DETERMINANTS OF WASTEFUL FOOD CONSUMPTION BEHAVIORS OF YOUNG CONSUMERS IN HO CHI MINH CITY

Nong Thi Nhu Mai[1*], Tran Nguyen Tuong Vy[1], Tran Nguyen Truc My[1], Tran Thi Thuy Trang[1], Tran Phuc Bao Tran[1], Mai Dang Phuc[1]

[1]University of Finance - Marketing, Vietnam
[*]Corresponding author: Email: ntnmai@ufm.edu.vn

Received: April 29, 2025 *Accepted:* August 11, 2025 *Published:* November 25, 2025
DOI: 10.52932/jfmr.v3i5ene.927

Appendix 1. Research gap

Food waste represents a significant global challenge, yielding considerable adverse environmental, economic, and social consequences. This problem is particularly exacerbated in major urban centers such as Ho Chi Minh City (HCMC), where contemporary lifestyles and rapid urbanization drive unsustainable consumption patterns.

To begin, the authors identified keywords for database searches, including "Food waste behavior" and "Young adult." Selecting high-quality journals is considered essential to ensure the credibility of academic publications (Wallace & Wray, 2011); therefore, this study exclusively chose journals from the Scopus database - an esteemed and reputable source owned by Elsevier (Netherlands). To further delve into the complexities of food waste, 2,034 high-quality studies from the Scopus database were systematically reviewed. The research spans multiple time periods, offering insights into the evolution of food waste studies. Notably, 1,405 studies published between 2010 and 2025 highlight a surge in global awareness and urgency regarding food waste, reflecting growing concerns about sustainability and the need for intervention, especially in urban centers like Ho Chi Minh City. In comparison, the period from 2000 to 2010 contributed 536 studies, while studies before 2009 were limited to 93 studies, underscoring the sharp increase in research interest post - 2010. The research data was collected prior to January 2025. Subsequently, the study employed bibliometric analysis to statistically assess the body of published literature. This method, first introduced by Groos and Pritchard (1969), has since been widely adopted by various scholars. Bibliometric analysis is considered an approach that enables a deep understanding of the historical development of specific research fields, allowing researchers to explore scientific problems through the application of mathematical statistics to measure scholarly outputs (Raina & Gupta, 1998).

The statistical analysis of publications was supported by the VOS Viewer 1.6.18 software. These studies were carefully synthesized, and the bibliographic data was imported into VOS Viewer for analysis. A keyword co-occurrence analysis was applied, revealing interconnected relationships between key themes. This analysis not only highlighted the core connections but also pinpointed gaps in current research, particularly regarding the consumption behaviors of young adults, whose patterns remain insufficiently explored. Three main difficulties are highlighted in the results of running VOS Viewer: food waste, adults, and young adults *(see Appendix 1 online)*.

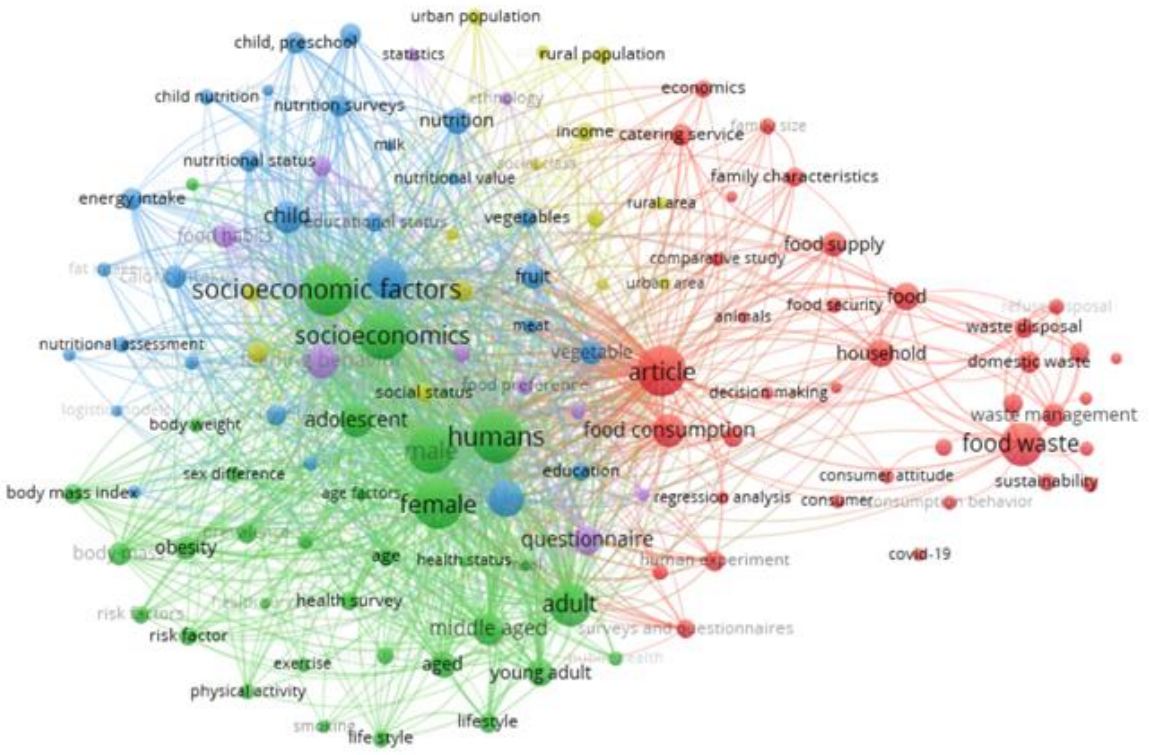
Table 1. Classification table of keyword groups in research

