

CONSUMER ROLE IN FOOD SUSTAINABILITY: PURCHASE INTENTION OF FOOD PRODUCED FROM AGRO-FOOD WASTE AMONG COLOMBIAN AND CHILEAN CONSUMERS

ROL DEL CONSUMIDOR EN LA SUSTENTABILIDAD ALIMENTARIA: INTENCIÓN DE COMPRA DE ALIMENTOS ELABORADOS A PARTIR DE EXCEDENTES AGROALIMENTARIOS EN CONSUMIDORES COLOMBIANOS Y CHILENOS

Ximena Rodríguez¹, Carlos Grande², Steffanya Oñate², Fancy Rojas¹, Carlos Carmona¹, Mario Castillo¹

ABSTRACT

Reducing food loss and waste is one of the most significant challenges facing modern agricultural and food systems, because it generates severe environmental, economic, and social impacts. In addition, it leads to the depletion of resources such as water, land, and energy. A strategy to manage food waste is transforming edible components into new foods for human consumption. Willingness to consume these products increases when consumers perceive higher nutritional value, health benefits, or positive environmental impact. Therefore, the aim of this work was to conduct a study in Colombia and Chile to evaluate the factors that may affect consumer preferences, purchase intention, and perceptions regarding the consumption of food derived from agri-food waste. In the study participated 385 people from 18 to 65 years of age or older of both sexes, of which 180 people were residents of Chile with Chilean nationality and 205 people were residents of Colombia and with Colombian nationality. The participants answered through a web questionnaire topic related to sociodemographic characteristics, attitude, norms and perceptions about acquiring food derived from agri-food waste. Consumers in both Chile and Colombia showed a moderately positive perception toward foods made from agri-food waste, especially when environmental and health benefits were emphasized. Despite favorable attitudes, actual purchasing behavior remained limited, indicating a gap between intention and action influenced by factors such as limited access, information, and market presence. The findings reinforce relevance of integrating sustainability principles, such as the circular economy, environmental protection, and conscious consumption, into consumers food choices.

Keywords: Circular economy; Consumer perception; Food sustainability; Shopping behavior

RESUMEN

Reducir la pérdida y desperdicio de alimentos es un gran desafío que enfrentan los sistemas alimentarios modernos, ya que genera graves impactos ambientales, económicos y sociales. Además, conduce al agotamiento de recursos como agua, tierra y energía. Una estrategia para gestionar el desperdicio alimentario es transformarlos en nuevos alimentos para consumo humano. La disposición a consumir estos productos aumenta cuando los consumidores perciben beneficios nutricionales, para la salud y medioambientales. El objetivo del trabajo fue realizar un estudio en Chile y Colombia evaluando factores que pueden afectar las preferencias, intención de compra y percepciones de los consumidores respecto al consumo de alimentos derivados de excedentes agroalimentarios. Participaron 385 personas de 18-65 años, de ambos sexos, de las cuales 180 eran residentes de Chile con nacionalidad chilena y 205 eran residentes de Colombia con nacionalidad colombiana. Los participantes respondieron un cuestionario web sobre características sociodemográficas, actitudes, normas y percepciones sobre la adquisición de alimentos derivados de excedentes agroalimentarios. Los consumidores de Chile y Colombia mostraron una percepción moderadamente positiva hacia estos alimentos, especialmente cuando se destacaron sus beneficios ambientales y para la salud. A pesar de las actitudes favorables, el comportamiento de compra actual se mantuvo limitado, lo que indica una brecha entre la intención y la acción, influenciada por factores como acceso limitado, información y presencia en el mercado. Los hallazgos refuerzan la importancia de integrar principios de sostenibilidad, como la economía circular, la protección del medio ambiente y consumo responsable, en las elecciones alimentarias de los consumidores.

Palabras clave: Economía circular; Percepción del consumidor; Sustentabilidad alimentaria; Conducta de compra

¹ Universidad Bernardo O'Higgins

² Universidad del Atlántico

*Corresponding Author: ximena@docente.ubo.cl

1. INTRODUCTION

Reducing food loss and waste is one of the most significant challenges facing modern agricultural and food systems. In 2022, approximately 1.05 billion tons of food intended for human consumption were wasted (Nath et al., 2023; United Nations Environment Programme, 2024). Fruits and vegetables are particularly vulnerable, accounting for 40-50% of losses along the entire food supply chain. These losses occur at stages before product consumption; for example, during cultivation, harvesting, storage, transport, and distribution to wholesale and retail markets, while wastage is generated at the final consumption stage, often due to spoilage and subsequent discarding of food (Shoffe & Johnson, 2024; Ray, 2022).

