

RESEARCH ARTICLE OPEN ACCESS

Towards Sustainable and Ethical Food Systems: Exploring Consumer Motivations and Strategies for Plant-Based Eating

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Received: 10 January 2025 | **Revised:** 8 September 2025 | **Accepted:** 25 September 2025

Funding: This work was supported by University College Dublin and by the Ministry of Education, Youth and Sports of the Czech Republic through the Operational Programme Johannes Amos Comenius, European Regional Development Fund project “Beyond Security: Role of Conflict in Resilience-Building” (CZ.02.01.01/00/22_008/0004595).

Keywords: animal rights | environmental sustainability | ethical consumption | plant-based diets | public health | social justice | sustainable food systems

ABSTRACT

Transforming global food systems is crucial for mitigating environmental degradation, reducing the global disease burden and protecting sentient individuals from harm. Despite overwhelming evidence linking animal-sourced foods to ecological damage, resource depletion and public health challenges, gaps remain in promoting sustainable consumption. This urgency is compounded by the scientific recognition of animal sentience, which elevates animal use to a moral issue. This study combines empirical data from a survey of 500 respondents with a literature review to explore motivations and behaviours driving plant-based eating. Key suggested interventions to foster a responsible food system include: (i) raising awareness of animal rights, (ii) disseminating nutritional and environmental knowledge, (iii) reforming agri-food subsidies, (iv) promoting plant-based food research, commercialisation and consumption and (v) fostering social inclusion and positive recognition of vegan identity. By addressing psychological, social and structural barriers to animal-free diets, this study offers actionable strategies for advancing a sustainable future.

1 | Introduction

Society is currently facing multiple crises, encompassing issues such as hunger and food insecurity, worsened by economic disparities and ecological destruction; climate change, pollution and biodiversity loss, posing existential threats to the planet; as well as diet-related diseases and antibiotic-resistant microorganisms (World Bank 2024; Allan et al. 2022; WHO 2022a, 2022b; WHO 2017; Reperant and Osterhaus 2017; Ceballos et al. 2015). These crises are interconnected and deeply tied to food production and consumption (Lucas et al. 2023; Eisen and Brown 2022; Springmann et al. 2021; Rao 2021; Clark et al. 2020; Garnett et al. 2017). Tackling them requires coordinated action across

government, society and individuals, focusing on both root causes and visible impacts. Among these actors, as Varzakas and Antoniadou (2024) have recently highlighted, consumers play an important role when they cumulatively signal a shift in preference, in turn putting pressure on the industry and governments.

The evidence linking animal-sourced foods to environmental and health challenges is overwhelming, encompassing issues such as deforestation, species extinction, carbon emissions, air, soil and water degradation, freshwater overuse and communicable and noncommunicable diseases (Ortmeyer et al. 2023; Allan et al. 2022; Theurl et al. 2020; Hayek et al. 2020; Poore and

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Nemecek 2018). A significant shift in favour of plant-based food consumption is needed to meet the United Nations' Sustainable Development Goals and the EU Green Deal objectives. Land use changes, ruminant metabolism and manure overgeneration in animal farming drive 18% to 87% of global greenhouse gas (GHG) emissions, depending on life cycle stages and timeframes considered (Rao 2021; Reisinger and Clark 2018; Goodland and Anhang 2009; FAO 2006; Wedderburn-Bisshop 2025). Even if fossil fuel burning is eliminated, limiting warming to 1.5°C still requires a drastic shift away from animal agriculture (Schlesier et al. 2024; Rao 2021; Clark et al. 2020; Wedderburn-Bisshop 2025).

The World Health Organization (WHO 2021) reports that one in three people faces food insecurity. In the meantime, the livestock industry uses nearly 80% of agricultural land to produce only 18% of human calories and 37% of protein (Poore and Nemecek 2018). Animal agriculture also accelerates species extinction through habitat destruction, food chain disruptions such as mass-scale fishing and genetic manipulation of animals (Perussello 2022). For instance, it consumes 75% of globally grown soybeans, much from the Amazon, destroying vegetation and displacing native wildlife (Molotoks et al. 2023). Given the inherent inefficiency of such a system, rewilding land currently used for animal agriculture offers a significant opportunity to mitigate the climate crisis and curb biodiversity loss (Allan et al. 2022; Hayek et al. 2020).

While a significant part of the global population faces food insecurity, 39% of adults worldwide and 59% in the European Union (EU) are overweight (WHO 2021; WHO 2022a). Animal-centred diets significantly raise the risk of heart disease, obesity, diabetes and cancer (Yang et al. 2024; Fan et al. 2023; Springmann et al. 2021; Fan et al. 2019; WHO and IARC 2015). Cardiovascular diseases stand as the primary cause of death globally (33%) and in the EU (20.2%–60.6% among member countries) (European Commission 2024; Dattani et al. 2023). Cancer follows as the second leading cause of mortality worldwide (and in the EU), comprising 18% of global human deaths (Dattani et al. 2023).

A global transition to plant-based eating can feed an additional 3.5 billion people while improving human health and offering valuable economic opportunities (Eisen and Brown 2022; Poore and Nemecek 2018; Springmann, Wiebe, et al. 2018; Springmann, Clark, et al. 2018). Moreover, the dietary shift could save USD 7.3 trillion from diseases and ecosystem degradation (Lucas et al. 2023). Animal agriculture, by contrast, wastes natural resources and generates environmental impacts that affect vulnerable human populations disproportionately, such as in the Global South (Ngcamu 2023).

Besides health and environmental concerns, an evident ethical issue surrounds the systematic use and exploitation of animals to produce animal-based foods. Physical and psychological animal suffering includes forceful impregnation, confinement, painful practices such as teeth clipping and castration without anaesthesia, coerced labour, early separation of mothers and their offspring, long-distance transport of newborns, disposal of unprofitable animals and killing (Perussello 2022). Most of these practices are unavoidable when bringing animal products

to the market. With the increase in scientific knowledge concerning animal minds and neurophysiology, as highlighted in the Cambridge Declaration of Consciousness (Low 2012), animal use has become increasingly difficult to defend. While debates in practical animal ethics are often divided between so-called 'welfarists' and 'abolitionists' or 'liberationists', these perspectives frequently merge in practice, where most animals used for food live lives of such suffering, confinement and social deprivation that either approach concludes that these practices are impermissible (Singer 2020; Abbate 2019).

The need to transition to plant-based food systems is urgent. Yet, significant barriers remain, including limited access to plant-based foods and ingrained cultural practices. To explore these challenges and identify strategies for accelerating change, we conducted an online survey with 500 individuals from diverse backgrounds who follow plant-based diets, focusing on their eating habits, motivations and the role of animal ethics in driving sustained change.

Although 'plant-based diets' partly overlap with the practice of 'veganism', we have sought to differentiate between these two key concepts in the survey. 'Veganism' is understood as a way of living that excludes, as far as possible, all forms of animal use: food, clothing, entertainment (e.g., zoos and aquaria), scientific experiments and other purposes.¹ Veganism includes but is broader than diet.² This study accounts for the overlaps and differences between plant-based eating and veganism but focuses on plant-based *diets* because adhering to them is the single practice that brings substantial benefits in terms of environmental, health and justice issues—while being clear that diet alone will not solve the problem of animal use but addresses its quantitatively largest dimension.

Previous studies have addressed the motivations and challenges of going plant-based and going vegan. Ghaffari et al. (2022) focus on the 'vegan diet', identifying it with plant-based, categorising motives and food attributes. Rickerby and Green (2024) offer a literature review that addresses plant-based diets but not the links with veganism; they also analyse the barriers to plant-based eating but do not connect them with motivations. Hopwood et al. (2021) present the most common motivations for plant-based diets, including the personality correlates of different diets, but do not examine the challenges. Anderson and Milyavskaya (2021) include specific motivational sources but not the challenges. Rosenfeld and Burrow (2017) also focus solely on motivations, which are divided into 'motivations, aversions, and constraints'. Braunsberger and Flamm (2019) focus on veganism rather than plant-based diets and examine the general motivations but not the sources that inspired them. Raptou et al. (2024), conversely, focus on plant-based diets among Gen-Z, looking at their willingness to eat plant-based and the obstacles.

However, to our knowledge, no study so far contains the same four elements as the present one: (i) separating plant-based diets and veganism, while also exploring the connection; (ii) addressing both motivations for and challenges of plant-based eating; (iii) separating challenges to *going* plant-based from challenges to *staying* plant-based and (iv) specifying the general motivators for plant-based eating (e.g., ethics), including their sources (e.g., documentaries or personal interactions). Despite

the unequivocal and mounting evidence of the devastating impacts of animal agriculture on planetary health and societal development, research on effective strategies to promote plant-based eating remains alarmingly underdeveloped, a reflection of the deep-rooted dominance of animal-based diets within social structures and institutions. Our aim is to deepen understanding of the factors that drive people to adopt and maintain plant-based diets—highlighting specific motivators, challenges, the role of ethics and the links among these—thereby addressing a critical gap in research needed to support effective dietary transitions amidst the urgent imperative to transform food systems.