Group Name	Keyword Count	Keywords
Food consumption and waste	33	anaerobic digestion (55); animals (55); article (933); catering service (174); comparative study (88); consumer (83); consumer attitude (79); consumer behavior (107); consumption behavior (76); covid-19 (61); decision making (66); developing countries (57); domestic waste (168); economics (122); family characteristics (130); family size (104); food (278); food consumption (414); food security (92); food supply (220); food waste (660); household (270); household food (150); household food waste (159); human experiment (153); priority journal (152); procedures (58); psychology (102); refuse disposal (99);

		regression analysis (71); surveys and questionnaires (131); waste disposal (146); waste management (201)
Demographics and public health	33	adolescent (410); adult (671); age (108); age factors (80); aged (243); body mass (201); body mass index (145); body weight (85); exercise (75); female (934); health behavior (108); health status (59); health survey (139); health surveys (55); humans (965); life style (114); lifestyle (152); male (840); meal (59); middle aged (369); obesity (204); physical activity (100); physiology (67); prevalence (152); public health (83); risk factor (136); risk factors (121); sex difference (92); sex factors (92); smoking (69); socioeconomic factors (991); socioeconomics (864); young adult (272)
Impact of external factors on food consumption	28	caloric intake (209); child (367); child nutrition (95); preschool (181); children (57); diet (593); dietary intake (145); education (133); educational status (140); energy intake (180); fat intake (74); food frequency questionnaire (62); food intake (495); fruit (227); logistic models (57); meat (91); milk (57); normal human (76); nutrition (239); nutrition assessment (62); nutrition surveys (166); nutritional assessment (103); nutritional status (179); nutritional value (68); preschool child (174); statistical model (79); vegetable (229); vegetables (138)
Eating behavior and social factors	14	demography (187); fast food (181); fast foods (119); income (131); poverty (73); residence characteristics (64); rural area (62); rural population (109); social class (58); social status (126); socioeconomic status (56); statistics and numerical data (107); urban area (65); urban population (104)
Lifestyle behavior and sustainable consumption	14	sustainability (110); sustainable consumption (93); sustainable development (81); environmental impact (60); attitude to health (64); diet surveys (154); eating (109); ethnology (71); feeding behavior (439); food habits (227); food preference (115); food preferences (100); questionnaire (310); statistics (72)

Based on Figure 1, food waste is not only a problem for the environment, but it also shows how inadequate the system of consumption is, wasting resources like energy, water, and land. Even though this is an issue that has been extensively studied worldwide, most of the current study focuses on the macro level and pays little attention to how young people in developing cities like Ho Chi Minh City waste food. In contrast, the adult demographic - which is crucial for managing families and making purchasing decisions - is frequently examined from a broad standpoint with little paid attention to young adults, who are heavily impacted by technology and contemporary lives. The importance of a new approach, integrating the above factors, to explore the relationship between food waste consumption behavior in the specific cultural and social context of Vietnam.

Figure 1. Map of keywords in the study of factors between adults and food waste of young adult consumers



The results are shown in Figure 2, representing food waste as a global issue that not only affects the environment but also reflects deficiencies in food supply and waste management systems. Especially, having a significant association between adults and food waste, as this is the primary group responsible for household consumption and food management decisions.

