

Article

Food Waste in Everyday Life: Capability, Opportunity, and Motivation Amongst Vocational Education Students

Yassir M. Sefu *  and Esther J. Veen 

Urban Food Issues Research Group, Aeres University of Applied Sciences Almere, Arboretum West 98, 1325 WB Almere, The Netherlands; e.veen@aeres.nl

* Correspondence: y.sefu@aeres.nl

Abstract

People in the late adolescent and young adult age range contribute disproportionately to household food waste. However, research on this age group often focuses on university students or treats young adults as a homogeneous group: students in vocational education receive less research attention. Using an exploratory approach this study aims to understand the lived experiences, everyday practices and perspectives of vocational students regarding food waste. It examines how these students experience, explain, and manage food waste in their everyday lives, and how these practices are shaped by capability, opportunity, and motivation. Using the COM-B framework as an analytical lens, we analyzed interviews with 26 students and a survey amongst 188 students. We find that students frequently waste small portions of food across multiple everyday contexts. Their food practices are strongly shaped both by their dependence on the parental household and to a lesser extent by exposure to professional food-service environments through vocational education and part-time work. Hence, rather than resulting primarily from intentional disregard for sustainability, food waste often emerges from routine practices, changing schedules, convenience, and uncertainty surrounding food safety and storage.

Keywords: adolescents; COM-B; households; routine practices; school environments; social support

1. Introduction

Globally, approximately one-third of all food produced for human consumption—over 1.3 billion tons annually—is lost or wasted. Food is wasted at all the different stages in the food chain, from production to consumption [1,2]. As such, food waste has emerged as one of the most pressing sustainability challenges facing society today, with wide-ranging economic, environmental, and social consequences [1,3]. It is estimated that food waste is responsible for 8–10% of global greenhouse gas emissions, significantly driving climate change [4,5]. Moreover, food waste squanders valuable resources including land, water, energy, and labor, while exacerbating food insecurity and social inequities [3]. In recognition of these concerns, the United Nations has prioritized food waste reduction as a critical global goal, setting Sustainable Development Goal (SDG) 12.3 to halve per capita food waste at the retail and consumer levels by 2030 [2]. This target reflects the broad international consensus that food waste reduction is essential to achieving climate, sustainability, and social justice objectives. Reducing food waste thus advances broader sustainability transitions related to climate change mitigation, circular food systems, and responsible consumption practices, simultaneously improving resource efficiency.



Academic Editor: Hamid El Bilali

Received: 24 April 2026

Revised: 17 June 2026

Accepted: 19 June 2026

Published: 16 July 2026

Copyright: © 2026 by the authors.

Licensee MDPI, Basel, Switzerland.

This article is an open access article distributed under the terms and

conditions of the [Creative Commons Attribution \(CC BY\)](https://creativecommons.org/licenses/by/4.0/) license.

In the European Union, households account for more than half of total food waste (54%) [6]. Also in the Netherlands, where this study was undertaken, food waste in households remains a complex and deep-rooted challenge, despite years of awareness raising campaigns and targeted programs. The Dutch nutrition center established that in 2022 the average Dutch consumer discarded 33.4 kg of solid food per person, representing 8.9% of all purchased food. While this marks a 23% reduction compared to 2015 (from 43.3 kg), progress has stalled: between 2019 and 2022 household food waste only decreased by 0.9 kg [7]. This suggests that the low-hanging fruit has been picked; further limiting household food waste needs a more specific and deeper understanding of household food provisioning practices, and more tailored intervention strategies.

Research consistently shows that young people, defined here broadly as those in the late adolescent and young adult age range, contribute disproportionately to household food waste, both in the Netherlands and internationally [8–13]. This occurs not only at home but also in school settings, due to for instance busy lifestyles, a focus on convenience, limited storage and composting options at and around the home, and a lack of knowledge and skills related to food management [11,14]. Furthermore, young adults often undergo significant life course transitions, such as leaving the parental home, moving into shared accommodations, or living independently, that further shape their food purchasing, storage, preparation, and consumption habits [8]. As research indicates that habit formation related to food behaviors occurs predominantly between approximately 16 and 23 years of age, and habits formed during this period tend to persist, this is a vital period for understanding and influencing sustainable food practices [15,16].

Existing research on food waste and young people often focuses on university students or treats young adults as a homogeneous group (e.g., [8,10,17]). Students in vocational education (in Dutch: Middelbaar Beroepsonderwijs or mbo) are generally overlooked or not specifically studied. However, they form a particularly relevant group, not only because approximately a third of all Dutch students following tertiary education are enrolled in vocational institutes [18,19], but also because of their unique social, educational, and professional contexts. First, compared to university students, vocational students are often younger and more likely to live with parents [20], suggesting that they are more strongly dependent on family routines. Second, vocational students frequently pursue studies in sectors directly or indirectly connected to food systems, such as health care and welfare, services (including hospitality, retail, and logistics), and agriculture-related fields [18,21]. As a result, many vocational students encounter food and food waste directly during internships or part-time work, and later in their professional careers. This may shape food provisioning responsibilities, create opportunities for habit formation, influence knowledge about and attitudes towards food waste, and have substantial practical consequences in the professional domain. Finally, it is known that in comparison to their peers in higher education, vocational students more often display unhealthy eating habits and show higher rates of overweight and obesity [22,23], suggesting a different relation to eating and food. For these three reasons, vocational students may experience food waste differently from more independent student populations commonly studied in the existing literature.

Significant knowledge gaps remain regarding the behavioral determinants of food waste among vocational students. Key questions include what knowledge, skills, and perceptions these students hold about food waste, how their living conditions and social environments shape their capabilities and opportunities for reducing food waste, and what motivates or hinders potential waste-reducing behavior. The study adopts an exploratory approach focused on the lived experiences and perspectives of vocational students, aiming to answer the question: *‘How do students of vocational education perceive and interpret their own food waste behavior?’*

2. Materials and Methods

2.1. Analytical Tool: COM-B Model

The empirical data consists of semi-structured interviews and a questionnaire. Both the design of the interviews and questionnaire and the analysis of the data are grounded in the COM-B model. The COM-B model, developed by Michie et al. [24], sees behavior (B) as an outcome of an interaction between three core components: capability (C), opportunity (O), and motivation (M). Capability can be defined as an individual's psychological and physical capacities to engage in behavior and includes relevant knowledge and skills. Opportunity consists of the external factors that make this behavior possible or evoke it, such as the physical environment and social influences. Motivation, finally, refers to reflective processes such as conscious decision-making and automatic processes like habits and emotional responses. The three components dynamically interact to produce behavior [24,25]. The COM-B model has become a foundational framework in health psychology, behavioral science, and sustainability research as a result of its integrative nature and the practical orientation toward understanding behavior in a specific context [24,26]. Its broad scope allows for an examination of multiple determinants of behavior simultaneously, supporting nuanced insight into complex behaviors, such as (reducing) household food waste [27].

