the study by Gupta (2022). Further, the government should assist restaurant managers in measuring their enterprises' main food waste streams more accurately by offering dedicated training opportunities, such as professional development workshops. Among other goals, these trainings may share good business practices in restaurant food waste mitigation, thus playing the role of knowledge multiplying events. Next, the government should develop an effective financial (dis) incentive system to encourage restaurateurs to engage more actively in food waste management. For example, commercial food waste collections can be organized in such a way in Bulgaria that local restaurateurs are charged per volume of food waste generated rather than a flat fee, thus encouraging a reduction in the quantity of wasted food according to the study of Filimonau et al. (2020).

Table 29 Difference in Knowledge, Attitude and Behavioral Intention on Food Waste of Employees in Selected Food Service Establishment in Northern Negros according to Types of Business Establishment

Dimensions	Computed p-value	Significance @ 0.05 level	Status of Hypothesis
Knowledge			
Food waste recycling.	0.000	Significant	Rejected
Positive Benefits of Food Waste Management	0.000	Significant	Rejected
Minimizing food waste/food waste as a source of livelihood	0.000	Significant	Rejected
Total	0.000	Significant	Rejected
Attitude			
Thriftness and proper budget allotment	0.001	Significant	Rejected
Attitude on food waste.	0.000	Significant	Rejected
Health consciousness	0.000	Significant	Rejected
Total	0.000	Significant	Rejected
Behavioral Intention			
Awareness of consequence	0.000	Significant	Rejected
Ascription of responsibility	0.001	Significant	Rejected
Personal Norm	0.000	Significant	Rejected
Filial Piety	0.000	Significant	Rejected
Intention to reduce food waste	0.000	Significant	Rejected
Total	0.000	Significant	Rejected

Table 29 shows the difference in knowledge, attitude, and behavioral intention in selected food service establishments of Northern Negros according to types of business establishments. All computed p-values are 0.000 for each dimension, except for "Thriftness and Proper Budget Allotment" and "Ascription of Responsibility," which have p-values of 0.001. These results indicate significant differences across the dimensions. Consequently, the hypothesis is rejected. These results imply that the groups under study differ significantly in these aspects.

The hypotheses' rejection suggests that the studied variables must be consistently understood or applied, emphasizing the necessity for customized approaches to address the unique requirements and behaviors within each dimension. This could guide focused interventions and policy changes to improve efficacy and conformity to the various traits and expectations of the relevant groups.

To address these concerns, restaurant managers must carefully consider how menus are designed and serving sizes are set (von Massow & McAdams, 2015; Heikkilä et al., 2016; Principato et al., 2018). To be more involved in educating consumers about food waste and "nudging" them according to Lehner et al. (2016), Sirieix et al. (2017) and Stöckli et al. (2018), To take an active role in measuring food waste as a means to monitoring and adjusting operations and production (Sakaguchi et al., 2018). According to Sakaguchi et al. (2018), such monitoring also guides management in how best to dispose of food waste.

Table 30 Relationship in Knowledge and Attitude, Knowledge and Behavioral Intention on Food Waste of Employees in Selected Food Service Establishment in Northern Negros

Correlates	Computed R-value	Significance @ 0.05 level	Status of Hypothesis
Knowledge and Attitude	0.000	Significant	Rejected
Knowledge and Behavioral Intention	0.000	Significant	Rejected

Table 30 presents the significant relationship between knowledge and attitude and knowledge and behavioral intention of the food service establishments in Northern Negros. All variables, including knowledge, attitude, and knowledge and behavioral intention, show a computed correlation coefficient (R-value) of 0.000, with a significance level of 0.05. Therefore, the hypothesis is rejected.

Additionally, the results indicate a positive relationship with a significant correlation between knowledge and attitudes toward food waste among the respondents ($r = 0.26$, $p < 0.05$). According to the specified Pearson's correlation strength range, this relationship is weakly positively correlated. It suggests that the respondents' high level of knowledge does not always correspond to excellent and positive attitudes toward food waste, as shown in previous studies among Indian men and women (Gupta, 2022; Ramli et al., 2022).