Among the main factors that directly influence the generation of agri-food waste are pests and diseases, physiological characteristics of the product (respiration, ripening), environmental conditions (temperature and humidity), technological limitations in post-harvest handling, as well as commercial demands and consumer behavior (Sugri et al., 2021). At the consumer level, food waste is higher in developed countries compared with developing countries, (Gouda & Duarte-Sierra, 2024). These food losses and waste generate severe environmental, economic, and social impacts. In addition, they deteriorate food security and lead to the depletion of resources such as water, land, and energy; furthermore, as organic residues, their decomposition contributes substantially to methane emissions, a potent greenhouse gas, accelerating climate change (Ezeorba et al., 2024; Galford et al., 2020).

Faced with this scenario, one of the strategies to manage food waste is to transform its edible components into new foods for human consumption, known as "recycled foods," a recently introduced term that refers to foods that are made from unmarketable ingredients such as low-quality products, with damage and imperfections or leftovers from food preparation (Moshtaghian, Bolton & Roust, 2021). Recycled food is an emerging category of sustainable food products made from ingredients that would otherwise have been discarded in the supply chain. Their production is based on verifiable traceability systems and processes that minimize environmental impact, generating a positive impact on both waste reduction and the ecological footprint of the food sector (Moshtaghian, Bolton & Roust, 2021; *The Upcycled Foods Definition Task Force*, 2020).

The social acceptance of recycled foods depends critically on a multidimensional analysis of consumer preferences to determine whether these products would be successful in the marketplace. Recent studies indicate that willingness to consume these products increases when consumers perceive higher nutritional value, health benefits, or positive environmental impact (Cela et al., 2024). Additionally, sociodemographic (age, gender, educational level, income, household size, country of origin) and psychographic (food neophobia, food waste awareness, lifestyle) factors significantly influence the acceptance of recycled foods (Aschemann-Witzel & Stangherlin, 2021).

For example, different generations have varying preferences regarding the consumption of recycled foods. While younger and older generations are inclined to include recycled foods in their lifestyles, middle-aged consumers are reluctant due to concerns about the perceived quality of these foods (Asioli & Grasso, 2021). Creating a positive quality perception is crucial for promoting and driving consumer acceptance. Research by Ma et al. (2024) showed that using communication strategies through social networks, positively addressing the problem of food waste and promoting solutions with a focus on sustainability and health benefits, aligned with consumer preferences, and captured their attention, increasing their willingness to purchase recycled food.

Therefore, the objective of this study was to evaluate the factors that may affect consumer preferences, purchase intention, and perceptions regarding the consumption of recycled food among Chilean and Colombian consumers. This study is expected to promote circular economy strategies bilaterally, encouraging the valorization of agri-food waste into new and sustainable products, and thereby bringing economic, environmental, and social benefits to each region.

2. METHODOLOGY

2.1 Research Design

An observational, analytical, cross-sectional study was conducted in a non-probabilistic sample executed in the year 2025. The subjects evaluated in this project were 385 people, selected by convenience through invitations on social networks, from 18 to 65 years of age or older of both sexes, of which 180 people were residents of Chile with Chilean nationality and 205 people were residents of Colombia and with Colombian nationality. The sample was collected during the months of January and June of the year 2025. The number of participants was determined by those who accepted the invitation on social networks during the period described above. The inclusion criteria were people with Chilean nationality residing in Chile and people residing in Colombia with Colombian nationality since the age of 18. People were excluded if, (a) those who did not complete the survey in its entirety, (b) those who did not have the technological resources to complete the questionnaire and (c) inability to give informed consent.

2.2 Instrument design

The questionnaire design for this study was based on a search for research-related topics in scientific literature. This first version of the instrument was validated through expert judgment by a group of nutritionists with experience in research and in the areas of nutrition and sustainability. Each expert answered three categories related to the questionnaire's clarity, logical relationship, and relevance, using a rating scale of 1 to 5, where 1 representing "very disagree", 2 "disagree", 3 "neither disagree nor agree", 4 "agree" and 5 representing "very agree". Based on the recommendations obtained during this validation, the relevant modifications were made. The instrument was subsequently administered to a population with similar characteristics to the one studied, who provided their comments for the final instrument.

2.3 Data Collection

The final instrument consisted of eight items, each with different response methods. The first part was informed consent. The second item included sociodemographic characteristics, with personal questions to determine the study subjects' characteristics, such as: country of residence, nationality, age, occupation, educational level, self-reported weight and height, affiliation with an indigenous people or ethnic group, frequency of weekly physical activity, weekly expenditure on food and beverages, and type of diet.

The third part corresponded to the attitude of acquiring food made from recycled food, composed of 6 statements: 1) I prefer food from agri-food waste because they contribute to sustainable food development.; 2) I prefer food from agri-food waste because they are more nutritious and healthy.; 3) I prefer food made from agri-food waste because it's a socially responsible choice.; 4) I prefer food from agri-food waste because the price is more affordable.; 5) I prefer food from agri-food waste because I feel safer consuming products that support the local economy and 6) I prefer food from agri-food waste because they promote food sovereignty and security.