In this study we aimed to specifically understand how food waste-related behavior is shaped by the three elements of capability, opportunity, and motivation. In the context of this topic, capability includes skills around food planning, food preparation, and food storage, knowledge of food labels and perishability, and confidence in judging food quality. Young people often experience gaps here due to limited experience or education in food management [14]. Opportunity captures external facilitators and barriers, including physical resources (adequate refrigeration, storage facilities), social influences (family norms, peer behaviors), and environmental constraints (living arrangements, institutional food policies). Such factors can enable or inhibit waste-reducing behaviors in daily life [8,9]. Finally, motivation includes reflective processes like values and beliefs about environment and ethics, and automatic influences like habits, preferences, and emotional reactions (disgust, convenience). These motivational drivers are often inconsistent or conflictual—especially among youth—affecting engagement with waste reduction [10,16]. The COM-B lens helps to make the interplay between these three elements analytically visible and to identify which elements are most relevant targets for interventions in the context of youth food waste.

2.2. Methods Used: Interviews and Questionnaire

We conducted a total of 26 interviews with students, in two separate studies. The interviews were performed by university students as part of their education, supervised by the authors of this paper in the context of their research at the Urban Food Issues Research Group at Aeres University of Applied Sciences Almere, the Netherlands. While both studies used the same interview guide, small differences remain as a response to individual preferences and situations. The original interview guide was designed by the authors of this paper and based upon a similar interview guide on plant-based eating, with the questions targeting all four elements of the COM-B model (capability, opportunity, motivation and behavior). (This similar interview guideline was used in project MAP [Mbo student in Actie voor Plantaardig voedsel] that aimed to understand adolescent perspectives and behavior in relation to plant-based eating. Both authors were involved in this project and took part in creating the interview guide, in cooperation with a number of scholars from other Dutch universities of applied sciences.) Interviews were audio recorded and transcribed. All interviewees signed informed consent forms.

The first set of 16 interviews was conducted by a group of 7 MSc students from Wageningen University, who were invited by the research group for a real-life research assignment. In designing their study, the students were supervised by the first author of this paper and by their own university. The MSc students recruited respondents through contact persons of a number of vocational education institutes, who purposively recruited vocational students, aiming for variation across disciplines. A second set of 10 interviews was conducted at one institute of vocational education during a planned research visit by the research group. During this visit students of one particular class could choose from two specific activities, one being interviewing each other on food waste in groups of two. These interviews took place in the same classroom under supervision of two researchers: in some cases the researchers undertook the interviews themselves. Although these interviews did not go into much depth, the transcripts proved to give valuable insights. This is why we chose to include them in this study. An MSc student of Aeres University of Applied Sciences supervised the session and transcribed the interview recordings.

The student group of Wageningen University administered a questionnaire to supplement the qualitative interview data and enable quantitative analysis. The design of this survey was based on the COM-B model as well. Respondents were students of vocational education, recruited from several Dutch schools, with key demographic details recorded to contextualize responses. Questions employed Likert scales and multiple-choice formats, including background variables (gender, school, living situation) and explicit items about respondents' food waste habits. The questionnaire included open questions to capture suggestions for reducing food waste and experience with existing interventions.

2.3. Respondents

A total of 26 vocational students participated in the interviews. Most respondents are between 16 and 23 years old. The majority live with their parents, while a smaller group lives independently, with a partner, or in shared student housing. Participants represent a wide range of study programs, including Hospitality, Metalworking and Welding, Administration, Teaching Assistant and Kitchen management. Several respondents combine studying with part-time work, for instance in the hospitality, technology, or food industries. The group is diverse in background and place of residence, with participants living in different Dutch cities, both larger (e.g., Amsterdam) and smaller (e.g., Lelystad, Dronten, Tiel, Culemborg, Wageningen). Most respondents are female, although several male students participated, particularly in the more technical study programs.

A total of 188 students participated in the survey. In total, 137 of these identify as female, 42 as male and 5 as other. Respondents are between 15 and 23 years old (average: 18). Most respondents (87.3%) live with their parents; the remaining live with friends, housemates or a partner, or have other living arrangements. Participants were recruited from four different vocational education institutes, although more than 60% of respondents were recruited from one of these schools. The institutes are geographically dispersed but all located in the middle and eastern parts of the Netherlands. Students follow a range of educational programs, including Hospitality and Bakery, Health and Welfare, and Events and Recreation.

2.4. Analysis

Interviews were analyzed thematically, combining deductive and inductive elements. The COM-B dimensions served as the primary organizing structure, but the researchers remained open to inductive themes emerging from participants' accounts, particularly where recurring meanings, exceptions, or context-specific issues appeared.

The coding process was collaborative: both authors coded the transcripts independently, after which they compared their coding to examine overlap and differences, and establish consistency in interpretation. We did not calculate intercoder agreement, as the goal of the analysis was interpretive depth rather than quantitative measurement of coder consistency. Disagreements were resolved through discussion until consensus was reached, thereby improving the coherence and credibility of the thematic interpretation.

The survey was designed as a supportive component within a broader qualitative research design aimed at capturing patterns, tendencies, and contextual variation in experiences and behaviors, rather than as a hypothesis-testing instrument. Therefore, we analyzed the questionnaire data primarily using descriptive statistics, including frequencies and percentages, reflecting the exploratory nature of the study. Nevertheless, we did conduct a limited number of exploratory subgroup comparisons to examine whether food waste-related attitudes and practices differ across key sociodemographic characteristics, specifically gender (we only compared men and women: respondents identifying as other or preferring not to state their gender were not included because these groups were too small for meaningful statistical testing), living arrangements, and educational domains (we grouped students' study programs in the following way: (1) Animal Care and Management, (2) Healthcare, (3) Food, (4) Hospitality and Services, and (5) Technology and Environment). As all respondents are vocational students, age differences were too small to make any meaningful comparisons. Also, the number of vegans, pescatarians and vegetarians was too small to make sensible comparisons with omnivores. Likert-scale items were coded from 1 (strongly disagree) to 5 (strongly agree), with higher scores indicating stronger agreement with the item as worded. Because subgroup sizes were unequal, we used Welch independent-samples t-tests to compare groups. For comparisons across educational domains, one-way analyses of variance (ANOVA) were used. We assessed statistical significance at $\alpha = 0.05$. Due to unequal subgroup sizes, findings should be interpreted cautiously and primarily as exploratory indications rather than as generalizable patterns. Please note that we only mentioned the results of subgroup comparisons when significant differences were found.