2 | Methodology

2.1 | Survey Design

The survey aimed to explore the motivations, inspiration sources, sustaining factors and challenges of individuals adhering to a plant-based diet. A 20-question comprehensive questionnaire gathered qualitative and quantitative data on participants' dietary choices, motivations and perceptions regarding plant-based diets and veganism. It included single-select, multiple-choice and text-entry questions. The distinction between veganism and plant-based diets was clearly outlined at the survey's start (Appendix A), as follows:

- Plant-based diet: a diet free of animal-derived ingredients.
- Vegan: an individual who opposes animal use, and therefore follows a plant-based diet.

2.2 | Participant Recruitment and Ethical Considerations

Participants were recruited using a convenience sampling approach, with invitations sent via email, social media and professional platforms (e.g., LinkedIn). Eligibility required adherence to a 100% plant-based diet, regardless of vegan identification. The required sample size was determined based on the estimated global population following plant-based diets. According to IPSOS (2018), approximately 3% of the world's population—around 240 million people—adhere to plant-based diets. The sample size was calculated using the following equation (Krejcie and Morgan 1970):

$$n = \frac{DEFF \times N \times p(1 - p)}{\left(\frac{d^2}{Z_{1-\alpha/2}^2}\right) \times (N - 1) + p(1 - p)} \quad (1)$$

where n is the required sample size for various confidence levels, $DEFF$ is the design effect (1 for simple random sampling), N is the population size, p is the estimated proportion of the attribute present in the population (0.03 for 3%), $Z_{1-\alpha/2}$ is the z-score for the desired confidence level (1.96 for 95%) and d is the margin of error (0.05 for 5%).

According to Equation (1), 384 plant-based individuals provide a representative sample of the global plant-based population at 95% confidence and a 5% margin of error. Our sample size of 490

respondents exceeds this threshold, ensuring sufficient statistical power and diversity across sociodemographic segments.

Participants were informed about voluntary participation and data usage, and informed consent was obtained prior to the survey (Appendix A). Measures to ensure privacy and confidentiality included securing personal information and complying with data protection regulations. The study received retrospective approval from the Commission for Ethics in Research of the authors' institution.

2.3 | Survey Content and Data Collection

The survey was administered via an online platform (Google Forms) to streamline data collection. Participants accessed the questionnaire through a web link in the recruitment materials. The survey was open for completion from January 2023 to March 2024 and included both close-ended (quantitative) and open-ended (qualitative) questions. The survey included questions addressing dietary preferences, consumption of plant-based alternatives, motivations, challenges, health impacts, views on animal rights and sentience and access to educational resources. Participant responses were anonymised to ensure confidentiality and encourage honest answers. To minimise response biases and ensure data reliability and validity, the survey included clear instructions, maintained anonymity, avoided leading questions, provided diverse response options and incorporated attention-check questions.

2.4 | Data Analysis

Descriptive statistics (frequencies and percentages) summarised quantitative responses, while thematic analysis identified recurring themes in qualitative responses. Additionally, the answers to the 15 multiple-choice survey questions (Table 1) were analysed as nominal categorical variables. All pairs of variables were first compared using the χ^2 test of independence, considering p -values below 0.05 as significant. Cramér's V (Nikitina and Chernukha 2023) was then used to quantify the strength of significant relationships. Cramér's V is a normalised measure derived from the χ^2 statistic that accounts for sample size and table dimensions. Analogous to Pearson's correlation coefficient, it ranges from 0 (no association) to 1 (perfect association). The association between pairs of variables was categorised according to Cohen's thresholds: weak (0.10–0.30), moderate (0.30–0.50) and strong (>0.50). Responses were coded and categorised to extract key insights. The qualitative and quantitative findings were integrated to provide a comprehensive understanding of participants' eating habits, motivations and perceptions of plant-based diets and veganism.

3 | Results and Discussion

3.1 | Demographic Profile

Demographic profiling is essential in understanding motivations for a plant-based diet, as it highlights how factors like age and residence influence dietary choices. This enables tailored

TABLE 1 | Multiple choice questions included in χ^2 and Cramer's V analysis.

N	Abbreviated question	Full question
1	PB_Yrs	1. How long have you been following a plant-based diet?
2	Age	2. Age (< 19; 19–29; 30–45; 46–60; > 60)
3	Region	3. In which part of the world do you live?
4	Veg_Yrs	4. How long have you been vegan?
5	Diet	5. What type of plant-based diet do you follow?
6	Reason	6. What was your main reason for adopting a plant-based diet?
7	Alt_Use	7. How often do you consume plant-based alternatives that mimic animal foods (i.e., animal-free sausages, cheese, eggs, etc.)
8	PB_Diff	8. What is your main difficulty in following a plant-based diet?
9	Health_Any	9. Have you noticed any changes in your health and well-being after going plant-based?
10	Food_Cost	11. Would you say you spend more or less money on food compared to when you were not plant-based?
11	Veg_Peers	13. Did you know any vegans ^a before you became plant-based?
12	Campaign	15. Did single-issue campaigns (i.e., to ban pig crates, bird debeaking and other specific farming practices) inspire you to consider plant-based eating?
13	Footage	16. Did footage of animal farms inspire you to eat plant-based?
14	Alt_Use	17. Does the availability of plant-based alternatives to traditional animal products help you stay plant-based?
15	Return	18. Do you consider going back to eating animal products?

Note: The N index number in the first column is used as a reference in the figures shown in Section 3. The numbering in the third column (Full question) corresponds to the actual question numbers in the survey.

^aVegans you have met in person or just online.

interventions and targeted messaging to promote healthier, more sustainable and ethical eating habits across diverse groups. Differentiating between plant-based eating and veganism is also crucial, as plant-based eating focuses on excluding animal-derived foods, while veganism encompasses broader lifestyle choices opposing the use and oppression of sentient

beings. Recognising these distinctions ensures that initiatives promoting food system change effectively address the varied motivations and needs of different population segments. Most respondents are long-time followers of plant-based eating: 77.7% for over 2 years, 35.3% for 7–15 years and 22.9% for more than 15 years (Figure 1a). All participants were older than 18, with 11.2% in the 19–29 age group, 34.7% in the 30–45 age group, 31.8% in the 46–60 age group and 22.0% older than 60 (Figure 1b). Approximately half of the respondents reside in Europe (51%), 33.5% live in North America, 4.9% in Latin America, another 4.9% in Asia, 3.9% in Oceania, 1.4% in Africa and 0.4% in the Middle East (Figure 1c). Out of all 490 participants, 95.5% are vegan. Most respondents are long-time vegans, with 53.9% being vegan for more than 7 years and 18.2% for over 15 years (Figure 1d).

The high percentage of respondents adhering to a plant-based diet for several years (Figure 1a) indicates strong commitment, suggesting they have a deep understanding of plant-based nutrition, motivations and the challenges of maintaining this lifestyle. This insight is valuable for exploring long-term adherence and sustainability. Additionally, the prevalence of respondents in the 30–60 age range (Figure 1b) shows that plant-based eating is also embraced by older adults. Understanding this age distribution can help tailor interventions, messaging and educational resources for different age groups. The geographic distribution of respondents demonstrates the global reach and diversity of the plant-based eating movement. While Europe and North America have the highest representation, respondents from Latin America, Asia, Oceania, Africa and the Middle East contribute diverse perspectives within the community (Figure 1c). Recognising the global nature of plant-based eating can guide strategies to promote awareness and accessibility of plant-based options worldwide. Additionally, it highlights the opportunity to raise awareness that many traditional dishes, particularly, those created by people historically unable to afford animal products, are naturally plant-based. This understanding can help promote the accessibility and acceptance of plant-based diets across different cultural contexts. The overwhelming majority of respondents identifying as vegan (95.5%) (Figure 1d) highlights the central role of veganism within the plant-based community. This suggests a strong connection between plant-based eating and ethical concerns about animal welfare, animal rights and justice. Confusion in public awareness between animal welfare and animal rights can pose a barrier against veganism by undermining the clarity of ethical messaging, perpetuating moral licencing and obscuring the systemic issues inherent in animal use. Overcoming this confusion requires clear, consistent advocacy efforts emphasising the interconnectedness of animal liberation and veganism as essential components of a more ethical and sustainable food system.