Figure 2. Keywords map showing the link affecting wasteful food consumption behavior

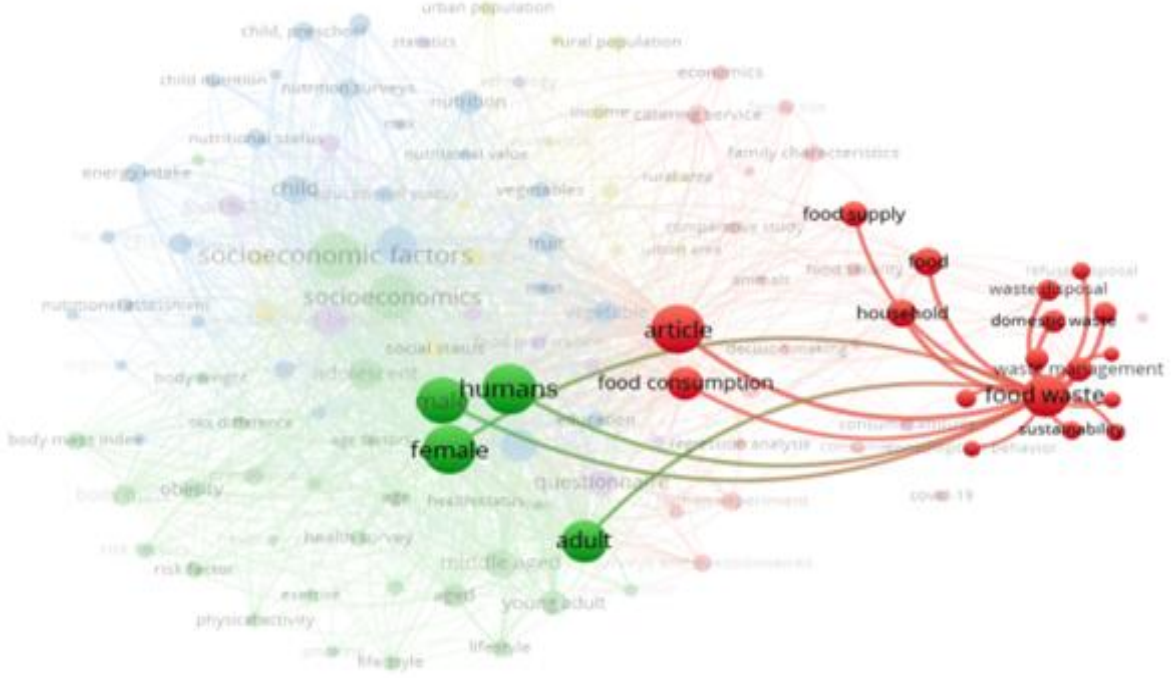
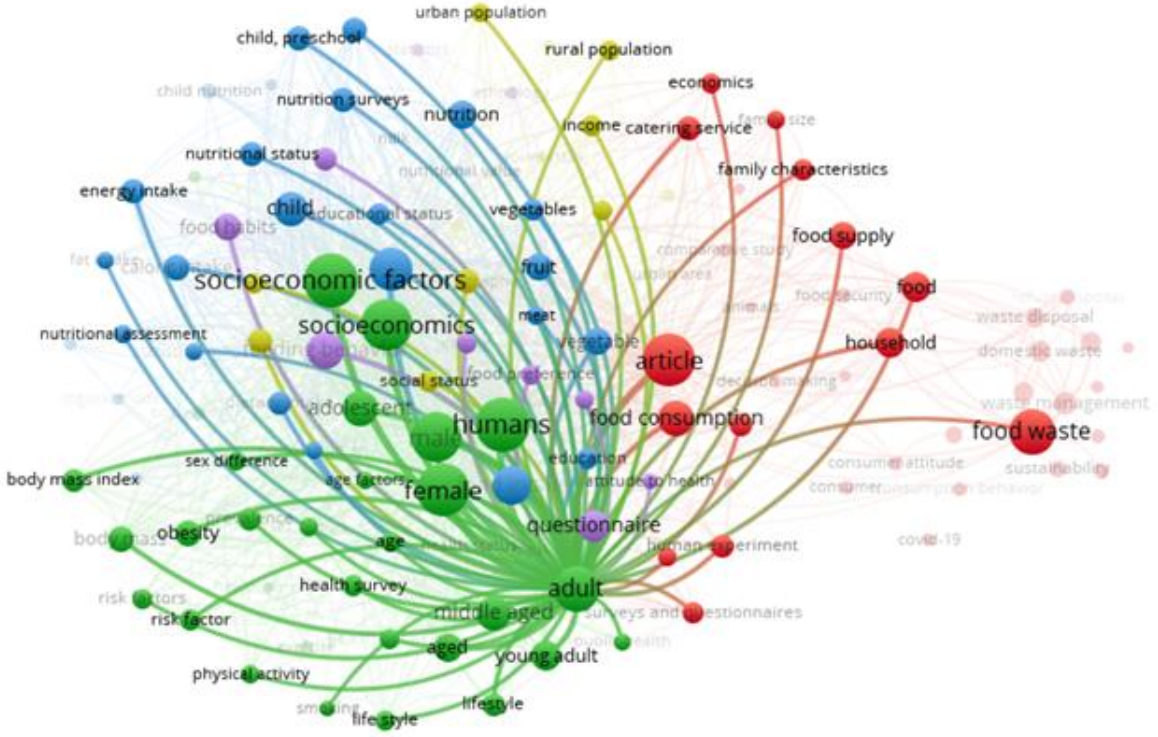