3. Results

3.1. Behavior

The questionnaire findings show that many students engage in waste-reducing practices, although inconsistently. Approximately a third of questionnaire respondents admitted to throwing away food they dislike; 41% of respondents state that they do not do that. Questionnaire respondents use various approaches to limit food-waste, although some are more involved than others. For instance, 78% report saving leftovers for later. Moreover, about three quarters strongly disagree with the statement: "I throw away lunch if I have bought something else". This indicates that most students do *not* throw away their lunch in this situation. A group of almost the same size considers how much food is needed before preparing meals and 65% argues that they do not buy more food than necessary. Moreover, most students portray thoughtful disposal habits: 58% of questionnaire respondents state that they do not throw food away without thinking. Exploratory comparisons between educational domains reveal a significant difference for the statement "When I bring food to school, there is sometimes food left over" ($p = 0.006$): Post hoc analyses shows that students in Food programs report leftover food less frequently than students in Animal Care and Management ($p = 0.020$) and Hospitality and Services programs ($p = 0.007$). Subgroup analysis also indicates that male students are more likely than female students to report serving themselves exactly enough food ($p = 0.009$) whereas female students report slightly higher agreement with throwing away lunch after purchasing another food item ($p = 0.023$).

Besides waste-conscious behavior, respondents also describe challenges such as forgetting food or allowing products to expire, suggesting that waste often results from everyday routines rather than deliberate disregard.

The interview data provide further insight into how these everyday behaviors emerge in practice. Students' everyday food-related behaviors reveal a pattern of small, routine practices that unintentionally contribute to food waste. Hence, while some participants express that they 'almost never' waste food, concrete examples shared during the interviews demonstrate that in practice waste occurs frequently. A common behavioral driver of waste is forgetting food or leaving it unused for too long. Several students describe finding spoiled items in their bags or refrigerators after having planned to eat them later. One student reports: *"I recently took a rotten banana out of my bag. I had thought, I'll eat it tomorrow"* (R21). Another student encountered molded bread after being away for the weekend: *"It was completely moldy. . . I had forgotten about it. I don't like seeing that, so I threw it away with a trash bag so I wouldn't have to touch it"* (R28). These examples show how postponing consumption, combined with busy schedules and irregular routines, often leads to items being discarded. Similarly, students frequently mention behavior related to storage. Items left in warm or unsuitable conditions are often thrown out due to safety concerns or perceptions of contamination. One student describes discarding bread rolls that had been in her bag all day: *"I didn't eat the rolls I brought to work. I thought they'd been in the sun all day, wet and dirty, so I threw them away"* (R18). Another respondent explains that she refused to eat a warm chicken sandwich that had been in her schoolbag: *"I leave it in my bag and the next day I throw it away. Warm chicken filet feels unsafe, then you'll get a fat case of salmonella"* (R22). These examples show how health and hygiene concerns, especially around perishables, strongly shape waste behavior.

Leftovers also play a central role in food-wasting behaviors. Several students discard small amounts left on their plate after dinner: *"Yesterday I threw away small leftovers from my plate. If it's just a tiny bit, which you can't really heat up, it goes in the bin"* (R22). Others highlight behavioral patterns around overserving or losing appetite: *"Every day with dinner, a tiny bit stays on the edge of my plate"* (R10). In many cases, the leftover sizes are perceived as too small to store, indicating that habits around portioning and judging quantities remain significant challenges. Also, some participants waste food due to taste, convenience, or sudden loss of interest in what they had brought or purchased. One respondent admits having discarded a sandwich simply because he no longer felt like eating it: *"I still had it. . . I wanted to throw it away. . . I just didn't feel like it anymore"* (R17).

Some students engage in behavioral strategies to reduce waste, such as eating leftovers or sharing with pets or family members: *"If I come home with food I haven't eaten, I usually give it to my dog or eat it myself. . . mostly to my dog, because I don't feel like it anymore"* (R7). Others intentionally consume leftovers during next day's lunch: *"If something is left, I eat it the next day"* (R9). These examples indicate that students do not reject leftovers in principle. Rather, their use is inconsistent and dependent on convenience, taste, or home routines.

Bread appears to be the most frequently wasted product, not only because it is often forgotten, gets dry and becomes unwanted, but also due to the simple fact that bread is a common food item students bring to school. *"Bread that's past the date. . . I didn't eat it and forgot to use it the next day. It had gone completely moldy"* (R28), one student notes, while another discards bread whenever he lacks appetite: *"I always throw away bread if I don't feel like eating it"* (R26). This pattern reflects a combination of behavioral elements like irregular meal routines and fluctuating appetite.

Finally, working in food-service exposes students to significant structural waste flows that can influence how they understand and evaluate waste. One student working in a bakery describes: *"Large bins fill up completely with food. . . mis-production, dough that*

isn't spread properly. . . it's all thrown away" (R29). Another hospitality worker expresses something similar: *"At Van der Valk [restaurant chain], always a lot of food is thrown away"* (R18). Such experiences not only expose students to large-scale waste but also evoke mixed reactions: while some grow accustomed to it, others express discomfort or frustration, indicating that professional environments influence their attitudes in complex ways.

Overall, students frequently waste small portions, perishables, and items forgotten in bags or refrigerators. This behavior is shaped by convenience, fluctuating appetites, food safety concerns, and irregular schedules. And while some participants express intentions to waste less, everyday habits and contexts often work against those intentions.

3.2. Capability

We defined the capability to prevent food waste as consisting of (1) an awareness of food waste as problematic, (2) waste-related knowledge and skills, (3) skills around cooking, and (4) the handling of leftovers. These three dimensions are closely interconnected: while awareness forms the basis for recognizing food waste as problematic, both knowledge and practical skills determine whether students are able to act upon that awareness in daily life. Thus, although we separated the dimensions analytically, they continuously interact in students' everyday food practices.