The fourth item was related to the subjective norms that influence the decision to purchase food derived from agri-food waste. This item was composed of 4 statements, which are presented below: 1) My family members support me choosing foods made from agri-food waste to help protect the environment.; 2) Information on social media, news, and newspapers influences my interest in purchasing foods made from agri-food waste.; 3) My community or culture supports the purchase of sustainable or low-environmental-impact foods.; and 4) I choose to purchase foods made from agri-food waste because of the influence of international environmental protection trends.

Item 5 corresponded to the perceived control in the decision to purchase food made from agri-food waste, composed of 3 statements: 1) I am willing to pay a reasonable additional cost for food made from agri-food

waste, knowing that they contribute to the protection of the environment.; 2) I am convinced that food made from agri-food waste helps to reduce waste and therefore represents a positive impact.; and 3) I believe that buying food made from agri-food waste is the right choice.

Part 6 was associated with the level of awareness and interest in foods made from agri-food waste, composed of two statements: 1) I believe that foods from agri-food waste can be part of a healthy, safe and sustainable diet and 2) I am willing to try new products made from agri-food waste if they are available on the market.

Part 7 relates to the intention to purchase foods made from agri-food waste. This item consisted of 5 statements: 1) I would prefer to buy foods made from agri-food waste if I knew that they support local or low-income farming communities.; 2) I am willing to buy foods made from agri-food waste if I know that they are beneficial to health.; 3) The likelihood that you purchase food from agri-food waste is very high.; 4) I intend to buy foods made from agri-food waste if they were available and 5) I intend to buy foods made from agri-food waste even if they cost more than traditional foods.

Finally, the last item, No. 8, referred to the decision to purchase food made from agri-food waste, with the following statements: 1) I regularly purchase food made from agri-food waste.; 2) I would purchase food made from agri-food waste as part of my daily diet for balanced nutrition.; and 3) I would purchase food made from agri-food waste because they are an ethical and responsible choice.

2.4 Ethical Aspects

The personal data, safety, and well-being of the participants were protected at all times. Each respondent voluntarily agreed to participate and signed an informed consent form. Informed consent was accepted throughout the initial stages of the online survey. By agreeing to respond, the subject consented to participate in the study. The study protocol was previously approved by the Ethics Review Committee of the Faculty of Health Sciences at Bernardo O'Higgins University. The study was conducted in compliance with the Helsinki Research Ethics Agreement.

2.5 Data Analysis

Data are presented as mean and standard deviation. The level of significance was reported at 5% with a p-value of 0.05 using the Student t-test. The data was analyzed using SPSS version 25 statistical software (IBM Corp., Armonk, NY, USA).

3. RESULTS

3.1 Descriptive Analysis of the Sample

Total number of subjects for this project was 385 of which 180 were Chilean people and 205 corresponded to Colombian people. Regarding age, most of the subjects (45.9%) were between 18-24 years old (Figure 1). 43.4% of total subjects were employed and their educational level corresponded to university education (56.4%). Regarding ethnic or cultural affiliation, most of the subjects did not belong to any (85.9%, Data not shown).

With respect to frequency of weekly physical activity, 37.7% performed 1 to 2 times a week, but 33.6% did not perform any (table 1).

Considerably most of the subjects (78.7%) spent their weekly money on fresh food and are willing to spend more on healthy and sustainable food and beverages if the price is reasonable (63.4%).

Regarding the type of diet, most of them are omnivorous (92.1%) and 62.8% considered that personal health concerned influenced in their choice of diet (table 1).

3.2 Perception and impact about acquiring food from agri-food waste

The attitude of acquiring food made from agri-food waste, composed of 6 statements showed that the mean in both countries is near 4, considerer that 3 is a neutral position and 4 is “agree”, these results indicating a slightly positive attitude to acquiring food made from agri-food waste (table 2). In addition, subjective norms that influence the decision to purchase food derived from agri-food waste showed a mean between both countries are between 3.08 and 3.59 indicating that norms standards can influence the decision to purchase food derived from agri-food waste, but they do not act as the main triggers for decision-makers (table 2).

The perceived control in the decision to purchase food made from agri-food waste, composed of 3 statements showed a mean between 3.36 and 4.2 in Chile and Colombia, respectively. In general, Colombian people showed a more positive response to the impact to purchase food made from agri-food waste related to the environment protection and waste reduction (table 3).

When people were asked about their level of awareness and interest in foods made agri-food waste, both populations showed positive interest in new products of this type, if they are available on the market (table 3).

The items related to intention to purchase foods made from agri-food waste showed a mean between 3.19 and 4.34 indicating positive intention to purchase foods made from agri-food waste.