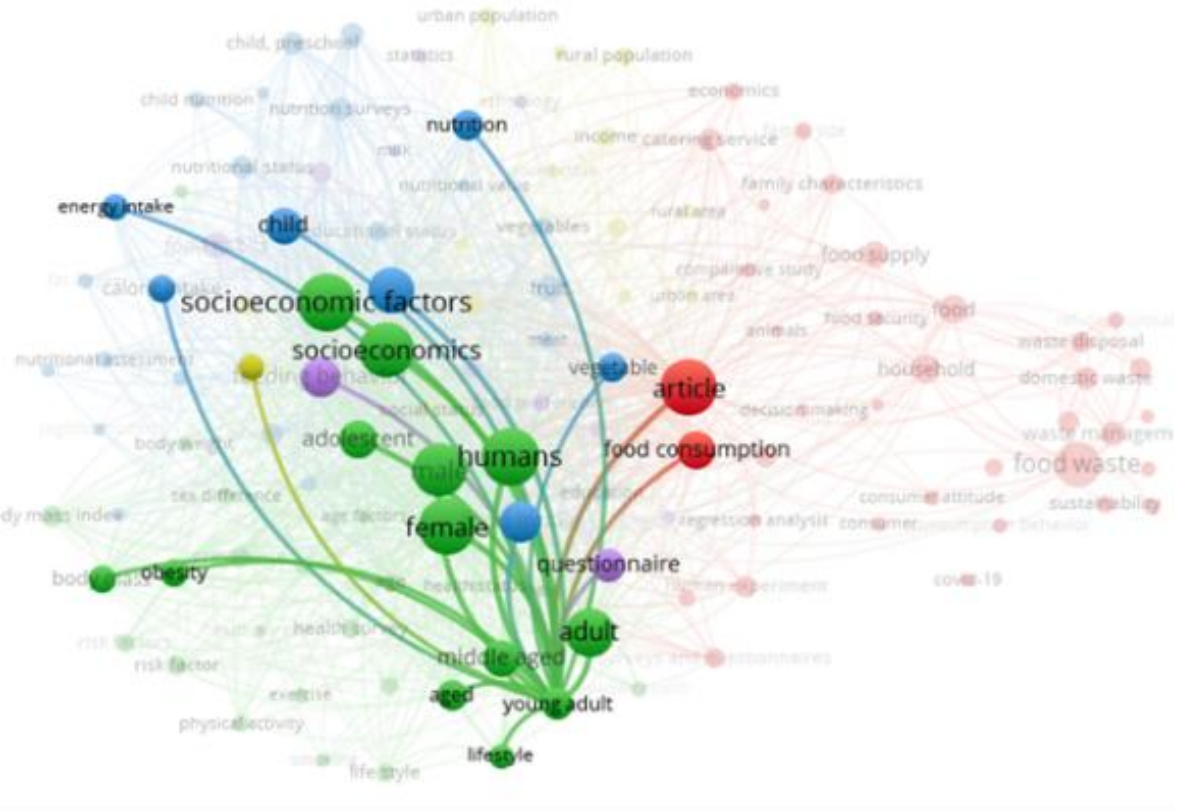
Figure 3 shows that the consumption and food waste behavior of adults are closely related to factors such as food waste, food consumption, socio-economic factors, physical activity, and gender differences. Global food waste stems from uncontrolled consumer behavior, emotional consumption habits, and lack of planning for food storage, especially in busy urban environments. Socioeconomic factors such as income and education strongly influence the way adults manage food: low-income individuals often lack management skills, while high-income individuals are more prone to extravagant consumption. At the same time, the widespread sedentary lifestyle has increased the demand for convenience foods, leading to waste.