Interview respondents demonstrate limited awareness about why food waste can be considered problematic. Asked about reasons to reduce waste, one student states plainly: *"None"* (R10). Another says: *"I don't really know why it's such a big problem. . . is it harmful? Or just wasteful? I think it's just wasteful because of the production. But I don't know"* (R11). Hence, while the respondent acknowledges wastefulness, they simultaneously express uncertainty about its importance. Other respondents show partial awareness by connecting waste to tangible consequences like money or broader (societal, environmental) impacts. For example, one respondent sees it as *"a waste of money"* (R11), while others hint at moral unease or ethical discomfort. Interviews also reveal limited exposure to education or discussion about food waste causes and impacts. Many students indicate that the topic rarely comes up at home or school, contributing to their ambivalence. This contrasts with the questionnaire findings, as 73.6% of respondents agree or strongly agree that reducing food waste is important because it benefits the environment, suggesting that awareness may be broader than interview responses indicate.

Turning to waste-related knowledge and skills, questionnaire respondents state that they have a general familiarity with food storage rules and that they rely on sensory checks to judge edibility. A large majority answer that they know what foods need refrigeration (84%) and that they can assess food quality by sight, smell, or taste (82%). Interviews confirm these findings: most respondent rely primarily on their senses—smelling, looking, tasting—to determine whether food is still safe to eat. This reliance on intuitive judgment is expressed consistently. One student explains: *"first smell it and check if you can see anything wrong, and then just taste a small piece and if it's fine, you can still eat it"* (R18). Another states: *"I smell and look at it"* (R28). Several students rely almost entirely on tasting, such as R7 who says, *"I just taste it, put it in my mouth and see if it still tastes good"*, and R10 who states, *"Just eat it and see if it's nice"*. Some respondents apply different strategies depending on the type of product. One student, for instance, judges fruits and vegetables mostly by appearance, while handling meat with more caution: *"If it looks good, then it's fine. . . but if it's past its use-by-date I quickly throw it away"* (R16). Others adjust their judgment depending on texture or smell, such as R20: *"You notice it from the smell or if it has a strange texture"*. Several students explicitly mention checking consistency, particularly for dairy. R21 checks whether yogurt is *"too liquid to be safe"*. Nevertheless, although sensory assessment appears to be widespread, students differ in the confidence and consistency with which they apply these

checks. Those who feel less certain tend to rely on parents. One respondent directly calls their mother: *"I ask my mother. . . I don't think about those things myself"* (R11). Such responses suggest that where many students act confidently, others lack independent judgment and rely on household guidance.

Besides sensory checks, knowing the difference between 'best before' (THT: 'ten minste houdbaar tot') and 'use by' (TGT: 'te gebruiken tot') dates is also part of knowledge and skills. Just over two thirds of questionnaire respondents (69%) state to know this difference, but interviewees display more limited knowledge. Some interviewees think that the labels refer to the same thing, or are unaware that multiple types of dates exist: *"I honestly didn't know that existed. . . I just see a date and throw it away"* (R23), and *"I wouldn't know. . . I really wouldn't know"* (R22). Moreover, students who do recognize the abbreviations often lack understanding of their intended use. For example, one respondent says, *"I knew the meaning but not the difference"* (R14). A smaller subset displays a more nuanced understanding. One student explains: *"With THT it's usually still good after. With TGT, especially on meat, it's risky after that"* (R19). These students, however, are exceptions. This confusion around date labels appears to represent an important capability gap, as uncertainty regarding food safety may contribute to the premature disposal of still-edible food products, particularly long-lasting items.

Cooking and meal planning skills vary among respondents. More than half of the questionnaire respondents state that they can estimate grocery needs well (57.5%), and a slightly larger share expresses confidence in reusing leftover food (62.2%). That said, most interviewees rarely cook and thus have limited or minimal cooking skills: *"I rarely cook"* (R7), and *"I never cook, my parents always do it"* (R10). Some students talk about parental restrictions, such as, *"I can't cook; my mother doesn't want me in the kitchen"* (R11), while others admit to having limited skills, for instance saying they can *"fry an egg, but that's not really cooking"* (R19). Only a few respondents report more advanced skills or experience from, for instance, working in a kitchen. One respondent shared: *"I think (I cook) about 7 times a week. Just every day"* (R16). However, this respondent appears to be an exception rather than the norm among the interviewed students.

Finally, the capability to handle leftovers also reflects substantial variation. Some students approach leftovers with consistency and planning. One respondent explains: *"Either I freeze it or keep it in the fridge for lunch the next day. I rarely throw away prepared meals."* (R31). Another states, *"We always eat them straight away"* (R7). Several respondents keep leftovers in containers in the fridge, even if not always consumed: *"We keep them in the fridge. . . sometimes someone eats them, but usually it still gets thrown away"* (R11). Others reference systematic household routines, such as freezing leftover meals: *"If it's still in the pan, we freeze it for my mother's work"* (R14), or saving leftovers specifically for *"leftover day"* (R20). Note, however, that most of these respondents talk about household routines rather than personal routines. Hence, interview respondents especially show limited practical food-management capabilities; most of them remain highly dependent on parents or avoid cooking and leftover consumption altogether.

In sum, students demonstrate limited awareness of food waste as a problem and a partial but inconsistent capability to manage food in ways that reduce waste; while many rely confidently on sensory judgment, there is confusion around date labels, and students show uneven cooking skills and limited autonomy around leftovers.

3.3. Opportunity

Opportunity to minimize waste can be divided into (1) social opportunity (provided by the social environment), and (2) physical opportunity (afforded by the physical environment). While we analyze these dimensions separately, in practice they are interrelated. For

example, school environments can simultaneously shape waste behavior through material facilities (e.g., storage or portion sizes) and through social influences such as norms, peer behavior, or educational guidance.

Starting with the social environment, the questionnaire data show that students feel only limitedly supported to reduce waste: around half of them do not perceive their school or household members as actively encouraging reducing waste. That said, students in food programs report significantly lower agreement with the statement “My school encourages students to waste less food” than students in Animal Care and Management ($p = 0.001$) and Healthcare programs ($p = 0.009$). Furthermore, students living with their parents report more often than students living independently that they receive reminders from parents or housemates to reduce food waste ($p = 0.008$, $d = 0.65$).

Indeed, several interviewed students describe the impact of family habits, routines and social norms, indicating that opportunities to reduce waste are shaped not only by individual choices, but also by observing and responding to the social environment. R30 reflects, for instance: *“It helps that my mother is very aware. . . so I also try to be careful myself”* (R30). Parental guidance is sometimes more directly influential: *“My mother said: some things you can throw away, some things you can just keep”* (R23). Across interviews, students report variation in household attention to food waste: some describe homes where food is carefully used and waste is avoided as much as possible, while others report that waste is rarely discussed or problematized. Interviewees occasionally mention peer influence, particularly in the context of eating together: some note informally following what their friends do with leftovers or food scraps. School-level encouragement is rarely mentioned, suggesting that institutional social support is minimal. Social opportunity therefore appears to emerge primarily through parental guidance, household routines, and informal peer norms rather than through explicit school-based encouragement.