Table 1. Descriptive analysis of the sample

Variables		Total	Chile	Colombia
Weekly physical activity	I don't do any physical activity	129 (33.6%)	64 (35.6%)	65 (31.7%)
	1-2 times a week	145 (37.7%)	62 (34.4%)	83 (40.5%)
	3-5 times a week.	92 (23.8%)	45 (25.0%)	47 (22.9%)
	More than 5 times a week	19 (4.9%)	9 (5.0%)	10 (4.9%)
	Fresh foods (fruits, vegetables, meats)	303 (78.7%)	143 (79.4%)	160 (78.0%)
In which categories do you spend most of your weekly food and beverage spending?	Processed or ultra-processed foods (snacks, cookies, others)	37 (9.6%)	14 (7.8%)	23 (11.2%)
	Alcoholic beverages (beer, wine, liquor)	2 (0.5%)	1 (0.6%)	1 (0.5%)
	Non-alcoholic beverages (juices, sodas, water)	9 (2.3%)	5 (2.8%)	4 (2.0%)
	Food prepared outside the home (restaurants, fast food, others)	26 (6.7%)	13 (7.2%)	13 (6.3%)
	Dietary supplements (vitamins, proteins, others)	8 (2.0%)	4 (2.2%)	4 (2.0%)
	Personal health concerns	242 (62.8%)	116 (64.4%)	126 (61.5%)
What factors most influence your choice of diet?	No specific reason	106 (27.5%)	47 (26.1%)	59 (28.8%)
	Cultural or family preference	35 (9.1%)	15 (8.3%)	20 (9.8%)
	Ethical or animal welfare reasons	2 (0.6%)	2 (1.1%)	0 (0.0%)
	Flexitarian (primarily vegetarian but occasionally eats meat).	12 (3.1%)	5 (2.8%)	7 (3.4%)
What type of diet do you currently follow?	Lacto-ovo-vegetarian (excludes meat but includes dairy and eggs).	4 (1.0%)	2 (1.1%)	2 (1.0%)
	Lacto-vegetarian (excludes meat and eggs but includes dairy).	1 (0.3%)	1 (0.6%)	0 (0.0%)
	Omnivorous (includes all food groups).	355 (92.1%)	163 (90.5%)	192 (93.7%)
	Ovo-vegetarian (excludes meat and dairy but includes eggs).	2 (0.6%)	1 (0.6%)	1 (0.5%)
	Pesco-vegetarian (excludes red meat and poultry but includes fish).	9 (2.3%)	6 (3.3%)	3 (1.5%)

Consumer role in food sustainability: purchase intention of food produced from agro-food waste among colombian and chilean consumers

		Vegetarian (excludes meat, fish, seafood, but includes dairy and/or eggs).	2 (0.6%)	2 (1.1%)	0 (0.0%)
Ethnic or cultural affiliation	I do not belong		331 (85.9%)	160 (88.9%)	171 (83.4%)
	Yes, I belong to an Afro-descendant group		24 (6.3%)	0 (0.0%)	24 (11.7%)
	Yes, I belong to an Indigenous people.		30 (7.8%)	20 (11.1%)	10 (4.9%)

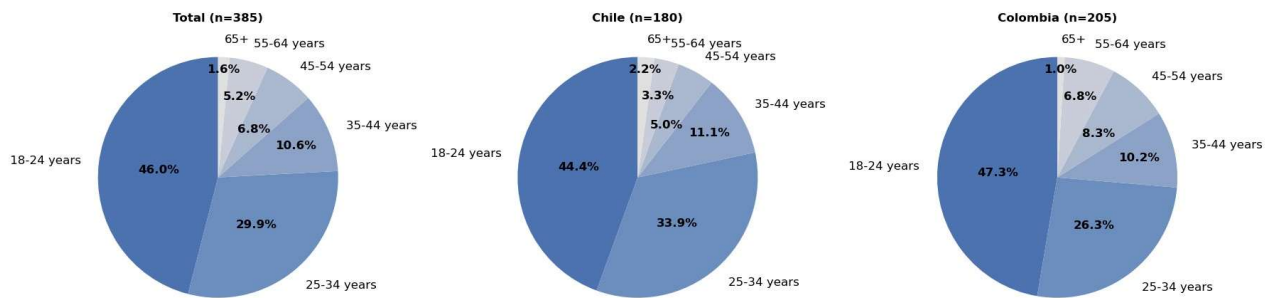


Figure 1. Total number of subjects participants in the study

However, the price appears to be an important issue that limiting buy intention. If the foods from agri-food waste are beneficial to health and are available, people have shown a more positive intention to purchase this kind of food (table 4).

When analyzing the decision to purchase food derived from agri-food waste, it becomes evident that although there is a general tendency in both countries to consider buying these products if they are perceived as beneficial. On the other hand, most respondents do not purchase them regularly and tend to remain neutral when asked whether they consider such products in their usual shopping habits (table 4).