Figure 3. Keywords map related to adult groups



Although young people are closely related to adults in biology and social roles, there are many differences in their consumption behavior and exercise habits. Under the background of modern society, young people's participation in physical activities is usually significantly reduced, which is influenced by the nature of office work, dependence on technology and convenient living habits. Additionally, this group is deeply influenced by the process of urbanization, the development of modern technology and the convenient consumption culture. These factors make them obviously different from other age groups (teenagers, adults or middle-aged people). As shown in Figure 4, young adults are closely related to food consumption, food intake and socio-economic factors. However, the consumption behavior and lifestyle of this age group have not been fully analyzed, which has left a huge gap in scientific research. This interrelated study will provide a clearer perspective on the food consumption behavior of young people, thereby offering concrete and appropriate solutions to encourage positive lifestyles, raise awareness of sustainable consumption, and reduce food waste in the context of rapid modernization and urbanization.

Figure 4. Keyword map related to young adult groups



A review of the extant literature reveals valuable analyses addressing macro-level factors such as the impacts of industrialization and urbanization according to Soma (2019) or specific issues like food label confusion according to Kavanaugh and Quinlan (2020). Recent research analyzed the factors that influence the behavior of reducing food waste in Vietnamese cities, with a particular focus on reducing food waste in urban community households according to Nguyen and Nguyen (2025). Further studies have endeavored to classify consumer behaviors according to Grasso et al. (2019) or the Attitude-Social Influence-Efficacy (ASE) model in university canteen contexts according to Pandey et al. (2023). Nevertheless, a common thread among these studies is their insufficient depth in examining the specific characteristics and behaviors of young adults operating within contemporary lifestyle contexts. This gap underscores a critical need for in-depth research into the food waste behaviors of young adults, a demographic often overlooked despite its significant impact. While extensive research has been conducted on the food waste habits of adults, young adults, whose consumption patterns are profoundly shaped by convenience and urbanization, remain underexplored. Understanding the unique lifestyle factors and behavioral drivers within this group is paramount for developing more precise, impactful interventions to curb food waste. Bridging this gap will not only enhance theoretical understanding but also inform the design of more effective, context-specific policies and strategies to combat food waste, particularly in rapidly urbanizing regions like Ho Chi Minh City. This research holds the potential to drive meaningful change by fostering sustainable consumption practices and addressing the urgent, growing challenge of food waste in modern society.

Appendix 2. Summary of variables affecting food waste behavior

Variables	Previous studies
H1a: Economic values	Triple Bottom Line – TBL (Elkington, 1994)
	What influences consumer food waste behavior in restaurants? An application of the extended theory of planned behavior (Coşkun & Özbük, 2020)

	Consumer-Related Antecedents of Waste Behavior in Online Food Ordering: A Study amongYoung Adults in China (Jia et al., 2022)
H1b: Humanistic values	Triple Bottom Line – TBL (Elkington, 1994)
	From the table to waste: An exploratory study on behaviour towards food waste of Spanish and Italian youths (Mondéjar-Jiménez et al., 2016)
H1c: Environmental values	Triple Bottom Line – TBL (Elkington, 1994)
	Consumer Food Waste Behavior among Emerging Adults: Evidence from China (Tsai et al., 2020)
H2: Attitude	Theory of Planned Behavior – TPB (Ajzen, 1991)
	Value - Attitude - Behavior – VAB (Homer & Kahle, 1988)
	Consumer Food Waste Behavior among Emerging Adults: Evidence from China (Tsai et al., 2020)
	Emotions and food waste behavior: Do habit and facilitating conditions matter? (Jabeen et al., 2022)
	Factors influencing consumers' food waste reduction behaviour at university canteens (Pandey et al., 2023)
	From Attitude to Behavior: The Effect of Residents' Food Waste Attitudes on Their Food Waste Behaviors in Shanghai (Li et al., 2024)
H3: Subjective norm	Theory of Planned Behavior – TPB (Ajzen, 1991)
	A consumer behavioural approach to food waste (Aktas et al., 2018)
	The road to food waste is paved with good intentions": When consumers' goals inhibit the minimization of household food waste (Barone et al., 2019)
	Analysis Of Behavioral Determinants Preventing Food Waste In Consumers Based On The Theory Of Planned Behavior (TPB) Mediated By Behavior Intention (Mawar & Adiati, 2024)
H4: Perceived behavioral control	Theory of Planned Behavior – TPB (Ajzen, 1991)
	A consumer behavioural approach to food waste (Aktas et al., 2018)
	Assumptions and perceptionsof food wasting behavior andintention to reduce food wastein the case of GenerationY and Generation X (Mucha & Oravecz, 2025)
H5: Affect	Theory of Interpersonal Behavior – TIB (Triandis, 1977)
	Bringing habits and emotions into food waste behaviour (Russell et al., 2017)
	Emotions and food waste behavior: Do habit and facilitating conditions matter? (Jabeen et al., 2023)
H6: Habit	Theory of Interpersonal Behavior – TIB (Triandis, 1977)
	Wood and Neal's Model (Wood & Neal, 2009)
	Sorting out food waste behaviour: A survey on the motivators and barriers of self-reported amounts of food waste in households (Visschers et al., 2016)