The picture of the physical environment is varied. Over two-thirds of questionnaire respondents have sufficient space at home to store food properly (e.g., fridge, freezer, kitchen cupboard) and have access to appropriate storage supplies. In interviews, students discuss waste-reducing opportunities in the school itself. One student notes, for instance: *“The school canteen makes fewer sandwiches, only on request. . . I’m proud of that approach”* (R28). However, apart from this remark, students only talk about physical school-level interventions that *could* help them reduce food waste—rather than about opportunities that already enable them to do so. Although such reflections are speculative—some wishful thinking is involved—they do help us understand which opportunities are absent. Physical opportunities mentioned relate mainly to material and organizational conditions such as packaging sizes, storage possibilities, canteen practices, and food availability. Many students suggest, for instance, that schools or canteens can help by adjusting portion sizes or offering smaller packaging. One student highlights: *“Maybe smaller packaging for items that go bad quickly, like dairy or meat, but keeping the same price per kilo/liter”* (R31). Others emphasize improving the appeal of available food: *“Offer tastier food. . . then people might eat it instead of throwing it away”* (R7). Suggestions also include giving incentives or reducing food prices near expiration, to encourage consumption before spoilage, or awareness-raising activities: *“Make the bins clear for leftovers. . . and maybe make a lesson of it, explain why”* (R20).

As product prices (partly) determine how much people buy, financial considerations are also related to the physical environment: lower prices may stimulate the sale of (too) much food, but may also help selling food that is about to reach its use-by date. About a fifth of questionnaire respondents state that they purchase larger portions because of cost savings despite potential waste: almost twice as many students do not do that. Awareness of food-waste-reducing tools, such as Too Good To Go or supermarket discount initiatives,

is limited but varied. Some students are regular users and express enthusiasm: *“Too Good To Go, yes”* (R7) and *“I like the surprise box”* (R4). Yet, many respondents have never tried using such food waste reductions platforms, or are not aware of them. Limited awareness thus restricts students’ abilities to engage with accessible waste-reduction mechanisms.

In sum, questionnaire respondents perceive social support from school or household for reducing food waste to be limited, while interviews highlight the formative role of family habits and guidance. At the physical level, opportunities at home appear relatively strong, but school environments provide few concrete enablers, with students mainly identifying absent facilities and policies and suggesting improvements.

3.4. Motivation

We define motivation as consisting of two interlinked aspects: (1) attitudes and values, and (2) personal norms and emotions. Table 1 shows that questionnaire data highlight generally positive attitudes and values toward food waste reduction, alongside some ambivalence. Most students (78%) agree that avoiding food waste is important, and 71% recognize its environmental significance. Almost half (42%) of questionnaire respondents argue that their efforts can make a difference. That said, a large group remains uncertain and a notable minority doubts the problem’s seriousness, with 22% agreeing that food waste issues are sometimes exaggerated. Intergroup comparisons reveal that women are significantly less likely than men to agree that food waste problems are sometimes exaggerated ($p = 0.024$).

Table 1. Questionnaire responses to a number of statements on food waste, in percentages (N = 188).

	(Strongly) Disagree	Neutral	(Strongly) Agree
I think it is important to prevent food waste	4	19	78
I think it is important to waste less food because it is better for the environment	4	25	71
I believe that my efforts to reduce food waste can make a difference	14	44	42
I feel that the problem of food waste is sometimes exaggerated	40	38	22
I feel guilty when I throw away food	26	27	47
Food waste is unacceptable to me	21	55	23
I finish everything on my plate, even if I don’t like it that much	33	22	45
I throw away food without thinking much about it	57	22	20
I think food waste leads to unnecessary costs	4	29	68

While interviewees corroborate this variation, respondents do give a range of reasons to diminish food-waste. Some of them mention practical reasons for not wasting food, especially saving money: *“Self-bought food, because I paid for it myself. I think it is a waste of money to throw it away”* (R28). Others connect food waste to global issues such as climate change, resource scarcity, and world hunger, and mention ethical or environmental considerations, for instance R25: *“Animals, I think, because they were slaughtered for it”*. Such accounts indicate that a subset of students clearly conceptualize food waste as part of a larger moral and ecological problem. Some respondents ground their motivation in a sense of responsibility for the production chain. One student emphasizes the labor and resource intensity behind specific foods, especially animal products: *“I mainly think it’s a waste of the initial production, of making the food. Because for some products, the production process is either*

very long or an expensive process, which makes it a shame if you throw it away. After all, you also pay money for it. If you go to the store now for a kilo of chicken, you've spent ten euros. It's such a shame if you then throw half a kilo of it away because you don't eat it" (R11). Overall, these findings reveal substantial diversity in the extent to which students feel responsible for reducing food waste and the factors they consider meaningful, showing on the one hand ethical and environmental considerations and on the other more pragmatic or financial concerns, while, for some respondents, motivation to prevent waste appears more limited or absent.

Moving to personal norms and emotions, the table shows that while nearly half of the questionnaire respondents feel guilty when wasting food and many aim to finish their plates, a sizable portion remains neutral or less engaged, indicating variable internalization of waste prevention values. Indeed, several interview respondents express discomfort with leftovers: *"I don't really like eating leftovers. . . today is fine but after that not really"* (R12). Others discard leftovers depending on taste or preference, such as: *"If it tastes good, I keep it in the fridge or take some home in a container."* (R21). Nevertheless, interviewees show various motivations for trying to reduce food waste. First, financial motivations are an important driver to avoid waste. One respondent summarizes this as such: *"Money, man. Only money"* (R13). Another student emphasizes that when they have to pay for food themselves, it directly influences their behavior: *"If I have to pay for it myself. . . then I pay more attention"* (R22). This pragmatic orientation also surfaces among students who otherwise do not reflect extensively on environmental or ethical issues. For these participants, the monetary cost of food is a clear and tangible motivator, even if other motivations are less salient. Second, some students describe motivations that are tied to religious or moral beliefs, such as *"Other people have less, right? And Allah will punish me"* (R9). Here, food waste is positioned within a moral-religious framework in which wasting food is seen as socially unjust and spiritually discouraged. Third, a number of respondents frame their motivation to avoid waste as rooted in personal habits or household norms. One participant explains, *"Just eat your food. That's my reason"* (R7), suggesting a simple but strong internalized rule. Another respondent states: *"My husband is very much against wasting food. So we eat everything; almost nothing gets thrown away at our place"* (R30). Especially in this last case, motivation is shaped relationally, and food practices are influenced by shared household values rather than individual beliefs. This illustrates that routines and upbringing can shape motivation even without explicit ethical reasoning. Finally, some respondents connect their motivation to their educational background. One respondent studying a food-related program highlights how waste feels inconsistent with their professional identity: *"I feel really guilty. . . I am taking this course and it's relevant. I always think, should I buy a smaller package?"* (R31). Occupational or educational identity can thus reinforce motivation, particularly when students perceive food waste as incompatible with their training.