3.2 | Eating Habits and Motivations

The respondents follow various plant-based eating patterns, with the majority (65.3%) consuming primarily whole foods, while 19.2% consume significant amounts of ready-to-eat meals and junk food. A small percentage (0.8%) eat exclusively fruits or raw foods, and 14.1% follow other types of plant-based diets (Figure 2a). These findings challenge the common stereotype

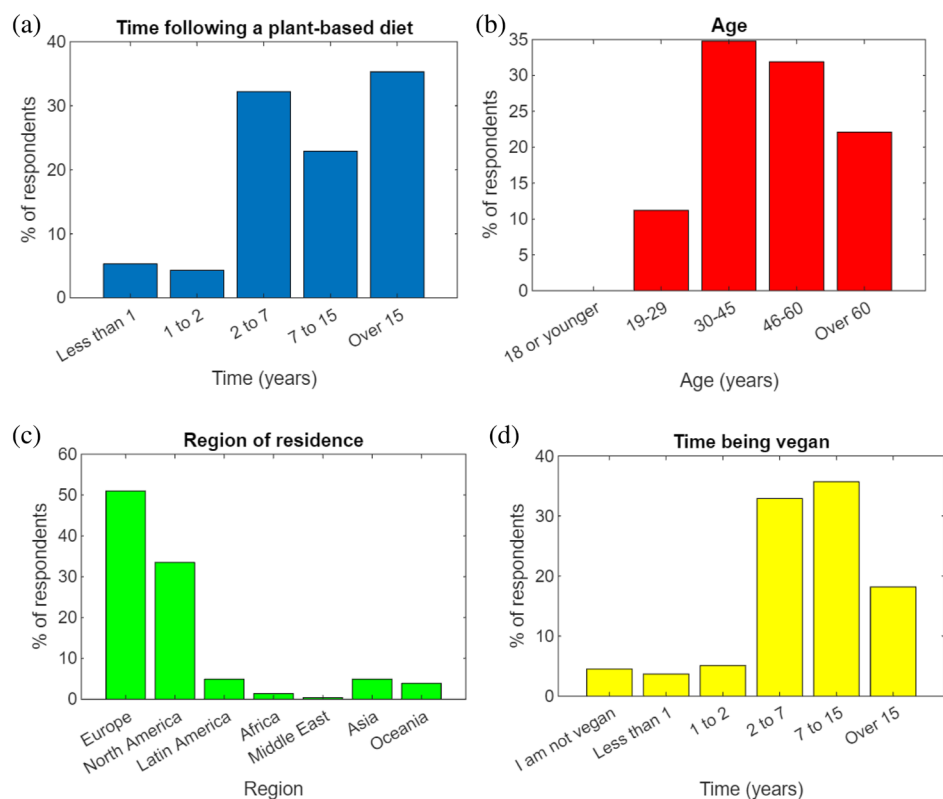


FIGURE 1 | Demographic profiling of the survey respondents: (a) time following a plant-based diet, (b) age, (c) geographical region of residence and (d) time being vegan.

that vegans and plant-based eaters rely heavily on ultra-processed or ‘fake’ foods. This is particularly relevant given that the average Western diet is low in whole plant foods (such as fruits, vegetables, legumes, whole grains, nuts and seeds) and high in saturated fats, refined sugars and cholesterol. Plant-based eaters are generally more mindful of health and more knowledgeable about nutrition (Shickle et al. 1989; DeMay et al. 2019), having moved from the norm and often being called to justify their diet. As a result, their diets tend to emphasise whole, minimally processed foods rich in vitamins, minerals and antioxidants, contributing to improved health outcomes and disease prevention.

When asked, ‘What was your main reason for adopting a plant-based diet?’, most respondents (83.9%) pointed out animal ethics. The second main reason was health, with 8.8% of respondents. Environmental sustainability came as the third top reason, with 3.3% (Figure 2b).

The survey results highlight the importance of plant-based alternatives to animal products in both the transition to and adherence to plant-based eating. A total of 95.6% of participants consume plant-based alternatives, such as animal-free sausages and cheese, although consumption frequency varies: 11% consume them daily, 43.1% several times a week and 36.5% a few times per month or less (Figure 2c). When asked whether the availability of plant-based alternatives helps them stay plant-based, 28.4% answered ‘yes’. The remaining 71.6% do not consider these alternatives a key factor in their adherence, either because their veganism is driven by ethical reasons (57.8%), where ethics outweigh convenience or because they focus on simple staples (13.9%) like fruits, vegetables, cereals and pulses

(Figure 2d). These findings emphasise the significant role of animal rights awareness and nutrition knowledge in promoting plant-based eating and supporting healthy, sustainable diets. Figure 2e illustrates the difference in food spending before and after adopting a plant-based diet. Over a third of participants (34.9%) spend less on their new diet, 31.8% spend the same, 18.8% spend more and 14.5% cannot compare (e.g., they have always eaten plant-based or were children when they transitioned). These findings challenge the myth that plant-based diets are expensive, a notion debunked by global research on diet costs (Springmann et al. 2021). Our results align with studies showing that plant-based diets are more affordable, particularly, when based on whole food staples or traditional dishes (Kahleova et al. 2023; Pais et al. 2022), with a 16% reduction in spending. However, the higher cost of ‘vegan products’, like substitute meats and cheeses, reflects factors such as their minority status, lack of production incentives, prevalence of organic ingredients and the perception that consumers are willing to pay more. Of the 490 respondents, only 2.4% would consider returning to animal products (Figure 2f), suggesting a strong likelihood that plant-based eating will become a long-term choice for other population groups, given the right motivators.

3.3 | Drivers, Challenges and Perceived Benefits of Plant-Based Eating

The single-select (and optional) question ‘Have you noticed any changes in your health and well-being after going plant-based?’ received 488 responses. The vast majority (94.1%) reported beneficial health outcomes after adopting a plant-based diet. Only

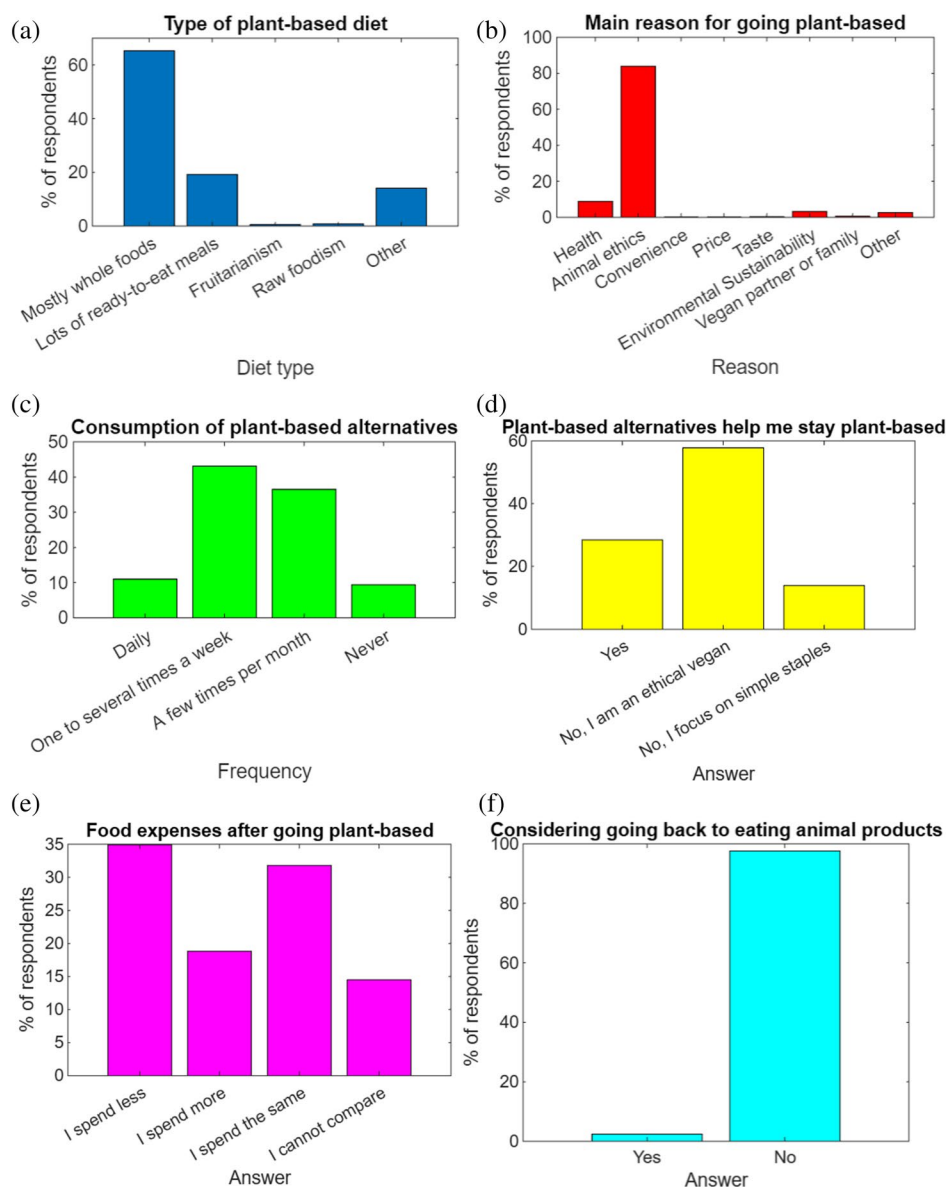


FIGURE 2 | Eating habits and motivations: (a) type of plant-based diet, (b) main reason for going plant-based, (c) frequency of consumption of plant-based alternatives, (d) plant-based alternatives as motivators for plant-based eating, (e) food expenses after going plant-based and (f) possibility of giving up on plant-based eating.