	Bringing habits and emotions into food waste behaviour (Russell et al., 2017)
H7: Intention to waste food	Theory of Planned Behavior – TPB (Ajzen, 1991)
	Determinants of consumer food waste behaviour: Two routes to food waste (Stancu et al., 2016)
	Consumers' food waste behaviour in restaurant (Lavén, 2017)
	An Exploratory Study of Consumer Food Waste Attitudes, Social Norms, Behavioral Intentions, and Restaurant Plate Waste Behaviors in Taiwan (Huang & Tseng, 2020)
	Understanding the food waste behaviour in university students: An application of the theory of planned behaviour (Akhter et al., 2024)

Appendix 3. Measurements

Scale/ Component	Code	Original Item Description	Revised Item Description
Economics value	EV 1	Price is an important criterion for my shopping behavior (Aschemann-Witzel et al., 2021)	High prices make me hesitate and cut back on food purchases
	EV 2	I compare prices between food products to get the best value for money. (Aktas et al., 2018)	I conduct comparative pricing analysis to optimize my purchasing decisions.
	EV 3	I think that wasting food is a waste of money. (Visschers et al., 20216)	I consider food waste to be a waste of money
	EV 4	I rarely think about money when I throw away food. (Visschers et al., 20216)	In order to save money, I prioritize consuming all the food I purchase.
	EV 5	Saving money does not motivate me to discard less food. (Visschers et al., 20216)	I do not purchase food near its expiration date, even when it is discounted
Humanistic values	HV 1	I'll change my behavior by following the opinions on food waste of families, friends, and peers that have influence over me. (Li et al., 2024)	I modify my food consumption behavior based on the advice of my family and friends
	HV 2	I think that in the current economic situation reducing food waste is a useful solution for dealing with the crisis. (Mondéjar-Jiménez et al., 2016)	I consider avoiding food waste to be an effective strategy for saving money during difficult economic times
	HV 3	From a social point of view, in my opinion reducing the amount of food thrown away is a correct behaviour towards those who have no food. (Mondéjar-Jiménez et al., 2016)	I believe that reducing food waste is the right thing to do.

Scale/ Component	Code	Original Item Description	Revised Item Description
	HV 4	I believe that the risk of becoming ill as a result of eating food past its use-by date is high. (Visschers et al., 2016)	I believe that consuming food before its expiration date is beneficial for my health
	HV 5	I am not worried that eating leftovers results in health damage. (Visschers et al., 2016)	I think consuming leftovers is acceptable if they are stored properly.
Environmental values	ENV 1	I'm willing to reduce the damage to the environment through my own actions. (Tsai et al., 2020)	I am willing to change my food consumption habits to protect the environment, provided that I clearly understand the impacts.
	ENV 2	I feel responsible for reducing food waste to protect the environment. (Lago et al., 2020)	I feel a responsibility to reduce food waste to protect the environment, given a clear understanding of the impacts
	ENV 3	If things continue as they have soon grown in ecological catastrophe. (Abdelradi, 2017)	I am concerned that continued food waste will significantly impact the environment due to a general lack of public awareness.
	ENV 4	I reuse leftover food because it can significantly benefit the environment. (Attiq et al., 2021)	I reuse leftovers because doing so can provide significant environmental benefits
	ENV 5	I believe reducing food waste will have a positive effect on environment protection. (Attiq et al., 2021)	I believe that reducing food waste will help protect the environment if people clearly understand the consequences.
Attitudes	ATT 1	It is unnecessary to waste food: it can always be used in some way. (Visschers et al., 2016)	I think leftover food can always be reused.
	ATT 2	It upsets me when unused products end up in the waste bin. (Visschers et al., 2016)	I feel upset when unused products are thrown away.
	ATT 3	It is contrary to my principles when I have to discard food. (Aydın & Yildirim, 2020)	I feel it's against the principle to throw away food.
	ATT 4	I think wasting food waste is bad. (Jabeen et al., 2023)	I think wasting food is not a good thing.
	ATT 5	I'm willing to reduce the damages to the environment through my own actions. (Tsai et al., 2022)	I am ready to take action to reduce the negative impact of food waste on the environment.