Overall, motivations to prevent food waste vary widely among students. While some hold strong ethical or environmental motivations, others are driven primarily by financial considerations or household norms. A number of students express limited motivation or uncertainty, or discomfort with eating leftovers, while for others convenience or habits play a more prominent role than waste reduction itself. Together, these diverse accounts highlight that motivational levers for reducing food waste among young adults are far from uniform, so that interventions may need to address multiple, sometimes competing, underlying beliefs and priorities.

4. Discussion and Conclusions

This study used an exploratory approach to understand how students of vocational education perceive and interpret their food waste behavior, with a specific focus on their

knowledge, skills, and perceptions of food waste, how living conditions and social environments shape their capabilities and opportunities for reducing food waste, and what motivates or hinders potential waste-reducing behavior. Using the COM-B model [25,26] as an analytical lens, our work shows that food waste among this group emerges from the interaction between capability, opportunity and motivation, within the context of everyday routines. The behavioral patterns identified demonstrate that food waste largely consists of incremental, routine losses (e.g., small leftovers, moldy bread, forgotten fruit, discarded sandwiches). This aligns with prior research suggesting that household food waste is embedded in everyday practices rather than driven by explicit disregard [9,28]. Moreover, young people's busy lifestyles, irregular schedules and transitional living arrangements [8,11] may contribute to situations in which food is postponed, forgotten, left unused, or perceived as unsafe. The exploratory survey findings provide some support for this interpretation and show that although food waste-related behavior appears across all student groups, students in food-related programs report significantly fewer leftovers from food brought to school than students in other educational domains studied. This suggests that educational context and exposure to food-related practices can influence specific waste-related routines.

Respondents demonstrate a moderate capability to reduce food waste. While many rely on sensory judgment to assess food quality and report familiarity with storage practices, there is confusion around the distinction between 'best before' and 'use by' dates. This aligns with earlier research indicating that young adults often use experiential rather than formal knowledge in food management [14]. Cooking and planning skills are uneven but largely absent, and strongly shaped by living arrangements. Given that habit formation around food behavior is particularly salient between ages 16 and 23 [15,16], limited responsibility for food provisioning at home may delay or constrain the development of waste-reducing routines.

Findings around the opportunity to reduce food waste reflect the importance of the social and physical context, which is emphasized in previous food waste studies as well [8,9]. Social support for reducing waste appears limited, which is noteworthy, given that social norms and shared routines are known to shape household food practices. The finding that students often mention absent facilities in relation to the school environment, supports earlier findings that environmental constraints can inhibit waste-reducing behavior even when motivation is present [8,9]. The quantitative findings further suggest that students experience school support differently depending on their educational domain, with students in food programs reporting lower agreement with the statement that their school encourages food waste reduction than students in Animal Care and Management and Healthcare. While exploratory, this finding indicates that perceptions of institutional support may vary across educational contexts.

Motivation to reduce food waste is present but heterogeneous. Although a majority of questionnaire respondents recognize food waste's environmental relevance—reflecting the broader societal framing of food waste as a sustainability issue [1,3,5]—this understanding does not consistently translate into behavior. This gap between awareness and practice echoes earlier research among young adults [10,11]. Moreover, we found that while financial considerations appear to function as a more concrete motivator for some students, food safety concerns frequently override waste-reduction intentions. This implies that different motivations operate simultaneously and can be in opposition to one another. For the future, it might be useful to further unpack how varying motivations interact in shaping young people's food waste behavior. In fact, the COM-B model offers a helpful distinction between reflective and automatic motivations in that respect. Our work suggests that while reflective motivations are present—e.g., around environmental values, concerns about

costs, and risk aversion in relation to food safety—automatic motivations, such as habits, convenience, changing schedules, and everyday routines, frequently override these.

The exploratory subgroup comparisons support the qualitative finding that household context matters, but also show that this influence is selective rather than universal. Students living with parents differ from those living independently on some practical food-management items, particularly having insufficient time to finish lunch between classes and receiving reminders from household members about reducing food waste. We also found a number of statistically significant gender differences, although these do not point towards one clear behavioral pattern: most questionnaire items do not show statistically significant differences, and gender differences are not consistent across the survey. We did find a small number of differences between educational domains. These are limited to specific items and do not indicate fundamentally different attitudes towards food waste. Nevertheless, they suggest that educational context influences food-related routines and perceptions. This is consistent with interview findings showing that some students draw on experiences from food-related education, internships, or work environments when reflecting on food waste. Most questionnaire items, however, do not show statistically significant subgroup differences, suggesting that broader attitudes towards food waste are shared across much of the sample. In sum, the subgroup comparisons indicate that living arrangement, gender and study program may shape specific routines and experiences surrounding food management, although many underlying attitudes appear relatively consistent across groups. Future research could examine the influence of these variables more systematically.

Our findings reiterate that food waste behavior among vocational students cannot be understood by looking at capability, opportunity or motivation in isolation, as the three elements reinforce and influence one another. Many students live with their parents and therefore have limited responsibility for shopping, cooking and food storage, which restricts the development of practical food management skills and routines. At the same time, food waste receives little explicit attention within both the home and the school environment, which again reduces the social opportunity to learn, discuss and normalize waste reduction practices. The finding that the school context offers few physical opportunities to reduce waste, such as fridges or reheating facilities, means that even when students do express concern about food waste, it is difficult to act upon these concerns. Hence, behavior appears to be associated with a context in which capability development is partial, physical opportunities are limited and the social context is, while not hostile, not overly stimulating either, meaning that latent motivations are easily overridden by practical considerations. This interaction between underdeveloped skills, limited environmental support and competing motives may help explain why food waste persists as part of an everyday routine rather than an intentional choice.