3.6% of respondents did not notice any changes and 2.3% reported a decline in health after the transition (Figure 3a).

When asked the open-ended (optional) question, ‘What changes did you notice in your health and well-being after going plant-based?’, 410 respondents shared a range of mental, physical and emotional health changes. After excluding 17 unclear responses (e.g., one participant simply stated, ‘I put on weight’, without specifying whether it was positive or negative), the remaining 393 respondents reported multiple benefits from adopting a plant-based diet. The 10 most cited beneficial outcomes are summarised in Figure 3b, with the most common being increased energy and focus (132 responses), improved digestion (93 responses) and enhanced mental well-being (91 responses). These results are particularly significant given the ongoing global mental health crisis (WHO 2022a, 2022b). Out of the 393 filtered responses, only nine (2.3%) reported negative health changes

after adopting a plant-based diet, with examples including ‘weakness’ (1 respondent), ‘my iron levels are worse’ (1 respondent) and ‘binge eating, weight gain, skin issues, mood swings’ (1 respondent). Additionally, 14 respondents (3.5%) reported no noticeable health changes, either because they had previously consumed very few animal products or were too young when they transitioned to a plant-based diet.

Figure 4 illustrates the motivators and obstacles to adopting a plant-based diet based on 490 valid responses. Educational resources, animal rights activism and social factors (e.g., relationships with pets or vegan friends and family) were key influences. The top five motivators were ‘documentaries, books and TV shows’ (52.4%), ‘evidence-based books and articles’ (38.0%), ‘posts and videos on social media’ (36.3%), ‘having a companion animal’ (32.4%) and ‘having vegan friends or family’ (28.8%) (Figure 4a). These findings highlight that

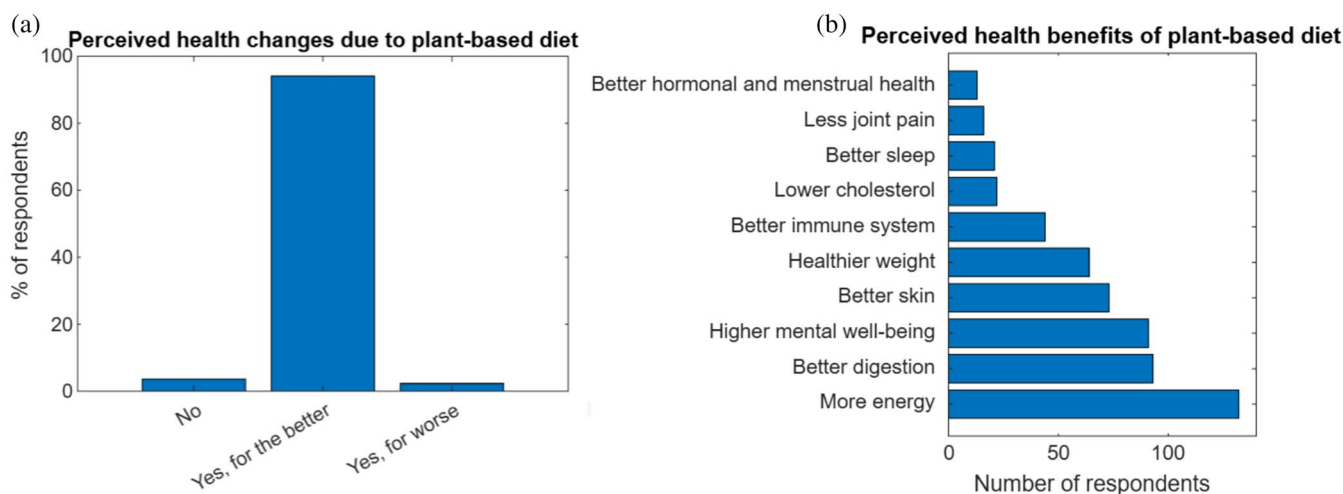


FIGURE 3 | Health outcomes of plant-based diets: (a) overall health change and (b) most reported health benefits.

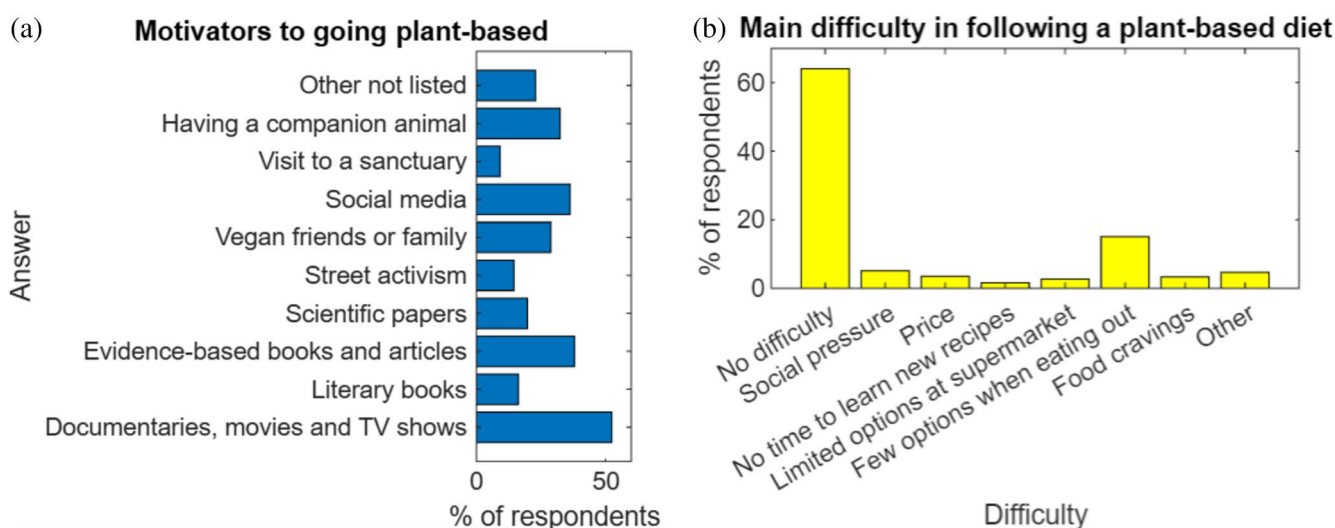


FIGURE 4 | Plant-based eating: (a) motivators and (b) difficulties.

exposure to educational content, along with connections to animals and animal rights advocates, plays a significant role in shifting eating behaviours and attitudes. Most respondents did not report facing any difficulties *staying* plant-based (64.1%), which may be attributed to ethics-driven motivations, better knowledge of health and nutrition and other factors that dilute challenges. A significant 15.1% of respondents find it challenging to find plant-based options at cafeterias and restaurants. ‘Social pressure’, ‘price’ and ‘not enough plant-based alternatives at the supermarket’ were mentioned as main difficulties by 5.1%, 3.5% and 2.7% of participants, respectively (Figure 4b).

To better understand the factors preventing or delaying the *transition* to a plant-based diet, participants were asked, ‘Which of these were obstacles in your process of becoming plant-based?’ as a multiple-choice question (Figure 5). Approximately one-third (33.5%) of respondents reported not experiencing any problems, suggesting that ethical motivations may have played a more significant role in their decision to adopt a plant-based diet than health, environmental or social concerns, such as the desire to align with the majority.

Alternatively, it is possible that their initial choice was further reinforced by animal rights activism and educational resources focused on personal and planetary health. Out of the subset that did face challenges, most were related to ‘limited plant-based alternatives to traditional animal products’ (23.9%), ‘not knowing what to eat’ (22.2%), ‘insufficient knowledge of animal food production’ (22.0%) and ‘lack of information on diet and health’ (21.0%). Smaller percentages reported ‘family pressure’ (19.0%), ‘food cravings’ (17.3%), ‘misconceptions about the environmental impact of animal products’ (14.1%), ‘fear of social stigma’ (13.3%), ‘financial constraints’ (6.9%) and ‘difficult access to staples (i.e., fruits, vegetables, cereals and pulses)’ (2.9%) (Figure 5).

3.4 | Animal Rights and Plant-Based Diets

To explore the role of animal rights awareness in adopting plant-based diets, the survey included questions on veganism, vegan activism and participants’ relationships with vegans. Figure 6a shows that 56.9% of respondents knew at least one vegan person (in person or online) before transitioning to a plant-based diet.