Table 2: Perception about acquiring food from agri-food waste

Variables		Chile*	Colombia*	p-value
Attitude of acquiring food made from agri-food waste	I prefer food from agri-food waste because they contribute to sustainable food development.	3.59±1.04	3.83±0.86	0.0128
	I prefer food from agri-food waste because they are more nutritious and healthier.	3.71±0.95	3.75 ± 0.90	0.7113
	I prefer food made from agri-food waste because it's a socially responsible choice.	3.66±0.99	3.87 ± 0.87	0.0263
	I prefer food from agri-food waste because the price is more affordable.	3.45± 1.07	3.63 ± 0.85	0.0724
	I prefer food from agri-food waste because I feel safer consuming products that support the local economy.	3.61± 1.00	3.91 ± 0.89	0.0020
	I prefer food from agri-food waste because they promote food sovereignty and security.	3.62± 1.01	3.88 ± 0.87	0.0072
	My family members support me choosing foods made from agri-food waste to help protect the environment.	3.20 ± 1.20	3.59 ± 0.94	0.0006
Subjective norms that influence the decision to purchase				
Information on social media, news, and newspapers influences my interest in purchasing foods made from agri-food waste.		3.24 ± 1.29	3.20 ± 1.12	0.7500

Consumer role in food sustainability: purchase intention of food produced
from agro-food waste among colombian and chilean consumers

food derived from agri-food waste	I choose to purchase foods made from agri-food waste because of the influence of international environmental protection trends.	3.08 ± 1.21	3.40 ± 1.06	0.0068
	I choose to purchase foods made from agri-food waste because of the influence of international environmental protection trends.	3.26 ± 1.18	3.47 ± 0.94	0.0548

*Data are presented as mean and standard deviation

Table 3. Perception and interest in sustainable impact of food from agri-food waste

*Data are presented as mean and standard deviation

Variables		Chile*	Colombia*	p-value
Perceived control in the decision to purchase food made from agri-food waste	I am willing to pay a reasonable additional cost for food made from agri-food waste, knowing that they contribute to the protection of the environment.	3.36±1.15	3.72 ± 0.89	0.0008
	I am convinced that food made from agri-food waste helps to reduce waste and therefore represents a positive impact.	3.87 ± 1.04	4.2 ± 0.78	0.0005
	I believe that buying food made from agri-food waste is the right choice.	3.76 ± 1.03	3.94 ± 0.81	0.0662
Level of awareness and interest in foods made from agri-food waste	I believe that foods from agri-food waste can be part of a healthy, safe and sustainable diet.	4.01 ± 0.94	4.19 ± 0.79	0.0453
	I am willing to try new products made from agri-food waste if they are available on the market.	4.15 ± 0.98	4.2 ± 0.81	0.6252

Table 4. Intention and decision to purchase food from agri-food waste

Variables		Chile*	Colombia*	p-value
Intention to purchase foods made from agri-food waste	I would prefer to buy foods made from agri-food waste if I knew that they support local or low-income farming communities.	3.96 ± 1.02	4.2 ± 0.82	0.0121
	I am willing to buy foods made from agri-food waste if I know that they are beneficial to health.	4.26 ± 0.89	4.34 ± 0.75	0.3376
	The likelihood that you purchase food from agri-food waste is very high.	3.56 ± 1.00	3.86 ± 0.87	0.0018
	I intend to buy foods made from agri-food waste if they were available.	3.89 ± 0.98	4.04 ± 0.78	0.114
	I intend to buy foods made from agri-food waste even if they cost more than traditional foods.	3.19 ± 1.03	3.43 ± 1.03	0.0276
Decision to purchase food made from agri-food waste	I regularly purchase food made from agri-food waste.	2.61 ± 1.14	2.89 ± 1.10	0.0159
	I would purchase food made from agri-food waste as part of my daily diet for balanced nutrition.	3.79 ± 0.99	3.86 ± 0.85	0.4315
	I would purchase food made from agri-food waste because they are an ethical and responsible choice.	3.73 ± 1.03	3.83 ± 0.85	0.2988

*Data are presented as mean and standard deviation

4. DISCUSSION

The global food system is facing increasing pressure to adapt to the new challenges posed by climate change. Innovation to avoid food waste or the valorization of agri-food waste emerges as a relevant strategy aligned with the principles of sustainability and the circular (El Bilali, Strassner & Ben Hassen, 2021). This study offers valuable insights into consumer perceptions and intentions in Chile and Colombia regarding foods derived from agri-food waste.