This study suffers from several limitations. First, both the interviews and the questionnaire rely primarily on self-reported behavior, which may have resulted in social desirability bias and an underestimation of actual food waste practices. In some instances, the data indeed seem to suggest such a bias, as the answers of questionnaire respondents at times seem more socially desirable than those of interview respondents. The findings should therefore be interpreted as insights into perceptions, routines, and reported behavior rather than precise measurements of actual food waste quantities. Second, the quantitative sample is unevenly distributed: more than 60% of respondents come from a single vocational education institution and most respondents are female. (While a large majority of respondents live with their parents, this reflects the actual situation and is therefore not as such a bias). These characteristics may have influenced the patterns observed in the data, which means that the subgroup analyses should be interpreted with caution. Third, the questionnaire

component remained largely exploratory in both its design and analysis. The survey was intended primarily to complement the qualitative interview findings rather than to function as a standalone explanatory instrument. Consequently, the quantitative analysis focuses mainly on descriptive statistics and exploratory subgroup comparisons, rather than on systematically examining correlations or causal relationships between COM-B dimensions and socio-demographic variables. Although this approach aligns with the exploratory nature of the study, it limits the ability to identify stronger behavioral patterns or draw robust conclusions about subgroup differences. In sum, the statistical findings should be regarded as tentative patterns that support the qualitative interpretations rather than as robust, generalizable evidence of group differences. This caution is particularly relevant for the observed differences between educational domains. Although several ANOVA results reached statistical significance, the unequal distribution of respondents across programs and institutions means that these findings should primarily be viewed as exploratory indications warranting further investigation. Future research could build upon this study through larger and more balanced samples, comparative subgroup analyses, and more objective measurements such as food diaries or waste-weighing methods.

A major strength of the study is that where several projects studying food waste amongst the youth focus on university students or treat young adults as a homogeneous category (e.g., [8,10]), our work focuses on vocational students, a group often overlooked in research. Our findings suggest that vocational students occupy a distinct position within youth food waste research: they display variable but limited cooking skills and their behavior is strongly shaped by household context. Indeed, living with parents influences both capability development and opportunity structures, distinguishing these from more independent student populations more frequently studied in the literature. This suggests that parents, the parental home and practices of the household may be more important than perhaps assumed when discussing youth and their behavior. Therefore, we recommend that interventions aimed towards vocational students focus on improving enabling environments rather than relying solely on ethical or environmental messaging. Potential interventions include improving facilities for storing and reheating food at school, encouraging flexible portion sizes in canteens and integrating practical food-management skills into vocational curricula.

Our findings also have broader sustainability implications. Vocational students are not only consumers, but also future professionals working in sectors connected to food provisioning, hospitality, retail, healthcare, and food production. Indeed, some respondents encountered (large-scale) food waste directly through internships or part-time employment in hospitality, bakeries, retail, or food production. The ways in which they learn to perceive and normalize food waste during education and workplace training may influence sustainability practices beyond the household level. This highlights the importance of embedding food waste reduction and sustainable food practices structurally within vocational education and practice-based learning environments.

In conclusion, food waste among vocational students is best understood as the outcome of interacting capabilities, opportunities and motivations situated within everyday practices. By focusing on this specific and previously understudied group, this study contributes to a more differentiated understanding of youth food waste. We show that vocational students' food practices are strongly shaped both by their dependence on the parental household and to a lesser extent by exposure to professional food-service environments through vocational education and part-time work. Rather than resulting primarily from intentional disregard for sustainability, food waste often emerges from routine practices, changing schedules, convenience, and uncertainty surrounding food safety and storage. The findings therefore suggest that reducing food waste among vocational students requires

more than increasing awareness alone. Supporting practical food-management capabilities, strengthening enabling environments, and embedding food waste more structurally within vocational education and workplace learning may offer more effective pathways for behavioral change. In this way, vocational education may represent an important but currently underexplored setting for advancing broader sustainability transitions in food systems.

Author Contributions: Conceptualization, Y.M.S. and E.J.V.; methodology, Y.M.S. and E.J.V.; formal analysis, Y.M.S. and E.J.V.; writing—original draft preparation, Y.M.S. and E.J.V.; writing—review and editing, Y.M.S. and E.J.V.; supervision, Y.M.S.; project administration, Y.M.S. funding acquisition, E.J.V. All authors have read and agreed to the published version of the manuscript.

Funding: This research was funded by the Municipality of Almere, grant number 21000270 and by Het Nationaal Groeifonds, grant number: ODPPSB-23. The APC was funded by MDPI Sustainability.

Institutional Review Board Statement: Ethical review and approval were waived for this study due to in the Netherlands, formal review by a Medical Research Ethics Committee (METC/IRB) is only mandatory for studies that fall under the Dutch Medical Research Involving Human Subjects Act (Wet medisch-wetenschappelijk onderzoek met mensen; WMO).

Informed Consent Statement: Informed consent was obtained from all subjects involved in the study.

Data Availability Statement: Data are not publicly available due to privacy.

Acknowledgments: The authors would like to thank all students who participated in and supported the interview process. We are especially grateful to Simon Wandel, Els Timmer, Pooja Rawal, Zaniyah Fahmi Firdaus, Anthonie Meinema, Nicole Kleine Staarman, Jacqueliën Schuurman, Sandy Jotzer, and Barbara Ganseman for their valuable contributions and assistance in making this study possible. We also thank our colleagues from the mbo institutions who helped us perform this study, and Sara Smaal and the MAP project colleagues for inspiration for this work.

Conflicts of Interest: The authors declare no conflicts of interest. The funders had no role in the design of the study; in the collection, analyses, or interpretation of data; in the writing of the manuscript; or in the decision to publish the results.

References

1. FAO. *Global Food Losses and Food Waste: Extent, Causes and Prevention*; Food and Agriculture Organization of the United Nations: Rome, Italy, 2011.
2. United Nations Environment Programme. *Food Waste Index Report 2024*; United Nations Environment Programme: Nairobi, Kenya, 2024. Available online: <https://www.unep.org/resources/publication/food-waste-index-report-2024> (accessed on 14 January 2026).
3. European Commission. Food Waste. Directorate-General for Health and Food Safety: Brussels, Belgium. Available online: https://food.ec.europa.eu/food-safety/food-waste_en (accessed on 20 January 2026).
4. United Nations Framework Convention on Climate Change. Food Loss and Waste Account for 8–10% of Annual Global Greenhouse Gas Emissions; Cost USD 1 Trillion Annually. Available online: <https://unfccc.int/news/food-loss-and-waste-account-for-8-10-of-annual-global-greenhouse-gas-emissions-cost-usd-1-trillion> (accessed on 20 January 2026).
5. United Nations Environment Programme. *Food Waste Index Report 2021*; United Nations Environment Programme: Brussels, Belgium, 2021. Available online: <https://www.unep.org/resources/report/unep-food-waste-index-report-2021> (accessed on 22 January 2026).
6. Eurostat. Food Waste: 132 kg per Inhabitant in the EU in 2022. 2024. Available online: <https://ec.europa.eu/eurostat/web/products-eurostat-news/w/ddn-20240927-2> (accessed on 3 February 2026).
7. van Lieshout, L.; Knüppe, J. *Voedselverspilling bij Consumenten Thuis in Nederland in 2022*; Voedingscentrum: Den Haag, The Netherlands, 2023.
8. Clement, J.; Alenčikienė, G.; Riipi, I.; Starkutė, U.; Čepytė, K.; Buraitytė, A.; Zabulionė, A.; Šalaševičienė, A. Exploring Causes and Potential Solutions for Food Waste among Young Consumers. *Foods* **2023**, *12*, 2570. [CrossRef] [PubMed]
9. Graham-Rowe, E.; Jessop, D.C.; Sparks, P. Identifying Motivations and Barriers to Minimizing Household Food Waste. *Resour. Conserv. Recycl.* **2014**, *84*, 15–23. [CrossRef]