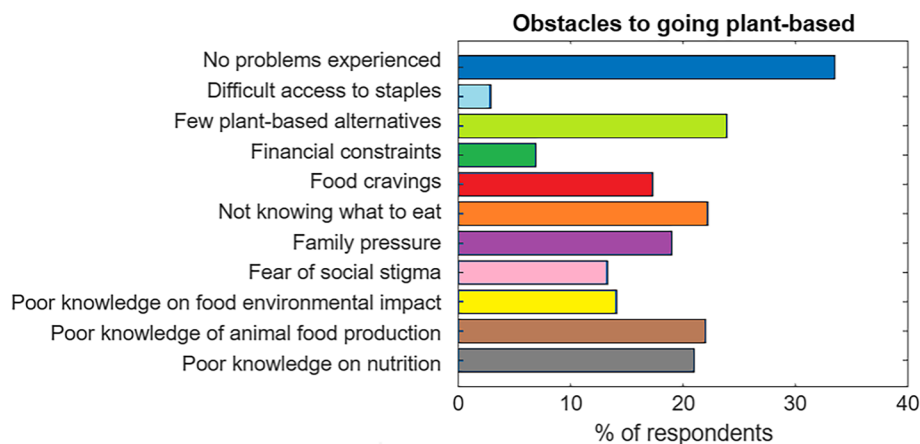


FIGURE 5 | Obstacles in the process of adopting a plant-based diet.

This suggests that contact with individuals advocating for animal rights is a key influence or even an enabling factor, in adopting plant-based diets. Conversely, 43.1% of respondents who did not have vegan acquaintances before the transition indicate that other factors, such as personal health, environmental concerns, food accessibility, cultural influences, nutrition education and media exposure to the impacts of animal agriculture, also play crucial roles. Socio-economic factors like income and location, along with family dynamics, social norms and peer influence, may further shape dietary choices, regardless of direct contact with vegans or vegan activism. Figure 6b shows that exposure to animal farm footage is an effective strategy to inspire plant-based eating. Over two-thirds (66.5%) of participants said that animal farm footage inspired them to go plant-based, versus 21.8% who were not inspired and 11.6% who answered 'does not apply'. The 11.6% group may be influenced by different factors, such as never being exposed to photos and videos of animal farming practices before adopting a plant-based diet. Overall, Figure 6b underscores the effectiveness of visual media in raising awareness of the ethical issues related to animal agriculture.

Figure 6c touches on a much-debated matter in animal advocacy: whether single-issue animal welfare campaigns help raise awareness of the inherent injustice of animal use. Some argue that campaigns focusing on specific practices, such as banning pig crates or bird debeaking, may imply that there is a 'humane' way to exploit sentient beings, thus reinforcing systems of oppression. Others contend that single-issue campaigns can highlight the inevitable suffering involved in animal use and accelerate animal liberation, especially when paired with the message that going vegan is the solution. Survey results show that while most participants (55.1%) did not find single-issue campaigns helpful, a significant portion (44.9%) did, suggesting that a more inclusive approach to advocacy may be the most effective.

We also sought to understand the participant's conception of 'veganism' by asking a text-entry optional question: 'What does veganism mean to you?' The question received 482 relevant responses. The majority of answers reflected a strong understanding of veganism as an ethics-based lifestyle, though a few respondents associated veganism and animal rights solely with dietary choices. Figure 7 illustrates the most frequent words used by the respondents to explain the meaning of veganism.

Our final question, 'Are you hopeful that veganism will grow?' received 482 relevant responses. The majority (97.5%) expressed strong optimism and commitment, while 2.5% showed less confidence, despite supporting veganism or plant-based eating.

3.5 | Statistical Analysis

Figure 8 presents a heatmap of Cramér's V associations between variable pairs pertaining to the 15 multiple-choice survey questions. Of the 63 combinations of variables that showed significant relationships ($\chi^2 p < 0.05$), 57 pairs had Cramér's V values indicating weak associations (0.10–0.30), while 1 pair showed a strong association (0.90) and 5 pairs, listed in Table 2, showed moderate associations (0.30–0.50). As expected, the strongest association was observed between the number of years on a plant-based diet (PB_Yrs) and the number of years as vegan (Veg_Yrs).

The second strongest correspondence was observed between *Campaign* (12) and *Footage* (13), with 89.55% (197 out of 220) of participants who viewed single-issue campaigns as effective in promoting plant-based eating (*campaign-yes*) also reporting that footage of animal farms motivated them to adopt a plant-based diet (*footage-yes*). In addition, the variable 'Return' (15) showed moderate correspondences with 'PB_Diff' (8), 'Reason' (6) and 'Veg_Yrs' (4), identifying a small subpopulation with distinct response patterns to these three questions. Among the 12 participants (2.44%) who indicated they might return to eating animal products:

- 41.67% reported 'food cravings' as their main difficulty in following a plant-based diet (PB_Diff)
- 50% cited 'health' as their primary reason for adopting it (Reason)
- 66.66% had either been vegan for less than 2 years (33.33%) or did not identify as vegan at all (33%).

In contrast, 88.31% of participants who stated they would not return to animal products had more than 2 years of vegan experience (33.19% between 1 and 7 years, 36.53% between 7 and 15 years, and 18.58% over 15 years).

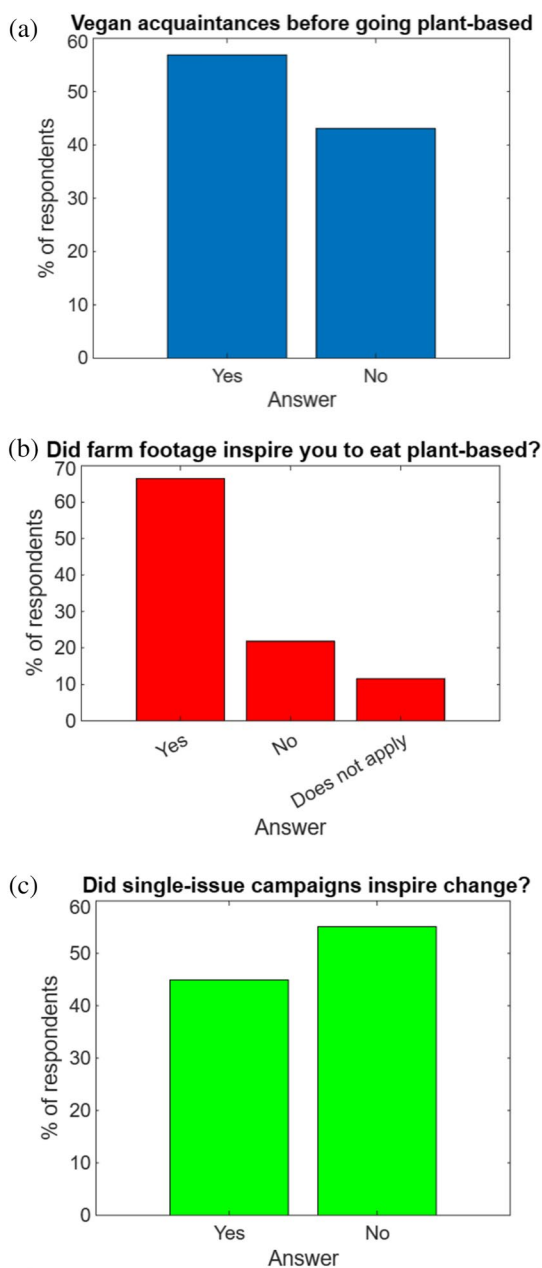


FIGURE 6 | Impact of exposure to veganism on the adoption of plant-based diets: (a) vegan acquaintances, (b) animal farm footage and (c) animal welfare single-issue campaigns.

Finally, the correspondence between ‘Alt_Use’ (14) and ‘Reason’ (6), shown in Figure 9, illustrates how the preferences for plant-based alternatives alter the pattern of reasons for adopting a plant-based diet. From the three Alt-Use categories, the class that differed the most was among the 68 participants who preferred simple staples over plant-based alternatives. From these, 32.35% (22 participants) cited ‘Health’ as their main reason for a plant-based diet, while 48.53% (33 participants) identified ‘Animal ethics’. In contrast, when looking at the overall dataset (491 participants), only 8.76% (43) answered ‘Health’ as the main reason for the plant-based diet, while 83.91% (412) answered ‘Animal ethics’. The bar chart in Figure 9 indicates that the availability of plant-based alternatives helps participants.

stay plant-based (Alt_Use(14)).

3.6 | Strategies to Promote Plant-Based Eating

Based on the survey findings, we propose strategies to help individuals transition to and sustain a plant-based diet. These suggestions are drawn from responses addressing (a) the main obstacles to adopting a plant-based diet, (b) key challenges faced in maintaining it and (c) the primary motivators for going plant-based (Figures 4 and 5).

3.6.1 | Practical Availability

The biggest obstacle to *going* plant-based was ‘limited plant-based alternatives to traditional animal products’ (23.9%) (Figure 5), which correlates with the main difficulty identified in *following* a plant-based diet, that is, ‘few options when eating out’ (15.1%) (Figure 4b). The practical availability of plant-based ingredients, products and dishes can be increased through strategies across three key areas: (1) food technology, (2) business and community awareness initiatives and (3) policy and legislation. Notably, policy and legislation strongly influence the first two areas.