Food service suppliers in Bulgaria are noted to refrain from proactively engaging in food waste minimization, partly due to their lack of recognition of the issue and their disinterest in its management, aligning with Eriksson, Strid, and Hansson's (2012) findings. The Bulgarian government should enhance awareness of the food waste challenge and the necessity for mitigation among suppliers (Filimonau et al., 2020).

Interestingly, the composting index negatively correlated with food waste diversion intent, yet attitudes toward composting remained positively correlated. This may suggest that those who divert food waste are less concerned about composting. This finding is consistent with research indicating that compost individuals tend to worry less about source reduction (Brook Lyndhurst, 2007; Neff et al., 2015; Refsgaard & Magnussen, 2009). Given the complexity of factors influencing human psychology and behavior, models explaining 20% to 30% of the variance are considered beneficial and valuable (Bartholomew et al., 2008).

SUMMARY OF FINDINGS, CONCLUSIONS, AND RECOMMENDATIONS

This chapter summarizes the significant findings, conclusions, and recommendations.

This research endeavor was undertaken to investigate the knowledge, attitude, and behavioral intention on food waste of employees in selected food service establishments in Northern Negros. The findings of this study have been methodically organized to address the raised research questions. Rigorous statistical analysis techniques were employed to analyze the gathered data, facilitating the derivation of meaningful generalizations and insightful inferences.

Summary of Findings

The demographic profile of the participants shows that the study included four hundred respondents, with 71.06% of the respondents aged between 18 and 32 (younger age group). Respondents were predominantly male, comprising 63.74% of the sample. Most respondents had fewer than seven years of operation experience, accounting for 78.75%. Regular employees constituted the majority, at 54.58%. Furthermore, around 59.71% of the respondents were engaged in sole proprietorship businesses, and 45.42% were food vendors.

Moreover, regarding the level of knowledge on food waste management among employees in selected food service establishments in Northern Negros, the results showed that "Positive benefits of food waste management" received the lowest mean score in terms of age (younger age 18-32 yrs. old), number of years of operation (7 years and below), and tenure (regular employees), as well as for the type of business establishment (food vendors), across various demographic variables. In contrast, "Minimizing food waste/food waste as a source of livelihood" received the lowest mean score regarding sex (male). Meanwhile, regarding food waste recycling, partnership respondents also showed the lowest mean score.

On the other hand, concerning the level of attitude towards food waste management among employees in selected food service establishments in Northern Negros, the results indicated that "Attitude on food waste" received the lowest mean score in terms of age (older age 33-47 yrs. old), sex (male), number of years of operation (7 years and below), tenure (regular employees), forms of business organization (sole proprietorship), and type of business establishment (food vendors) across various demographic variables.

Furthermore, regarding the level of behavioral intention towards food waste management among employees in selected food service establishments in Northern Negros, the results showed that "Ascription of responsibility" received the lowest mean score in terms of age (older age 33-47 yrs. old), sex (male), tenure (contractual), forms of business organization (partnership). Meanwhile, "Personal Norm" also received the lowest mean score in terms of the number of years of operation (8 years and above) and type of business establishment (cafeteria) across various demographic variables.

Regarding significant differences in the level of knowledge, attitude, and behavioral intention towards food waste among employees in selected food service establishments in Northern Negros, the results indicated significant differences in age, tenure, forms of business organization, and type of business establishment. Additionally, significant differences were found in knowledge and attitude concerning sex and in knowledge concerning the number of years of operation, with each variable's computed p-value being less than the significance level.

Furthermore, concerning the significant relationship between knowledge and attitude toward food waste management, the study results indicated a significant relationship with a computed R-value of 0.000, leading to the rejection of the hypothesis.

Conclusions

The level of knowledge has a limited impact on the attitudes of food service operators, kitchen staff, waiters, and cooks toward managing food waste by minimizing it or viewing it as a potential livelihood source. This study's moderate to low levels highlight a significant positive relationship between these two aspects. This suggests that attitudes towards food handling practices are not solely influenced by knowledge but also by individual choices and perceptions regarding behavioral practices.