Scale/ Component	Code	Original Item Description	Revised Item Description
Subjective norm	SN 1	.It is shocking to see how much food people are wasting. (Apolonio & Lacaza, 2022)	The food-wasting behavior of people around me influences me.
	SN 2	People who are important to me find my attemptsto reduce the amount of food wasted unnecessary.* (Apolonio & Lacaza, 2022)	People around me believe that avoiding food waste is something that should be done.
	SN 3	People who are important to me greedy when I try to reduce my food waste.* (Visschers et al., 2016)	People around me support my efforts to reduce food waste.
	SN 4	I have been raised to believe that food should not be wasted and I still live according to this principle.* (Visschers et al., 2016)	I have been taught since I was young to avoid wasting food.
	SN 5	For me, the opinions of mass media, government policy, online information, experts, and salesmen on food waste are important. (Visschers et al., 2016)	Opinions from the media, social media, and experts about food waste affect me.
Perceived behavioral control	PBC 1	Food that is disposed due to imperfect qualities of the food (such as bruising) or damaged food packaging (includes out-grading). (Thyberg & Tonjes, 2016)	I throw away food because it is of poor quality.
	PBC 2	I am aware of the environmental consequences of food waste. (Lago et al., 2020)	I am not fully aware of the negative environmental consequences of food waste.
	PBC 3	I find it difficult to prepare a new meal from leftovers. (Visschers et al., 2016)	I experience difficulty in preparing new dishes from leftover food.
	PBC 4	I find it difficult to plan my food shopping in such a way that all the food I purchase is eaten. (Visschers et al., 2016)	I have difficulty planning purchases in a way that ensures full use of the food I buy.
	PBC 5	Too frenetic rhythms of life. (Bravi et al., 2016)	I waste food due to a very busy lifestyle.
Affects	AFF 1	I'm fine with throwing food in the bin. (Aschemann-Witzel et al., 2020)	I do not feel guilty about discarding food because I believe it will naturally decompose.

Scale/ Component	Code	Original Item Description	Revised Item Description
	AFF 2	I feel content when I throw away food since it is natural and biodegradable. (Jabeen et al., 2023)	I consider discarding food to be normal in a busy lifestyle.
	AFF 3	On special occasions (such as parties, dinners with friends, social events), I like to have plenty of food. (Barbera et al., 2022)	I prefer having abundant food during holidays and special occasions.
	AFF 4	I like having my own refrigerator and pantry full. (Barbera et al., 2022)	I feel happy when my refrigerator and food storage are always well stocked.
Habits	HAB 1	Doesn't often look at food date labels. (Kavanaugh & Quinlan, 2020)	I rarely pay attention to food expiration dates.
	HAB 2	I tend to buy a few more food products than I need at the supermarket. (Ajzen, 1991; Visschers et al., 2016; Stefan et al., 2013)	I tend to buy more food than I need when shopping at supermarkets.
	HAB 3	I always eat what is on my plate.* (Aschemann-Witzel et al., 2020)	I rarely finish all the food on my plate.
	HAB 4	I regularly buy many fresh products although I know that not all of them will be eaten. (Aschemann-Witzel et al., 2020)	I frequently purchase large amounts of fresh food for storage.
	HAB 5	I make a shopping list of food products I want to buy prior to my shopping trip.* (Emel Aktas et al., 2018)	I rarely make a shopping list before going grocery shopping.
Intention to Waste Food	INT 1	Would not consume an opened food past “use by” date. (Kavanaugh & Quinlan, 2020)	I do not consume expired food in order to avoid potential health risks.
	INT 2	Impulsive buying behaviour (especially because shops are full of offers). (Bravi et al., 2020)	I tend to purchase food impulsively, especially when there are promotional offers.
	INT 3	I try to produce only very little food waste.* (Visschers et al., 2016)	I tend to cook more food than necessary.
	INT 4	I aim to use all leftovers.* (Visschers et al., 2016)	I tend to leave leftover food after each meal.
	INT 5	I plan to order as much food as I can eat. (Coskun et al., 2020)	I tend to order as much food as possible when dining at restaurants.

Scale/ Component	Code	Original Item Description	Revised Item Description
Behavior to Waste	FWB 1	Saved food and eventually not used. (Lago et al., 2020)	I often store leftover food for later use; however, I tend to forget about it, which leads to unnecessary food waste.
	FWB 2	I waste food whenever I go out with friends/family. (Li et al., 2024)	I tend to waste food when dining with family and friends because I assume they will help me finish the food.
	FWB 3	I bought too much food - I miscalculated things that served. (Lanfranchi et al., 2016)	I often purchase more food than necessary, which results in food surplus and waste.
	FWB 4	I regularly use leftovers in the following days * (Mondéjar- Jiménez et al., 2016)	I rarely reuse leftover food, which leads to food being discarded.
	FWB 5	I regularly plan my purchases by writing a shopping list.* (Mondéjar-Jiménez et al., 2016)	I do not plan my grocery shopping and tend to overbuy food easily.