3.6.1.1 | Food Technology. Food engineering offers innovative approaches to develop new or improve existing plant-based foods and beverages in response to limited plant-based alternatives in the market. This includes research and development aimed at producing meat, dairy, egg and seafood substitutes that replicate the taste, texture and other sensory properties of animal-derived products while ensuring a healthy nutritional profile. Some notable solutions include:

- i. *Animal-free food formulation design.* Animal-free materials encompass traditional ingredients (e.g., plants, fungi and algae) and novel solutions, including unconventional crops, food processing by-products and microorganism-based proteins, nutrients and flavours (Kinney 2019). Optimal results are achieved by coupling research into ingredient functionality, cost and technological performance with mathematical tools to optimise food formulations for sensory appeal, nutrition and extended shelf-life (Perussello and Frias 2021). Regarding proteins, a global analysis by Nirmal et al. (2024) demonstrates that alternative protein sources have the potential to reduce resource inputs—such as land, water and energy—by up to 70% relative to conventional animal-derived proteins, while delivering similar nutritional profiles.
- ii. *Conventional food technologies adapted to plant-based formulations.* Many processing methods have long been refined in animal products. For instance, traditional fermentation by lactic acid bacteria and fungi has been explored for centuries in dairy cheese and is still the object of intense research. Further exploring conventional technologies in plant materials can yield animal-free foods with improved sensory attributes, including realistic plant-based cheese (McClements and Grossmann 2021).
- iii. *Blend novel and traditional food technologies.* The food industry combines processing methods to achieve products with specific characteristics. In plant-based alternatives, merging innovative and traditional technologies

animal-free ingredients into desired shapes, textures and structures. One example is plant-based fish analogues, where a scaffold material mimics the fibrous structure of muscle tissue. In turn, technologies such as cold plasma and ultrasonic processing offer gentle and efficient methods to enhance the sensory attributes and extend the shelf-life of plant-based products.

v. *Cellular agriculture.* Cellular agriculture is an emerging field that produces animal-derived products from cell cultures, offering a sustainable alternative to conventional livestock systems. One branch, precision fermentation, uses genetically engineered microorganisms to produce functional ingredients—such as animal-free proteins, fats and enzymes—that replicate the taste and texture of animal products. For example, researchers and biotechnology

companies are developing casein through microbial fermentation to create cheese analogues with sensory and rheological properties similar to traditional cheese (Augustin et al. 2023). Other techniques, such as tissue engineering and cellular biology, enable the growth of muscle and mammary cells directly from animal stem cells in controlled environments, eliminating the need to raise and slaughter animals. Additionally, 3D printing of cultured meat can enhance sensory quality (Handral et al. 2020).

vi. *Modelling and simulation.* Mathematical modelling and computer simulation (M&S) are powerful tools for predicting the behaviour of products and systems, substantially reducing time and resources in food product development. M&S finds applications across the entire supply chain, from food formulation design to process optimisation and packaging, distribution and storage (Datta et al. 2022). This approach can expand the availability of plant-based products, reaching more consumers at a lower cost.

TABLE 2 | Pairs of variables with moderate associations according to Cohen's thresholds and Cramér's *V* values.

Variable 1	Variable 2	Cramér's	
		<i>V</i>	$\chi^2 p$
'Campaign' (12)	'Footage'(13)	0.45	2.2544e-22
'Return' (15)	'PB_Diff'(8)	0.37	4.4992e-12
'Return'(15)	'Reason'(6)	0.37	5.1801e-12
'Alt_Use'(14)	'Reason'(6)	0.36	7.7225e-20
'Return' (15)	'Veg_Yrs' (4)	0.31	2.6097e-09

Industry and government funding disproportionately supports research on animal-based products, thereby constraining scientific advancement in animal-free food (Vallone and Lambin 2023; Kortleve et al. 2024). With more balanced funding allocation, there is massive potential for innovative research to transition plant-based alternatives from niche markets to mainstream consumption. Nirmal et al. (2024) also point out regulatory hurdles as an obstacle to alternative protein consumption. It is worth noting that plant-based eating *does not require* animal product analogues. In fact, as discussed previously, 65.3% of our

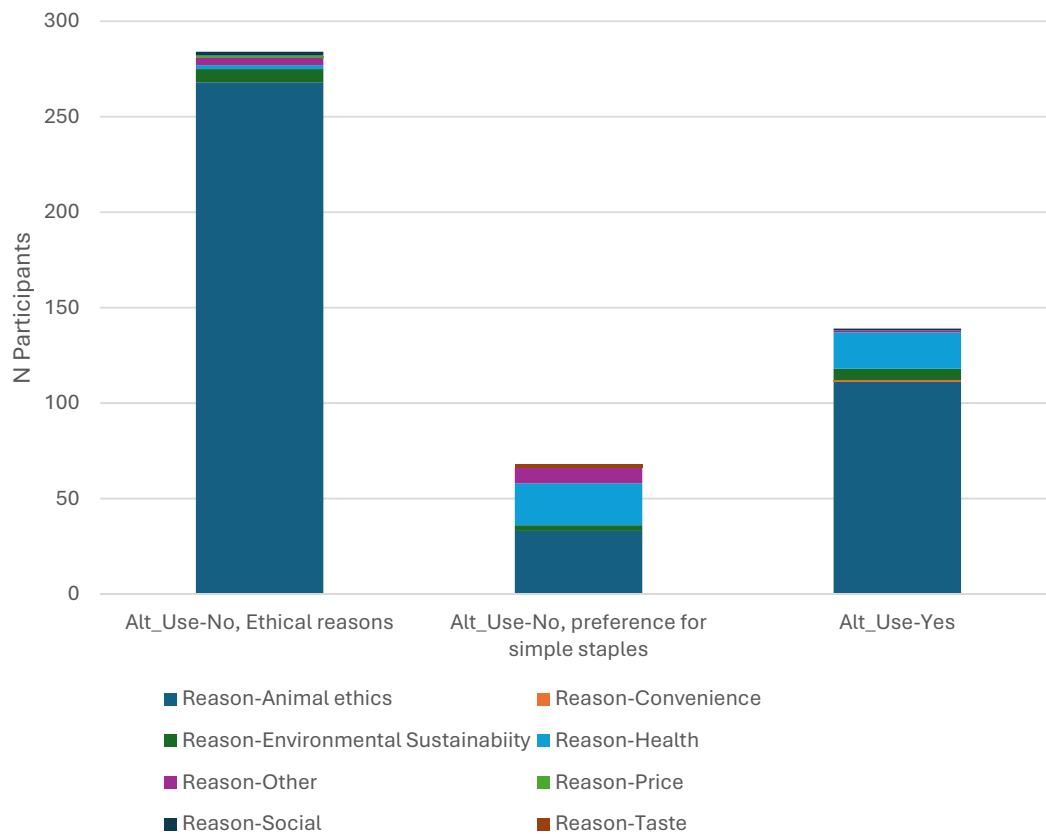


FIGURE 9 | Impact of availability of plant-based alternatives (Alt_Use(14)) to traditional animal products on the adherence to plant-based diets categorised by reason for becoming vegan (Reason(6)).

survey respondents reported consuming exclusively or mostly whole foods, such as fruits, vegetables, cereal grains, beans, nuts and seeds (Figure 2a).

3.6.1.2 | Business and Community Awareness Initiatives. The practical availability of plant-based foods can also be facilitated by guidance on plant-based food shopping, cooking and ingredient replacement aimed at the general public and food businesses. These tactics address the two main obstacles outlined by the respondents in *becoming* plant-based: ‘limited plant-based alternatives’ (reported by 23.9% of participants) and ‘not knowing what to eat’ (22.2%) (Figure 5), as well as the main difficulty in *following* a plant-based diet, that is, ‘few options when eating out’ (15.1%) (Figure 4b). These findings are supported by a consumer survey conducted by Lopez et al. (2023), who concluded that ‘The most effective strategy for helping all others to become vegan was to provide information about shopping, meal preparation, cooking and the cost-effectiveness of veganism (40.2%).’ and ‘The main barrier identified by individuals when making the transition to veganism was lack of culinary/cooking/shopping knowledge (28.6%).’ Working with food processors and supermarkets is another efficient strategy to promote broader availability of plant-based foods.

Improved labelling and nudging in restaurants, cafes and stores can also encourage the choice of animal-free foods. For example, in Lidl Germany, sales of plant-based alternatives increased by 30% in 6 months by placing them next to animal products (Hamlett 2024). In Brazil, the EscolhaVeg project, run by the nonprofit Mercy for Animals, supports food companies with business reports and free consultancy on food technology and nutrition. Expanding such initiatives can promote a better food system.