With these efforts implemented, the goal of controlling and reducing food waste in the food industry may be achieved. Importantly, future studies should consider other aspects to include in the questionnaire, such as recording the job category of each participant in food service operations, to accurately identify reasons behind knowledge, attitudes, and behavioral intentions towards food waste.

Moreover, the research findings underscore significant variations in various demographic aspects, including age, sex, number of years of operation, tenure, forms of business organization, and type of business establishment. Furthermore, the study results indicate a significant relationship between the knowledge and attitude of respondents regarding food waste management. This indicates that respondents' choices are closely intertwined with their attitudes, preferences, and experiences. Taken together, these findings illuminate the multifaceted importance of food waste management in food service establishments and the necessity of imparting proper waste disposal attitudes to all staff.

Recommendations

Based on the study's findings, several recommendations can be proposed to improve knowledge, attitude, and behavioral intention regarding food waste in the mentioned food service establishments in Northern Negros:

The study suggests that while knowledge is important for reducing food waste, it is also essential for employees to have positive attitudes toward waste management practices to effectively prevent it.

Additionally, the study enhances understanding of the challenges related to food waste management in food service establishments in Northern Negros. It emphasizes the scale of food waste in this growing market segment of out-of-home food consumption, identifies main drivers, and highlights effective mitigation strategies adopted by food service managers. The study also identifies barriers to managing restaurant food waste effectively and suggests ways to address these challenges in the future.

The local government unit of Northern Negros is advised to address this issue proactively, given the rapid growth and evolving nature of food service establishments in the city. It should prioritize implementing solutions or programs aimed at reducing food waste generated by these establishments.

Improving knowledge of food waste management among all food service personnel is crucial for achieving excellence in food service practices. The researcher recommends including a straightforward assessment at the end of food handlers' training to gauge their understanding.

Furthermore, the Hotel and Restaurant Association of Negros Occidental should play a leading role in organizing training sessions that educate stakeholders—from managers and chefs to wait staff and customers—about the impact of food business practices. Starting with purchasing less food is identified as a highly effective method to minimize food waste, with various additional steps available to further reduce waste.

Implementing these recommendations, particularly within the food service industry, can maximize the potential for excellent food practices across all food service operations.

Proposed Food Waste Recycling Strategy

Rationale

This research investigates the reduction of food waste recycling strategy in addressing the environmental and health concerns associated with food and agricultural by-product waste. The findings reveal that food waste management practices in food service establishment in San Carlos City are characterized by a mix of strengths and shortcomings. While the study identifies commendable efforts in food waste segregation and recycling, significant gaps persist in terms of collection, disposal, and overall waste reduction strategies. Despite the existence of regulations and policies, the lack of awareness, limited infrastructure, and inadequate coordination among stakeholders hinder the proper implementation of food waste management practices.

Variables	Objectives	Activity/ies	Person In-charge	Amount	Time Frame
(Knowledge) Minimizing food waste/ food waste as a source of livelihood	Create awareness on proper purchasing of ingredients in foodservice establishment to eliminate food waste.	Conduct Proper Training on Food waste Reduction	HR, Food and Beverage Manager, Chef	P 20,000.00	September, 2024
	Sharing the best practices in eliminating food waste to other food service establishment in San Carlos City	Community Engagement and Involvement The planning of activities like composting demos, community feasts made from leftover food, and challenges to reduce food waste should be prioritized.	LGU Tourism & CEMO, Hospitality Organization just like COHREP etc.	P 100,000	November 10, 2024
	Increase Employee understanding regarding food waste management	Education and Awareness Campaigns Inform the community on the ecological, financial, and societal consequences of food waste.	LGU Tourism & CEMO, Hospitality Organization just like COHREP etc.	P 100,000	January 20, 2025
	Formulate training on proper inventory management to eliminate food waste	Conduct Food waste audit	LGU Tourism & CEMO, Hospitality Organization just like COHREP etc.	P 100,000	March 20, 2025
(Attitude) Attitude on food waste	Practice and implement system in developing the attitude of employees when it comes to food waste.	Efficient Supply Chain Management Cut down on wasteful overproduction and spoilage by improving your inventory management procedures	LGU, Food service establishment, Community Households	P 150,000	September 25, 2024
(Behavioral Intention) Ascription of responsibility	The provision of a location where extra food may be shared and accessible by people who are in need is essential.	Community Fridges • Set up community fridges in accessible locations where residents can leave excess food and others can take it as needed.	LGU, Food service establishment, Community Households	P 150,000	December 25, 2024