Food loss and waste are critical problems that not only undermine food security but also contribute significantly to greenhouse gas emissions and the overuse of natural resources such as water, soil, and

energy (de Almeida & da Silva, 2023). Transforming agri-food waste into new food products presents a feasible solution to these issues, bridging the gap between sustainability goals and practical actions within the food system. Food from agri-food waste emerge as an innovative category of products that may help reduce environmental impact and promote more ethical and responsible consumption. In addition, due to nutritional and functional properties of the agri-food waste can be an important source of protein, lipids, vitamins, minerals and antioxidants depending (Rodríguez

et al., 2023) on raw material and can be considered part of sustainable diets development. However, the valorization of food waste derived from fruits and vegetables presents challenges, such as acquiring the quantities necessary for a process and they can also deteriorate very quickly, generating restrictions on their use for the generation of products derived from these agri-food waste (Rodríguez et al., 2023; Rodríguez et al., 2024). Finally, consumer acceptance is essential for the viability of such circular economy initiatives.

This study showed that both Chilean and Colombian participants expressed a moderately positive attitude toward the consumption of food made from agri-food waste. While the intention to purchase these products increased when their health benefits and environmental value were emphasized, actual purchasing behavior remained low or neutral, suggesting a gap between intention and practice. This discrepancy could be linked to factors such as limited market availability, lack of information, and price sensitivity elements that often hinder the transition from awareness to action. This behavior has been described in literature, Sociodemographic factors such as age, educational level and income can be predictors of behavior, and the adoption of eating habits considered sustainable, influencing the willingness, participation and understanding of both nutritional information and the environmental impact behind the food (Mirzabaev et al., 2023). In Spain, younger participants highly valued attributes of sustainable food with low environmental impact (Deloitte, 2025). Benedetti et al. (2018) showed that a key factor in food consumption pattern was that education level, where people with higher education showed greater adoption of healthy diets. Moreover, purchasing power impacts on the ability to make sustainable dietary choices. The perceived high cost of sustainably produced foods limits purchasing power. The lack of available options for certain foods, as well as the oversupply of low-cost processed products, influences consumption patterns. Although our study did not evaluate the different parameters by age and educational level, the positive perception could be explained because most of the participants were between 18-24 years old and their educational level corresponded to university education.

Moreover, the data suggests that perceived control and social norms moderately influence consumer decisions. Although individuals expressed willingness to support sustainable practices and pay more for environmentally responsible products, these motivations alone did not translate into strong purchasing behavior. This highlights the importance of broader systemic and policy-level support to reinforce individual efforts through incentives, education, and infrastructure that facilitate access to these products. Supportive policies are essential to promote healthier and sustainable consumption. Strategies such as taxing less healthy foods or promoting innovation in healthy and sustainable foods could contribute to this goal (Principato et al., 2025).

Importantly, this study also found that Colombian respondents tended to report slightly higher awareness and stronger beliefs about the positive impact of purchasing recycled foods compared to their Chilean counterparts.

This variation may be shaped by cultural factors, national policy emphasis, or exposure to sustainability campaigns (Lizcano-Prada et al., 2024). Research carried out in Spain, Turkey and Colombia showed that in all these countries, although there were high levels of knowledge, consumption and willingness to change towards more sustainable habits, differences were found such as price sensitivity and demand for information about foods that claim to be sustainable (Lizcano-Prada et al., 2024). Guzmán et al (2021) showed that Colombian consumers have adopted habits that prioritize quality of life and resources for future generations. However, they have shown less participation, mainly due to the influence of economic variables such as the cost of products and price speculation on environmentally friendly products (Guzmán Rincón et al., 2021). In addition, limited access to this type of food, is also an explication why consumers in Colombia do not consume sustainable food (Lizcano-Prada et al., 2024). On the other hand, Colombian consumers are influenced by tradition and the indigenous culture, therefore, their consumption habits are shaped not only by health and well-being but also by family traditions rooted in agricultural heritage. This connection reflects a deep cultural bond with nature and food production. In this context, most Colombian consumers emphasize the importance of buying local and supporting local farmers (WWF, 2022).

Although current dietary patterns in Chile fall short of nutritional recommendations, diet quality tends to correjidoimprove with higher socioeconomic status. These findings may inform the development of public policies aimed at promoting healthy eating and food security, particularly in the context of climate change and water scarcity. When making food choices, consumers generally prioritize factors such as price, freshness, convenience, and taste over nutritional content and environmental considerations (Cambeses Franco et al., 2022).

Incorporating recycled or agri-food waste-based foods into regular consumption patterns represents a promising step toward a more resilient and sustainable food system. However, it requires not only innovative product development but also consumer education, visibility in the marketplace, and strategies that align environmental benefits with economic accessibility. In summary, the findings reinforce the idea that transforming consumer perception is essential to advancing sustainable dietary behaviors. Promoting food products derived from agri-food waste must be accompanied by effective communication, pricing strategies, and policy frameworks that integrate environmental and social dimensions, ultimately supporting both climate goals and food system resilience.