10. Richardson, R.; Prescott, M.P.; Ellison, B. Impact of Plate Shape and Size on Individual Food Waste in a University Dining Hall. *Resour. Conserv. Recycl.* **2021**, *168*, 105293. [CrossRef]
11. Manika, D.; Iacovidou, E.; Canhoto, A.; Pei, E.; Mach, K. Capabilities, Opportunities and Motivations That Drive Food Waste Disposal Practices: A Case Study of Young Adults in England. *J. Clean. Prod.* **2022**, *370*, 133449. [CrossRef]
12. Zhang, H.; Li, S.; Wei, D.; He, J.; Chen, J.; Sun, C.; Vuppalladiyam, A.K.; Duan, H. Characteristics, Environmental Impact, and Reduction Strategies of Food Waste Generated by Young Adults: Case Study on University Canteens in Wuhan, China. *J. Clean. Prod.* **2021**, *321*, 128877. [CrossRef]
13. Grainger, M.J.; Aramyan, L.; Piras, S.; Quested, T.E.; Righi, S.; Setti, M.; Stewart, G.B. Model Selection and Averaging in the Assessment of the Drivers of Household Food Waste to Reduce the Probability of False Positives. *PLoS ONE* **2018**, *13*, e0192075. [CrossRef] [PubMed]
14. Bravi, L.; Francioni, B.; Murmura, F.; Savelli, E. Factors Affecting Household Food Waste among Young Consumers and Actions to Prevent It: A Comparison among UK, Spain and Italy. *Resour. Conserv. Recycl.* **2020**, *153*, 104586. [CrossRef]
15. Mumtaz, S.; Chu, A.M.; Attiq, S.; Shah, H.J.; Wong, W.K. Habit—Does It Matter? Bringing Habit and Emotion into the Development of Consumer Food Waste Reduction Behavior through the Lens of the Theory of Interpersonal Behavior. *Int. J. Environ. Res. Public Health* **2022**, *19*, 6312. [CrossRef] [PubMed]
16. Lizcano-Prada, J.; Ayoub, R.; Mesías, F.J.; Maestre-Matos, L.M. What Makes Consumers Behave Sustainably When It Comes to Food Waste? An Application of the Theory of Planned Behavior in Spain. *Foods* **2025**, *14*, 2306. [CrossRef] [PubMed]
17. Knezevic, B.; Kurnoga, N.; Anic, I.D. Typology of University Students Regarding Attitudes towards Food Waste. *Br. Food J.* **2019**, *121*, 2578–2591. [CrossRef]
18. Centraal Bureau voor de Statistiek. Welke Studierichting Volgen Studenten? Available online: <https://longreads.cbs.nl/nederland-in-cijfers-2022/welke-studierichting-volgen-studenten/> (accessed on 17 February 2026).
19. Centraal Bureau voor de Statistiek. Stages en Banen van Studenten in het mbo en ho naar cao en SBI, 2024/25. Available online: <https://www.cbs.nl/nl-nl/maatwerk/2025/51/stages-en-banen-van-studenten-in-het-mbo-en-ho-naar-cao-en-sbi-2024-2025> (accessed on 17 February 2026).
20. Kences. *Landelijke Monitor Studentenhuisvesting 2025*; Kences: Amersfoort, The Netherlands, 2025.
21. Cedefop. *Vocational Education and Training in Europe: Netherlands*; European Centre for the Development of Vocational Training: Thessaloniki, Greece, 2024. Available online: <https://www.cedefop.europa.eu/en/tools/vet-in-europe/systems/netherlands-u3> (accessed on 5 March 2026).
22. Hoveling, L.A.; Liefbroer, A.C.; Bültmann, U.; Smidt, N. Understanding Socioeconomic Differences in Incident Metabolic Syndrome among Adults: What Is the Mediating Role of Health Behaviors? *Prev. Med.* **2021**, *148*, 106537. [CrossRef] [PubMed]
23. Rijksinstituut voor Volksgezondheid en Milieu. Overgewicht | Opleiding. Available online: <https://www.vzinfo.nl/overgewicht/opleiding> (accessed on 10 March 2026).
24. Michie, S.; van Stralen, M.M.; West, R. The Behaviour Change Wheel: A New Method for Characterising and Designing Behaviour Change Interventions. *Implement. Sci.* **2011**, *6*, 42. [CrossRef] [PubMed]
25. Atkins, L.; Francis, J.; Islam, R.; O'Connor, D.; Patey, A.; Ivers, N.; Foy, R.; Duncan, E.M.; Colquhoun, J.; Grimshaw, J.M.; et al. A Guide to Using the Theoretical Domains Framework of Behaviour Change to Investigate Implementation Problems. *Implement. Sci.* **2017**, *12*, 77. [CrossRef] [PubMed]
26. Cane, J.; O'Connor, D.; Michie, S. Validation of the Theoretical Domains Framework for Use in Behaviour Change and Implementation Research. *Implement. Sci.* **2012**, *7*, 37. [CrossRef] [PubMed]
27. Stangherlin, I.D.C.; De Barcellos, M.D. Drivers and Barriers to Food Waste Reduction. *Br. Food J.* **2018**, *120*, 2364–2387. [CrossRef]
28. Evans, D. *Food Waste: Home Consumption, Material Culture and Everyday Life*; Bloomsbury Academic: London, UK, 2014.

Disclaimer/Publisher's Note: The statements, opinions and data contained in all publications are solely those of the individual author(s) and contributor(s) and not of MDPI and/or the editor(s). MDPI and/or the editor(s) disclaim responsibility for any injury to people or property resulting from any ideas, methods, instructions or products referred to in the content.