		• Ensure regular maintenance and monitoring for food safety.			
Personal Norm	Enhance Program Effectiveness	Resource Allocation Seek funding and support from local businesses, NGOs, and government programs to sustain the food recycling initiatives.	Government Officials, (Local and Nationals)	500,000	January 2024

REFERENCES

- Abadi, B., Mahdavian, S., & Fattahi, F. (2021). The waste management of fruit and vegetable in wholesale markets: Intention and behavior analysis using path analysis. *Journal of Cleaner Production*, 279, 123802. <https://doi.org/10.1016/j.jclepro.2020.123802>
- Abidin, N. N. Z., Zaki, M. A., & Shafie, F. A. (2022). Knowledge, Attitude and Practices of Food Waste Management Among Foodservice Operators In Petaling Jaya Utara (PJU) 9 AND 10, SELANGOR. *Journal of Sustainability Science and Management*, 17(12), 89–104. <https://doi.org/10.46754/jssm.2022.12.009>
- Alattar, M. A., Delaney, J., Morse, J. L., & Nielsen-Pincus, M. (2020). Food waste knowledge, attitudes, and behavioral intentions among university students. *Journal of Agriculture, Food Systems, and Community Development*, 9(3), 109–124. <https://doi.org/10.5304/jafscd.2020.093.004>
- Alcorn, M. R., Vega, D., Irvin, R., & Paez, P. (2021). Reducing food waste: an exploration of a campus restaurant. *British Food Journal*, 123(4). <https://doi.org/10.1108/BFJ-03-2020-0165>
- Almanasreh, E., Moles, R., & Chen, T. F. (2019). Evaluation of methods used for estimating content validity. *Research in Social and Administrative Pharmacy*, 15(2), 214–221. <https://doi.org/10.1016/j.sapharm.2018.03.066>
- Ang, W. Z., Narayanan, S., & Hong, M. (2021). Responsible consumption: addressing individual food waste behavior. *British Food Journal*, 123(9). <https://doi.org/10.1108/BFJ-03-2021-0328>
- Ansari, M. R., Rahim, K., Bhoje, R., & Bhosale, S. (2022). A study on research design and its types. July 1132–1135.
- Asmelash, A. G., & Kumar, S. (2019). The structural relationship between tourist satisfaction and sustainable heritage tourism development in Tigray, Ethiopia. *Heliyon*, 5(3), e01335. <https://doi.org/10.1016/j.heliyon.2019.e01335>
- Attiq, S., Danish Habib, M., Kaur, P., Junaid Shahid Hasni, M., & Dhir, A. (2021). Drivers of food waste reduction behaviour in the household context. *Food Quality and Preference*, 94, 104300. <https://doi.org/10.1016/j.foodqual.2021.104300>
- Barrion, A. S. A., Calayag, J. A. S., Nguyen-Orca, M. F. R., & Melo-Rijik, M. N. (2023). Food loss and waste in the Philippines: a literature review. *Food Research*, 7(6), 278–289. [https://doi.org/10.26656/fr.2017.7\(6\).127](https://doi.org/10.26656/fr.2017.7(6).127)
- Baloglu, S., Raab, C., & Malek, K. (2022). Organizational Motivations for Green Practices in Casual Restaurants. *International Journal of Hospitality and Tourism Administration*, 23(2), 269–288. <https://doi.org/10.1080/15256480.2020.1746216>
- Beheshti, S., & Heydari, J. (2023). Municipal food waste recycling as an environmental strategy: a game-theoretical approach. *Environmental Science and Pollution Research*, 30(13). <https://doi.org/10.1007/s11356-022-23851-7>
- Bell, A. E., & Ulhas, K. R. (2020). Working to reduce food waste: Investigating determinants of food waste amongst taiwanese workers in factory cafeteria settings. *Sustainability (Switzerland)*, 12(22). <https://doi.org/10.3390/su12229669>
- Bharucha, J. (2018). Tackling the challenges of reducing and managing food waste in Mumbai restaurants. *British Food Journal*, 120(3). <https://doi.org/10.1108/BFJ-06-2017-0324>