Future research should explore the barriers and drivers of consumer behavior in more depth, including socioeconomic variables, sensory perceptions, and cultural attitudes. Expanding studies to other countries and demographic groups will also provide a broader view of consumer readiness to adopt sustainable food alternatives. Ultimately, fostering the adoption of foods made from agricultural surpluses and agri-food waste contributes not only to waste reduction and resource efficiency but also to building a more equitable, climate-resilient food system.

Although this study provides valuable and up-to-date information on the preferences and purchasing intentions for foods made from agricultural waste among adults in Chile and Colombia, it is important to consider certain limitations. First, the low representation of male participants could have generated a gender bias in the results. Furthermore, the use of a convenience sample recruited online likely excluded individuals with limited access to or familiarity with digital technologies, which limits the generalizability of the findings to the population as a whole. Despite these limitations, the limited availability of studies addressing the decision to purchase food from agri-food waste in Latin America highlights the relevance of this research. In this regard, it is recommended that future research incorporate more diverse and representative samples, as well as longitudinal approaches, in order to deepen our understanding of this phenomenon and contribute to the design of effective strategies that promote the sustainable consumption of these foods.

5. CONCLUSIONS

This study highlights the emerging interest and moderate willingness of Chilean and Colombian consumers to engage with food products derived from agri-food waste. While the perception of such products as beneficial to

health and the environment is generally positive and may encourage their adoption, actual purchasing behavior remains limited. This gap between awareness and action is primarily influenced by factors such as price and availability. The findings underscore the importance of integrating sustainability principles such as the circular economy, environmental protection, and conscious consumption into consumer food choices. Promoting transparency, improving product accessibility, and strengthening public trust will be essential to foster the adoption of these products and contribute to a more sustainable, inclusive, and climate-resilient food system.

REFERENCES

- Al Shoffe, Y., & Johnson, L. K. (2024). Opportunities for prediction models to reduce food loss and waste in the postharvest chain of horticultural crops. *Sustainability*, 16(17), 7803. <https://doi.org/10.3390/su16177803>
- Aschemann-Witzel, J., & Stangherlin, I. D. C. (2021). Upcycled by-product use in agri-food systems from a consumer perspective: A review of what we know, and what is missing. *Technological Forecasting and Social Change*, 168, 120749. <https://doi.org/10.1016/j.techfore.2021.120749>
- Asioli, D., & Grasso, S. (2021). Do consumers value food products containing upcycled ingredients? The effect of nutritional and environmental information. *Food Quality and Preference*, 91, 104194. <https://doi.org/10.1016/j.foodqual.2021.104194>
- Benedetti, I., Laureti, T., & Secondi, L. (2018). Choosing a healthy and sustainable diet: A three-level approach for understanding the drivers of the Italians' dietary regime over time. *Appetite*, 123, 357-366. <https://doi.org/10.1016/j.appet.2018.01.004>
- Cambeses Franco, C., Rebolledo-Leiva, R., González-García, S., Feijoo, G., & Moreira, M. T. (2022). Addressing the food, nutrition and environmental nexus: The role of socio-economic status in the nutritional and environmental sustainability dimensions of dietary patterns in Chile. *Journal of Cleaner Production*, 379, 134723. <https://doi.org/10.1016/j.jclepro.2022.134723>
- Cela, N., Giorgione, V., Fassio, F., & Torri, L. (2024). Impact of circular economy information on sensory acceptability, purchase intention and perceived value of upcycled foods by young consumers. *Food Research International*, 175, 113765. <https://doi.org/10.1016/j.foodres.2023.113765>
- de Almeida Oroski, F., & da Silva, J. M. (2023). Understanding food waste-reducing platforms: A mini-review. *Waste Management & Research*, 41(4), 816–827. <https://doi.org/10.1177/0734242X221135248>
- Deloitte. (2025). *2025 Gen Z and Millennial Survey: Growth and the pursuit of money, meaning and well-being*. Deloitte Global. <https://www.deloitte.com/global/en/issues/work/genz-millennial-survey.html>
- El Bilali, H., Strassner, C., & Ben Hassen, T. (2021). Sustainable agri-food systems: Environment, economy, society, and policy. *Sustainability*, 13(11), 6260. <https://doi.org/10.3390/su13116260>
- Ezeorba, T. P. C., Okeke, E. S., Mayel, M. H., Nwuche, C. O., & Ezike, T. C. (2024). Recent advances in biotechnological valorization of agro-food wastes (AFW): Optimizing integrated approaches for sustainable biorefinery and circular bioeconomy. *Bioresource Technology Reports*, 26, 101823. <https://doi.org/10.1016/j.biteb.2024.101823>
- Galford, G. L., Peña, O., Sullivan, A. K., Nash, J., Gurwick, N., Pirolli, G., Richards, M., White, J., & Wollenberg, E. (2020). Agricultural development addresses food loss and waste while reducing greenhouse gas emissions. *Science of The Total Environment*, 699, 134318. <https://doi.org/10.1016/j.scitotenv.2019.134318>