3.6.1.3 | Policy and Legislation. While food system transformation has become an urgent focus within the scientific community (Di et al. 2023; Reisinger and Clark 2018), little effort has been made by stakeholders and policymakers in this direction. Research shows that 82% of EU farming subsidies (through the Common Agricultural Policy—CAP) support animal agriculture, a sector that dominates land use and releases up to 84% of the EU’s food GHGs to supply just a third of total calories (Kortleve et al. 2024). Public funding for animal-free food technologies lags significantly behind that allocated for animal products, with ratios of 1:1200 in the EU and 1:800 in the US (Vallone and Lambin 2023). Public funding for animal-free food technologies is significantly lower, with EU and US ratios of 1:1200 and 1:800, respectively (Vallone and Lambin 2023). Lobbying investments for innovation in animal products are also much higher—three times greater in the EU and 190 times greater in the United States (Vallone and Lambin 2023). A shift in agri-food policy is essential to foster research in sustainable alternatives.

3.6.2 | Animal Ethics Education

The overwhelming majority of participants (83.9%) cited ethical concerns for non-human animals as their main reason for going plant-based. This finding is supported by many other

studies (Lopez et al. 2023; Lindeman and Sirelius 2001; North, Klas, et al. 2021), but contrasts with Miki et al. (2019). Ethical reasons for adopting a plant-based diet lead to more stable lifestyle changes that are less susceptible to difficulties. Studies show that individuals following plant-based diets for ethical reasons tend to be more motivated and maintain the diet longer, often for life (Hoffman et al. 2013; Radnitz et al. 2015). This may be because ethical commitments shape personal motivation and perceptions, making animal consumption no longer feel like an ‘option’ (Panizza 2020). Our findings support this conclusion, as most vegan respondents reported no difficulties in maintaining a plant-based diet. Additionally, mental well-being was frequently cited as a key benefit, with many respondents feeling they were living a more ethically consistent life (Figure 3).

Participants indicated educational material as the most effective source in persuading them to adopt a plant-based diet (Figure 4a). Linking the findings about *reasons* with the findings about *sources*, it appears that education about animals in the food industry is more effective at fostering long-term, stable dietary changes than education focused on health or environmental aspects. Specifically, education about the lives of ‘farmed’ animals and animal ethics is the most effective in promoting and sustaining plant-based diets. While both ethical arguments and facts are crucial, factual information itself is highly motivating. This is supported by responses to our question on obstacles to going plant-based, where the third most common barrier was ‘insufficient knowledge of animal food production’ (22.0%). Once participants gained this knowledge, the facts provided strong reasons to stop supporting animal use. Information sharing should be paired with efforts to limit misleading advertising in the livestock industry, which has been difficult to regulate due to lobbying and the sector’s economic influence (Changing Markets Foundation 2024).

When information is not sufficient for individual motivation (e.g., due to ingrained notions about animal use since early childhood), it is important to supplement it with ethical argumentation, which is essential for exploring one’s intuitive moral understandings. This form of education is recommended from primary schools to universities (Hussar and Harris 2010).

The top sources of education material indicated in the survey were ‘documentaries, books and TV shows’ (52.4%); these were followed by ‘evidence-based books and articles’ (38.0%), with ‘posts and videos on social media’ as a close third (36.3%). This suggests that social media users can have an impact on others’ perception and motivation by selecting and sharing information (Li, et al. 2022; Rini et al. 2024). Books that have had a significant impact on people’s dietary transition include Peter Singer’s *Animal Liberation* (Singer 1975) to Jonathan Safran Foer’s *Eating Animals* (2009), while recent successful documentaries have been *Earthlings* (2005), *Cowspiracy* (2014), *What the Health* (2017), *Dominion* (2018), *Game Changers* (2019) and *Food for Profit* (2024) (Hartwell et al. 2021). Our findings support the production and large-scale, free availability of such material to increase awareness and motivation.

Finally, ‘having a companion animal’ was the main motivator for 32.4% of participants, indicating that exposure, emotional

bonding and social ties are crucial to the awareness of the value of animals' lives. Encouraging sanctuary visits and reflection on personal relationships with animals are also valuable tools for fostering moral understanding and affective awareness (Beggs and Anderson 2020).

3.6.3 | Nutrition and Environmental Education

Among the obstacles reported by the survey respondents in *adopting* a plant-based diet, a 'lack of information on diet and health' and 'misconceptions about the environmental impact of animal products' were pointed out by 21.0% and 14.1% of participants, respectively (Figure 5). Balanced plant-based diets have been consistently associated with various health benefits, including a longer life span and reduced risk of chronic diseases such as heart disease, hypertension, Type 2 diabetes, obesity, endometriosis, kidney disease and cancer (Lucas et al. 2023; Kassam and Freeman 2021). As a response to growing scientific evidence, efforts have been made by hospitals, health professional associations and national nutritional guidelines to encourage a shift towards more plant-based and fewer animal products (Kassam and Freeman 2021). Nonetheless, the global landscape is plagued by misconceptions on food and nutrition, especially regarding plant-based eating. Additionally, there is a concerning level of misinformation among the general public about the harmful impacts of animal agriculture on the climate and ecological crises (Changing Markets Foundation 2024).

Misinformation on diet and health is largely driven by corporate and political actions within the agrifood industry. For example, *the Dublin Declaration of Scientists on the Societal Role of Livestock*, launched by the Irish agricultural agency Teagasc in 2023, argues for the nutritional, environmental and social benefits of meat-eating (Multiple authors 2023). This position stands in stark contrast to the robust and growing body of scientific evidence demonstrating that significant reductions in meat intake—particularly, in high-income countries—are essential to mitigating the climate crisis, halting biodiversity loss and lowering the incidence of diet-related diseases such as cardiovascular disorders and colorectal cancer (Yang et al. 2023; Di et al. 2023; Eisen and Brown 2022). The Declaration has been used by researchers and industry groups in lobbying efforts against EU political discussions aiming at promoting reduced meat consumption for health and climate reasons (Krattenmacher et al. 2024; Carrington 2023). Despite criticism for misleading information and ties to the animal farming sector (Bryant et al. 2024; Krattenmacher et al. 2024), this document continues to influence public opinion, with a website actively gathering signatures. The authors defend their position by characterising criticisms in peer-reviewed papers as 'underpowered analysis' (Belk et al. 2025). Another example is the resistance of the animal industry against Health Canada, the country's food guide, after their nutritional advice towards more plant-based proteins in the 2019 edition. A comprehensive review highlighted four main strategies used by the food industry to undermine the guide's advice, including information suppression, framing discourse, lobbying and building support networks (Robitaille et al. 2023). Similarly, the Changing Markets Foundation (2024) reveals tactics such as marketing meat as a 'green and healthy'

option, influencing education systems and lobbying against climate policies.

Yang et al. (2023) used a system dynamics-based integrated assessment model to evaluate the effectiveness of five response strategies in achieving a sustainable global food system by 2100: plant-rich diets (not necessarily 100% plant-based), healthy calorie intake, high resource-utilisation efficiency, high crop yields and reduced waste. The five environmental indicators assessed were climate change, land system change, nitrogen cycling, phosphorus cycling and freshwater use. Among these, plant-rich diets showed the greatest benefits across all indicators, significantly reducing food-related ecological pressures. The largest impact was observed in GHG emissions, with a 51% reduction by 2050, while the smallest benefit was seen in freshwater use, with a modest 4% reduction—still an improvement over the baseline. The benefits of plant-rich diets were maximised when combined with reduced food waste. Notably, no intervention alone was able to keep cropland use within the safe zone, requiring a combination of one or more strategies, especially in terms of phosphorus application (all interventions required). However, the results show that plant-rich diets alone can bring GHG emissions levels back to a safe boundary. The authors also explain how a plant-rich diet can contribute to achieving several SDGs, including Zero Hunger (SDG 2), Good Health and Well-being (SDG 3), Responsible Consumption and Production (SDG 12), Climate Action (SDG 13), Life Below Water (SDG 14) and Life on Land (SDG 15).

A unified effort is required to spread accurate, evidence-based information on the benefits of plant-based diets and challenge industries and researchers protecting the status quo at the expense of human and planetary health.

3.6.3.1 | Educating School and University Students. Integrating nutrition and environmental science into the core curriculum can help students understand the multidimensional impacts of their food choices. Schools could implement interactive workshops and cooking classes focused on plant-based meals. Universities should enhance or create courses on sustainable food systems, incorporating interdisciplinary curricula with experts from engineering, agriculture, nutrition, medicine and environmental sciences.

Currently, many food system sustainability programmes are influenced by industry interests, especially from the livestock sector, which leads to an overemphasis on improving animal agriculture instead of promoting farm diversification and plant-based foods. This focus leaves societal challenges unaddressed. Additionally, the lack of system-level and critical thinking in education perpetuates a cycle where future educators are ill-equipped to drive meaningful change. Medicine, nutrition and food science courses should integrate modern scientific evidence on diet and health to dispel confusion about the role of food in disease prevention. By emphasising plant-based diets, these programmes can better prepare future professionals to advocate for evidence-based dietary practices and address common misconceptions. School cafeterias and university dining services can also play a crucial role by expanding the availability of plant-based options, normalising plant-based diets. This would serve as an indirect form of education and awareness within the educational system.