15. Bilska, B., Tomaszewska, M., & Kołożyn-Krajewska, D. (2022). The Management of Meals in Food Service Establishments in the Context of Food Waste—Results of Focus Group Interviews with Employees and Owners. *Sustainability (Switzerland)*, 14(15). <https://doi.org/10.3390/su14159258>
16. Brizi, A., & Biraglia, A. (2021). “Do I have enough food?” How need for cognitive closure and gender impact stockpiling and food waste during the Covid-19 pandemic: A cross-national study in India and the United States of America. *Personality and Individual Differences*, 168. <https://doi.org/10.1016/j.paid.2020.110396>
17. Camilleri, M. A. (2021). Sustainable production and consumption of food. *Mise-en-place circular economy policies and waste management practices in tourism cities. Sustainability (Switzerland)*, 13(17). <https://doi.org/10.3390/su13179986>
18. Chaudhary, H. K., & Sharma, T. (2023). Efficient Strategies For Managing Food Waste In Institutional Catering: A Comprehensive Study. *PUSA Journal of Hospitality and Applied Sciences*, 9(2). <https://doi.org/10.48165/pjhas.2023.9.2.9>
19. Chengqin, E. K., Zailani, S., Rahman, M. K., Aziz, A. A., Bhuiyan, M. A., & Gazi, M. A. I. (2024). Determinants of household behavioural intention towards reducing, reusing and recycling food waste management. *Nankai Business Review International*, 15(1). <https://doi.org/10.1108/NBRI-01-2022-0011>
20. Chuah, S.-C., & Singh, J. K. (2020). Food Waste and Disposal Behaviour among University Students. *Advances In Business Research International Journal*, 6(2). <https://doi.org/10.24191/abrij.v6i2.11465>
21. Deksne, J., & Litavniece, L. (2022). Principles of a Circular Economy In The Food Sector: A Systematic Literature Review. *Journal of Regional Economic and Social Development*, 14. <https://doi.org/10.17770/jresd2022vol14.6969>
22. Derqui, B., Fernandez, V., & Fayos, T. (2018). Towards more sustainable food systems. Addressing food waste at school canteens. *Appetite*, 129, 1–11. <https://doi.org/10.1016/j.appet.2018.06.022>
23. Doouglas, T. (2018). Section IV: Research Types Descriptive Correlational True Experimental Quasi-Experimental Causal-Comparative Single Subject Research Case Study Ethnography Narrative Research A mixed methods research design combines both quantitative and qualitative rese. 17–19.
24. Drummond, K., & Murphey-Reyes, A. (2017). Quantitative research designs: Experimental, quasi-experimental, and descriptive. *Jones & Bartlett Learning*, 155–183.
25. Elford, A., Spence, A. C., Wakem, A., Rozman, M., Campbell, K. J., & Love, P. (2023). Environmental sustainability and food provision in the early childhood and education setting. *Public Health Nutrition*, 26(11). <https://doi.org/10.1017/S1368980023001908>
26. Elnasr, A. E. A., Aliane, N., & Agina, M. F. (2021). Tackling food waste in all-inclusive resort hotels in egypt. *Processes*, 9(11). <https://doi.org/10.3390/pr9112056>
27. Feijoo, G., & Moreira, M. T. (2020). Fostering environmental awareness towards responsible food consumption and reduced food waste in chemical engineering students. *Education for Chemical Engineers*, 33. <https://doi.org/10.1016/j.ece.2020.07.003>
28. Filimonau, V., Todorova, E., Mzembe, A., Sauer, L., & Yankholmes, A. (2020). A comparative study of food waste management in full service restaurants of the United Kingdom and the Netherlands. *Journal of Cleaner Production*, 258, 120775. <https://doi.org/10.1016/j.jclepro.2020.120775>
29. Gładysz, B., Buczacki, A., & Haskins, C. (2020). Lean management approach to reduce waste in horeca food services. *Resources*, 9(12). <https://doi.org/10.3390/resources9120144>
30. Gusti, A., Isyandi, B., Bahri, S., & Afandi, D. (2015). The Behavioral Intention to Implement Sustainable Waste Management on Primary School Students in City of Padang, Indonesia. *International Journal of Innovation and Applied Studies* ISSN, 13(2), 2028–9324.
31. Hamerman, E. J., Rudell, F., & Martins, C. M. (2018). Factors that predict taking restaurant leftovers: Strategies for reducing food waste. *Journal of Consumer Behaviour*, 17(1). <https://doi.org/10.1002/cb.1700>
32. Ho, K. S., & Chu, L. M. (2019). Characterization of food waste from different sources in Hong Kong. *Journal of the Air and Waste Management Association*, 69(3). <https://doi.org/10.1080/10962247.2018.1526138>
33. Jeldres, M. R., & Costa, E. D. (2023a). A review of Lawshe’s method for calculating content validity in the social sciences. *Frontiers in Education*, November 1–8. <https://doi.org/10.3389/feduc.2023.1271335>