- Gouda, M. H. B., & Duarte-Sierra, A. (2024). An overview of low-cost approaches for the postharvest storage of fruits and vegetables for smallholders, retailers, and consumers. *Horticulturae*, 10(8), 803. <https://doi.org/10.3390/horticulturae10080803>
- Guzmán Rincón, A., Carrillo Barbosa, R. L., Martín-Caro Álamo, E., & Rodríguez-Cánovas, B. (2021). Sustainable consumption behaviour in Colombia: An exploratory analysis. *Sustainability*, 13(2), 802. <https://doi.org/10.3390/su13020802>
- Lizcano-Prada, J., Maestre-Matos, M., Mesias, F. J., Lami, O., Giray, H., Özçiçek Dölekoğlu, C., Abdoulaye Bamoi, A. G., & Martínez-Carrasco, F. (2024). Does consumers' cultural background affect how they perceive and engage in food sustainability? A cross-cultural study. *Foods*, 13(2), 311. <https://doi.org/10.3390/foods13020311>
- Ma, S., Zheng, X. J., Lu, P., & Xu, Z. (2024). Promoting upcycled food: An analysis of social media communication strategies of Upcycled Food Association. *Future Foods*, 10, 100483. <https://doi.org/10.1016/j.fufo.2024.100483>
- Mirzabaev, A., Olsson, L., Kerr, R. B., et al. (2023). Climate change and food systems. *Science and innovations for food systems transformation*. https://doi.org/10.1007/978-3-031-15703-5_27
- Moshtaghian, H., Bolton, K., & Rousta, K. (2023). Public preferences for nutritional, environmental and food safety characteristics of upcycled foods in Sweden. *International Journal of Food Science & Technology*, 58(11), 5616–5625. <https://doi.org/10.1111/ijfs.16588>
- Moshtaghian, H., Bolton, K., & Rousta, K. (2021). Challenges for upcycled foods: Definition, inclusion in the food waste management hierarchy and public acceptability. *Foods*, 10(11), 2874. <https://doi.org/10.3390/foods10112874>
- Nath, P. C., Ojha, A., Debnath, S., Sharma, M., Nayak, P. K., Sridhar, K., & Inbaraj, B. S. (2023). Valorization of food waste as animal feed: A step towards sustainable food waste management and circular bioeconomy. *Animals*, 13(8), 1366. <https://doi.org/10.3390/ani13081366>
- Principato, L., Pice, G., & Pezzi, A. (2025). Understanding food choices in sustainable healthy diets: A systematic literature review on behavioral drivers and barriers. *Environmental Science & Policy*, 163, 103975. <https://doi.org/10.1016/j.envsci.2024.103975>
- Ray, R. C. (2022). Fruits and vegetable wastes: Valorization to bioproducts and platform chemicals. *Springer*. <https://doi.org/10.1007/978-981-16-9527-8>
- Rodríguez Palleres, X., Castillo-Ruiz, M., Correa Alfaro, S., & Rojas González, F. (2023). Evaluation of the antioxidant capacity of vegetable waste from a wholesale market in Chile. *International Journal of Agriculture and Natural Resources*, 50(3), 130–137. <https://doi.org/10.7764/ijanr.v50i3.2436>
- Rodríguez Palleres, X., Correa, S. A., Castillo-Ruiz, M., Rojas González, F., & Castagnini, J. M. (2024). Unlocking value: Transforming agri-food surpluses from a Chilean wholesale market into healthy and sustainable foods. *Revista Española de Nutrición Humana y Dietética*, 28(4), 287–298. <https://doi.org/10.14306/renhyd.28.4.2246>
- Sugri, I., Abubakari, M., Owusu, R. K., & Bidzakin, J. K. (2021). Postharvest losses and mitigating technologies: Evidence from Upper East Region of Ghana. *Sustainable Futures*, 3, 100048. <https://doi.org/10.1016/j.sftr.2021.100048>
- The Upcycled Foods Definition Task Force. (2020). *Defining upcycled foods: A definition for use across industry, government, and academia*. https://www.chlpi.org/wp-content/uploads/2013/12/Upcycled-Food_Definition.pdf

Consumer role in food sustainability: purchase intention of food produced
from agro-food waste among colombian and chilean consumers

United Nations Environment Programme (2024). Food Waste Index Report 2024. Nairobi.
Available on
<https://www.unep.org/resources/publication/food-waste-index-report-2024>

WWF & Sancho BBDO. (2022). *El verdadero valor de los alimentos: Imaginarios, comportamientos y realidades de la relación alimentación-naturaleza en Colombia*. https://wwflac.awsassets.panda.org/downloads/wwf_el_verdadero_valor_de_los_alimentos.pdf