Appendix 4. Demographic Characteristics of Respondents

Demographic	Category	Percentage	Frequency
Living location	Ho Chi Minh City	100%	338
Age	18-24 years	55%	186
	25-35 years	45%	152
Gender	Male	37.6%	127
	Female	61.2%	207
	Other	1.2%	4
Living situation	Living with family	44.4%	150
	Dormitories	28.4%	96
	Living alone	8.3%	28
	Living with friends	18.9%	64
Occupation	Student	42.6%	144
	Office worker	28.4%	96

Demographic	Category	Percentage	Frequency
	Self-employment	22.5%	76
	Unskilled Workers	5.6%	19
	Other	0.9%	3
Monthly income (VND)	< 5 million	25.4%	86
	5 - 10 million	42.6%	144
	10 - 15 million	24.3%	82
	> 15 million	7.7%	26

Note: *VND = Viet Nam Dong; 1 USD = 25,780 VND*

Appendix 5. Discriminant Validity

	SN	AFF	HV	EV	ENV	FWB	PBC	ATT	HAB	INT
SN										
AFF	0.615									
HV	0.642	0.577								
EV	0.598	0.587	0.609							
ENV	0.648	0.608	0.597	0.628						
FWB	0.606	0.562	0.602	0.569	0.637					
PBC	0.595	0.543	0.605	0.594	0.620	0.609				
ATT	0.597	0.625	0.588	0.599	0.620	0.595	0.636			
HAB	0.570	0.590	0.601	0.627	0.622	0.641	0.630	0.585		
INT	0.594	0.611	0.514	0.616	0.641	0.596	0.554	0.549	0.583	

Note: *PV = Personal Values, ATT = Attitude, SN = Subjective Norms, PBC = Perceived Behavioral Control, AFF = Affect, HAB = Habit, INT = Intention to Waste Food, FWB = Behavior to Waste*

Appendix 6. Model fit

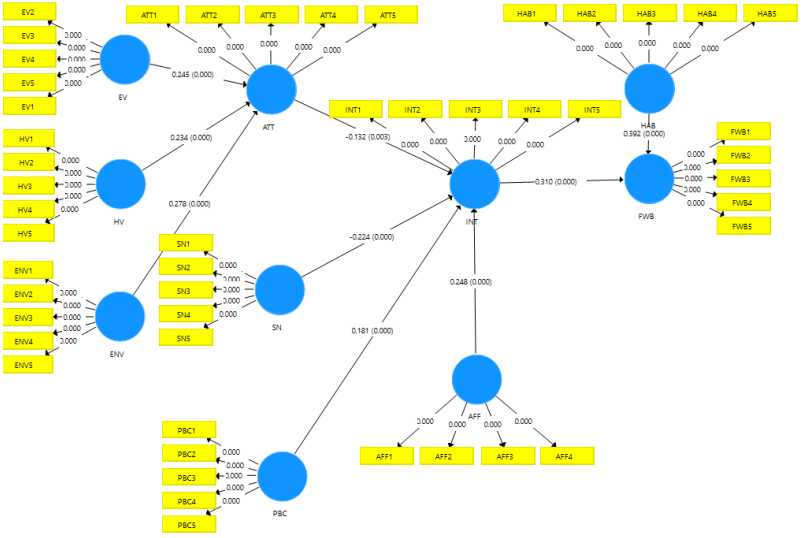
	Saturated Model	Estimated Model
SRMR	0.044	0.067
d_ULS	2.329	5.426
d_G	0.799	0.867
Chi-Square	1525.688	1604.776
NFI	0.824	0.815

Note: *SRMR = standardized root means square residual, d_ULS = unweighted least squares discrepancy, d_G = geodesic discrepancy, NFI = normed fit index.*

Appendix 7. R^2 and adjusted R^2 values

	R Square	R Square Adjusted
FWB	0.371	0.367
ATT	0.390	0.384
INT	0.387	0.380

Appendix 8. PLS-SEM Structural Model Results (N = 338)



Appendix 9. Effect size f^2

	SN	AFF	HV	EV	ENV	FWB	PBC	ATT	HAB	INT
SN										0.051
AFF										0.064
HV								0.059		
EV								0.062		
ENV								0.081		
FWB										
PBC										0.033
ATT										0.017
HAB						0.183				
INT						0.114				

Note: *PV = Personal Values, ATT = Attitude, SN = Subjective Norms, PBC = Perceived Behavioral Control, AFF = Affect, HAB = Habit, INT = Intention to Waste Food, FWB = Behavior to Waste*