34. Jeldres, M. R., & Costa, E. D. (2023b). A review of Lawshe's method for calculating content validity in the social sciences. *Frontiers in Education*, November. <https://doi.org/10.3389/feduc.2023.1271335>
35. Kattiyapornpong, U., Ditta-Apichai, M., & Chuntamara, C. (2023). Sustainable Food Waste Management Practices: Perspectives from Five-Star Hotels in Thailand. *Sustainability (Switzerland)*, 15(13). <https://doi.org/10.3390/su151310213>
36. Ko, W. H., & Lu, M. Y. (2020). Evaluation of the professional competence of kitchen staff to avoid food waste using the modified delphi method. *Sustainability (Switzerland)*, 12(19). <https://doi.org/10.3390/su12198078>
37. Kör, B., Krawczyk, A., & Wakkee, I. (2022). Addressing food loss and waste prevention. *British Food Journal*, 124(8). <https://doi.org/10.1108/BFJ-05-2021-0571>
38. Labib, M., Mohamed, L., Elsherie, T., & Abdel Aal, F. (2023). Food Waste Management as a Business Entrepreneurship Tool in Fast Food Restaurants in Matrouh Governorate. *Journal of Tourism, Hotels and Heritage*, 6(2). <https://doi.org/10.21608/sis.2023.216231.1145>
39. Lang, L., Wang, Y., Chen, X., Zhang, Z., Yang, N., Xue, B., & Han, W. (2020). Awareness of food waste recycling in restaurants: evidence from China. *Resources, Conservation and Recycling*, 161(November 2019), 104949. <https://doi.org/10.1016/j.resconrec.2020.104949>
40. Leverenz, D., Schneider, F., Schmidt, T., Hafner, G., Nevárez, Z., & Kranert, M. (2021). Food waste generation in germany in the scope of european legal requirements for monitoring and reporting. *Sustainability (Switzerland)*, 13(12). <https://doi.org/10.3390/su13126616>
41. Lipinski & O'Connor. (2016). Reducing Food Loss & Waste. Unep,SDG, 1–14.
42. Ma, Z., Brugni, T. V., Hector, H., & Sauer, B. (2024). The Power of Responsibility: Unlocking the Potential of CSR in Hospitality's Fight against Food Waste. *Sustainability (Switzerland)*, 16(7), 1–18. <https://doi.org/10.3390/su16072847>
43. Marek-Andrzejewska, E. M., & Wielicka-Regulska, A. (2021). Targeting youths' intentions to avoid food waste: Segmenting for better policymaking. *Agriculture (Switzerland)*, 11(4). <https://doi.org/10.3390/agriculture11040284>
44. Meier, T., von Borstel, T., Welte, B., Hogan, B., Finn, S. M., Bonaventura, M., Friedrich, S., Weber, K., & de Teran, T. D. (2021). Food waste in healthcare, business and hospitality catering: Composition, environmental impacts and reduction potential on company and national levels. *Sustainability (Switzerland)*, 13(6). <https://doi.org/10.3390/su13063288>
45. Miroso, M., Pearson, D., & Reynolds, C. (2020). Food waste in Australia and New Zealand. In *Routledge Handbook of Food Waste*. <https://doi.org/10.4324/9780429462795-18>
46. Mumtaz, S., Chu, A. M. Y., Attiq, S., Shah, H. J., & Wong, W. K. (2022). Habit—Does It Matter? Bringing Habit and Emotion into the Development of Consumer's Food Waste Reduction Behavior with the Lens of the Theory of Interpersonal Behavior. *International Journal of Environmental Research and Public Health*, 19(10). <https://doi.org/10.3390/ijerph19106312>
47. Ogiemwonyi, O., Alam, M. N., & Alotaibi, H. S. (2023). Connecting green HRM practices to pro-environmental behavior through green human capital in the hospitality sector. *Business Strategy and Development*, 6(4). <https://doi.org/10.1002/bsd2.297>
48. Personal, M., & Archive, R. (2021). Quantitative Research: A Successful Investigation in Natural and Social Sciences Quantitative Research : A Successful Investigation in Natural and Social Sciences (Issue 105149).
49. Phooi, C. L., Azman, E. A., Ismail, R., Arif Shah, J., & Koay, E. S. R. (2022). Food Waste Behaviour and Awareness of Malaysian. *Scientifica*, 2022.
50. <https://doi.org/10.1155/2022/6729248>
51. Pinto, R. S., Pinto, R. M. dos S., Melo, F. F. S., Campos, S. S., & Cordovil, C. M. dos S. (2018). A simple awareness campaign to promote food waste reduction in a university canteen. *Waste Management*, 76(2018), 28–38. <https://doi.org/10.1016/j.wasman.2018.02.044>
52. Poonia, A., Sindhu, S., Arya, V., & Panghal, A. (2022). Analysis of drivers for anti-food waste behaviour - TISM and MICMAC approach. *Journal of Indian Business Research*, 14(2). <https://doi.org/10.1108/JIBR-02-2021-0069>
53. Principato, L., Marchetti, S., Barbanera, M., Ruini, L., Capoccia, L., Comis, C., & Secondi, L. (2023). Introducing digital tools for sustainable food supply management: Tackling food loss and waste in industrial canteens. *Journal of Industrial Ecology*, 27(4). <https://doi.org/10.1111/jiec.13391>