3.6.3.2 | Educating Food Businesses and the General Public. For food businesses, education on diet and health can be supported through industry seminars and certification programmes focused on plant-based menu implementation. Public awareness campaigns, announcements and community events can effectively promote the health and environmental benefits of plant-based diets. To counteract extensive marketing by the meat and dairy industries, evidence-based strategies should be used to encourage plant-based eating. Collaborations with health departments and non-profits can amplify these messages, offering cooking demonstrations, scientific reports, nutritional counselling and plant-based food festivals. Non-profit Plant-Based Health Professionals UK, for instance, provides science-based information to health practitioners and the public, aiming to improve health outcomes through dietary interventions.

Furthermore, recognising that many traditional dishes worldwide are naturally plant-based is essential for normalising plant-based eating and veganism. Examples include pasta with beans, pizza marinara and caponata in Italy; tempeh in Indonesia; falafel, hummus and tabbouleh in the Middle East; ratatouille in France; gazpacho in Spain and aloo gobi and chana masala in India. Many plant-based ingredients considered alternatives in some regions are integral to traditional cuisines elsewhere. For example, coconut milk and cream in Brazil are common ingredients rather than dairy substitutes. Embracing and celebrating these culinary traditions can help integrate plant-based diets into mainstream eating habits.

3.6.4 | Social Support

The second difficulty identified in *following* a plant-based diet was 'social pressure', although reported by only 5.1% of participants. A similar obstacle was identified in *going* plant-based, related to 'family pressure' (19.0%), which ranked fifth. Among those who selected 'social pressure' as their primary obstacle to staying plant-based, a slight majority did not have vegan acquaintances before transitioning (52%).

Among those who identified social pressure as an obstacle to *staying* plant-based, 32% also identified fear of social stigma or family pressure as obstacles to *becoming* plant-based. These findings suggest that social pressure and isolation play a crucial role in hindering people from transitioning to or maintaining a plant-based diet. This aligns with other studies, especially regarding hostility towards vegans (Markowski and Roxburgh 2019; Corrin and Papadopoulos 2017; Twine 2014).

Possible interventions to help individuals struggling with social issues due to their plant-based diet fall into two categories: offering social support for plant-based individuals and educating others to reduce hostility towards those following a plant-based diet. Interventions focused on the former include providing mentoring programmes and groups where struggles can be shared, such as vegan societies. Although both online and in-person support is beneficial, with the former being more accessible, in-person encounters can foster a greater sense of social belonging and reduce isolation.

Regarding hostility, MacInnis and Hodson (2017) found that meat-eaters' attitudes towards ethical vegans are more negative than towards people following a plant-based diet for health reasons. If, as our study suggests, most plant-based individuals are motivated by ethical reasons, it means that most of them will eventually face discrimination. Furthermore, it suggests that non-vegans' discomfort and anger stem from the presence of a minority group, a perceived ethical judgement or the threat of finding one's own actions ethically wanting. Hostile attitudes towards 'vegan' and 'plant-based' identities should shift focus from individuals to the real victims of current eating norms—the animals—who are the true focus of the vegan identity. These factors make the previous suggestion related to ethical reflection in education, particularly, pressing, so both groups have the tools to reflect on the sources, reasons and consequences of their lifestyle and their explicit or hidden ethical commitments.

Increasing education in philosophy, critical thinking, self-reflection and respectful discussion would be invaluable. In higher education, promoting transparency and encouraging ethical debates about animal use in courses such as Agricultural Engineering, Food Engineering, Chemical Engineering, Food Science and Veterinary Science can drive meaningful change. Additionally, fostering fair representation of plant-based and vegan individuals in the media, highlighting their greater propensity for prosocial behaviour (Alnasser and Alomran 2023), could further support this shift.

4 | Study Limitations and Further Research

While our survey was carefully designed, distributed and analysed, several limitations may have influenced the results. The convenience sampling method may have introduced biases, limiting the ability to generalise findings to the broader population of plant-based diet adherents. For example, conducting the survey online likely excluded individuals without internet access, such as certain younger, elderly or economically vulnerable participants. Additionally, the survey may have missed individuals who follow a plant-based diet but do not engage with social media. The survey's exclusive use of English may have further skewed the sample towards native speakers, those in the northern hemisphere and individuals with higher education levels. The authors' European base could also have influenced sampling due to stronger local connections. Finally, the anonymity of the survey may have allowed responses from individuals who consume animal products or hold negative views about veganism. To mitigate these risks, we distributed the survey across diverse platforms and included demographic questions to analyse potential biases. We also used answer cross-checking and open questions to detect insincere or irrelevant responses. While the sample size of approximately 500 respondents statistically represents the global population of plant-based eaters with a 5% margin of error at a 95% confidence level, some regional or demographic groups may still be underrepresented due to the targeted outreach recruitment method and the other factors outlined above.

Future research should aim for a broader, more diverse sample to better represent the global population. Multilingual surveys could reduce language and geographical biases, and

combining online and offline data collection methods would ensure the inclusion of individuals who do not use digital platforms. Additionally, future studies should explore the psychological factors and stigma associated with veganism, providing more nuanced insights to develop effective strategies for promoting ethical and sustainable dietary choices.

5 | Conclusions

In our study, ethics emerged as the predominant motivation for adopting a plant-based diet (83.9%), followed by health considerations (8.8%). Additionally, 95.5% of respondents identified as vegan, highlighting that plant-based eating was a key component of their ethical stance against animal use. The Top 5 obstacles preventing the adoption of a plant-based diet were 'limited plant-based alternatives' (reported by 23.9% of respondents), 'not knowing what to eat' (22.2%), 'insufficient knowledge of animal food production' (22.0%), 'lack of information on diet and health' (21.0%) and 'family pressure' (19.0%). Meanwhile, the Top 5 reasons that inspired plant-based eating were 'documentaries, movies and TV shows' (reported by 52.4% of participants), 'evidence-based books and articles' (38.0%), 'social media posts' (36.3%), 'having a companion animal' (32.4%) and 'vegan friends and family' (28.8%). Open-ended responses revealed that most participants (> 95%) demonstrated a deep understanding of veganism as a moral stance (rather than a mere dietary choice), as well as optimism regarding a future where animal oppression is no longer the norm.

These findings highlight multiple strategies to accelerate the transition to a sustainable and ethical food system. Reforming agri-food subsidies to prioritise horticulture and support farmers transitioning to sustainable land uses is essential, alongside ensuring balanced funding for research into plant-based food materials and technologies. Advancements in alternative protein research should be paired with business and community initiatives, such as culinary education and support for transitioning food processors and dining establishments. Strengthening higher education on nutrition and health, grounded in modern scientific evidence, is vital to address public health challenges. Mentoring programmes for plant-based and vegan adopters can provide critical guidance for sustained transitions, while integrating philosophy and ethics into curricula fosters critical thinking and ethical awareness of consumption patterns.

The question of transitioning to plant-based food systems is an urgent one. Veganism, a lifestyle that includes plant-based nutrition and extends its ethical principles to an encompassing practice and worldview against the oppression of sentient beings, is gaining momentum and must be recognised as pivotal to sustainable development. This paper offers valuable insights for researchers, policymakers, businesses and advocacy groups seeking to support an equitable, ethical and sustainable future.

Acknowledgements

The Open Access fees for this publication were covered by University College Dublin. This article also received funding from the Operational Programme Johannes Amos Comenius, call 'Excellent Research' (OP

JAK 'Špičkový výzkum'), European Regional Development Fund project "Beyond Security: Role of Conflict in Resilience-Building", No. CZ.02.01.01/00/22_008/0004595.

Conflicts of Interest

The first two authors are members of Vegan Studies Network. The first author is also a member of Sentient Rights Ireland.

Endnotes

¹The qualification 'as far as is possible and practicable', in the Vegan Society's (null) definition, is not meant to restrict veganism to cases when it is easy to avoid animal use. Rather, as we see it, it should refer to real difficulties such as avoiding life-saving medicines once tested on animals.

²While accepting that the concept of veganism, being relatively recent and politically controversial, is still 'in progress' (North, Kothe, et al. 2021).

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Appendix A

Informed Consent



Plant-based diet: motivations and habits among followers

Informed consent

This quick survey is targeted exclusively at people who follow a **100% plant-based diet**. You are invited to participate because your opinion is important to bring a deeper understanding of the process of dietary change among consumers across different geographical regions.

The survey takes 5-10 minutes to complete. Before you answer the questions, please read the two following definitions:

1. **Plant-based diet:** a diet free of animal-derived ingredients.
2. **Vegan:** an individual who opposes animal use, and therefore follows a plant-based diet.

Your information will be kept **confidential**. All data is stored in a password-protected electronic format. The survey will not contain any information that will personally identify you. The results of this study will be used for scholarly purposes only.