54. Ratliff, A. (2023). Strategies to Reduce Food waste in Restaurants. *Walden Dissertations and Doctoral Studies*, 130.
55. Rodenas, S. D., & Menes, C. (2026). Total Quality Management Practices in Multi-Awarded Cooperatives in Northern Negros : A Mixed Method Study. X(2454). <https://doi.org/10.47772/IJRISS>
56. Rodenas, S. D. (2025). Perceived Leadership Style , Job Satisfaction , and Affective Commitment among Employees in Higher Education Institution. IX(2454). <https://doi.org/10.47772/IJRISS>
57. Schanes, K., Dobernig, K., & Gözet, B. (2018). Food waste matters - A systematic review of household food waste practices and their policy implications. *Journal of Cleaner Production*, 182. <https://doi.org/10.1016/j.jclepro.2018.02.030>
58. Stöckli, S., Niklaus, E., & Dorn, M. (2018). Call for testing interventions to prevent consumer food waste. *Resources, Conservation and Recycling*, 136(November 2017), 445–462. <https://doi.org/10.1016/j.resconrec.2018.03.029>
59. Shaw, P. J. (2021). Avoidable household food waste: Diagnosing the links between causes and composition. *Recycling*, 6(4). <https://doi.org/10.3390/recycling6040080>
60. Teoh, C. W., Koay, K. Y., & Chai, P. S. (2022). The role of social media in food waste prevention behaviour. *British Food Journal*, 124(5). <https://doi.org/10.1108/BFJ-04-2021>
61. Zandonadi, R. P. (2021). Food Waste on Foodservice: An Overview through the Perspective. 1-14.