

Driving Change with **LIKE-A-PRO**

Results and Lessons from Behavioural
Intervention Pilots



Like a **PRO**

like-a-pro.eu



Funded by
the European Union



Imprint

Title	Driving Change with LIKE-A-PRO: Results and Lessons from Behavioural Intervention Pilots
Authors	Arlind Xhelili (leading author) Jannik Schüürmann Rosa Strube All at the Collaborating Centre on Sustainable Consumption and Production (CSCP)
Choice editing	Polymeros Chrysochou, ACG-RC All at the American College of Greece – Research Centre (ACG-RC)
Choice expansion	Bjørn Tore Nystrand, MØREFORSKING AS Inger Bye, MØREFORSKING AS Richard Nystad, FLOWFOOD AS
Choice environment	Laura Vázquez-Araújo, Basque Culinary Centre (BCC) Elena Romeo-Arroyo, Basque Culinary Centre (BCC) Lotte Vertriest, Foodlab PROEF Maxime Willems, Foodlab PROEF
Beyond choice	Sterre van der Waard, Stichting Nationale Week Zonder Vlees (WZV)
Reviewers	Laura Vázquez-Araújo, Basque Culinary Centre (BCC) Britt Sandvad, FOODCLUSTER Morena Silvestrini, Centro Nacional De Tecnologia Y Seguridad Alimentaria (CNTA)
Project title	LIKE-A-PRO. From niche to mainstream – alternative proteins for everybody and everywhere
Citation	Xhelili, A., Schüürmann, J., Strube, R., Ziavras, S., Perrea, T., Chrysochou, P., Nystrand, B., Bye, I., Nystad, R., Vázquez-Araújo, L., Romeo-Arroyo, E., Vertriest, L., Willems, M., van der Waard, S. (2026). Driving Change with LIKE-A-PRO: Results and Lessons from Behavioural Intervention Pilots. LIKE-A-PRO project. Wuppertal, 2026.
Design	soweit / Studio für Übergänge www.soweit.studio



**Funded by
the European Union**

This project is funded by the European Union under Grant Agreement No. 101083961.

Views and opinions expressed are however those of the author(s) and do not necessarily reflect those of the European Union or European Research Executive Agency. Neither the European Union nor the granting authority can be held responsible for them.

Table of Contents

1.	Introduction	5
1.1	Broader contexts and inspirations	6
1.2	LIKE-A-PRO – alternative proteins, consumer and food actor engagement	7
1.3	What is this report about?	8
2.	The LIKE-A-PRO behavioural interventions	9
2.1	The mandate and purpose of the LIKE-A-PRO behavioural intervention pilots	10
2.2	The Consumer Choice Framework.....	10
2.3	The COM-B Model.....	11
2.4	Behavioural science principles and tools	11
2.5	LIKE-A-PRO living labs first draft insights	17
3.	Four behavioural intervention pilots - from start to finish	19
3.1	Behavioural intervention pilot 1 focused on choice editing.....	20
3.2	Behavioural intervention pilot 2 focused on choice expansion	37
3.3	Behavioural intervention pilot 3 focused on choice environment.....	53
3.4	Behavioural intervention pilot 4 focused on beyond choice.....	67
4.	What does this all mean for the future?.....	84
5.	What's next and how to engage with us?.....	92
6.	Appendices.....	94
7.	References	134

List of tables

Table 1: Stepwise reduction of meat options during intervention weeks	22
Table 2: Summary of key outcomes across study waves (baseline vs intervention weeks)	29
Table 3: Structure of the choice-expansion intervention (retail pilot)	40
Table 4: A summary of the main outcomes.....	45
Table 5: Structure of the choice environment behavioural intervention pilot.....	56
Table 6: Sales outcomes by condition (counts) - LABe Spain.....	60
Table 7: Sales outcomes by condition (counts) - Bar Amelia (Belgium)	60
Table 8: Summary of key behavioural and perception signals	61
Table 9: Overview of experimental advertisements in English (health angle)	70
Table 10: Overview of experimental advertisements in English (sustainability angle).....	70
Table 11: Structure of the beyond choice behavioural intervention pilot.....	71
Table 12: Meta Results – Overall results	74
Table 13: Meta Results – by country	75
Table 14: Cross-country comparison – Downloads per thousand (RPM) with country winner highlighted	76

Table 15: Clustered results into COM-B (per pilot)	86
Table 16: Which actors can act on these insights and how	91
Table 17: Baseline Questionnaire (Pre-Intervention) for choice editing	95
Table 18: Intervention Questionnaire administered during weeks 1 and 2 of choice editing intervention.....	99
Table 19: Food consumption frequency by product category across study waves (Food Frequency Questionnaire)	108
Table 20: Support, acceptability, and perceived effectiveness of intervention strategies across study waves.....	111
Table 21: Socio-demographic background of the choice editing participant sample	112
Table 22: Consumer survey / questionnaire.....	113
Table 23: Socio-demographic background of the choice expansion pilot participant sample	116
Table 24: Interview guide and interviewee roles (choice expansion)	117
Table 25: Recipe developed by BCC.....	119
Table 26: Consumer survey / questionnaire.....	122
Table 27: Demographic data (%) of customers responding to the questionnaire in the restaurants conducting the behavioural pilots.	126
Table 28: Semi-structured interview guide with restaurant staff and interviewee roles	126
Table 29: Meta Results – By full sample demographics (all countries)	128
Table 30: Comment sentiments – The Netherlands	129
Table 31: Comment sentiments – Denmark.....	129
Table 32: Comment sentiments – Spain.....	129
Table 33: Semi-structured interview guide (campaign professionals)	130
Table 34: Overview of interview participants (Anonymised)	133

List of figures

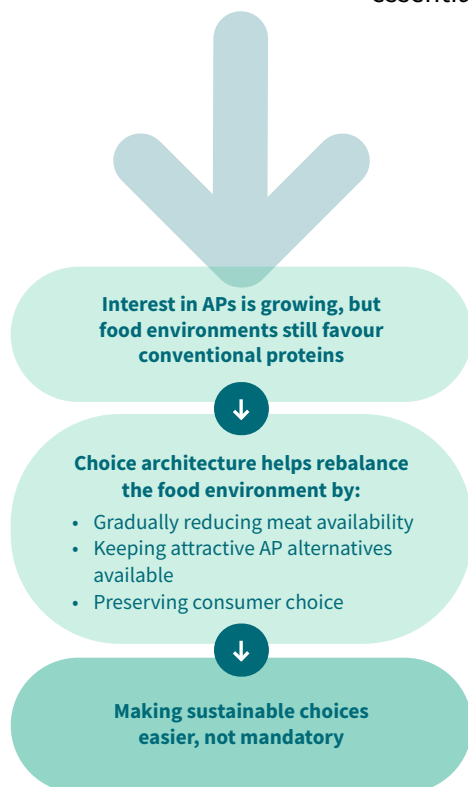
Figure 1: Implementation phases	23
Figure 2: Veggie Falafel ('clean label') vs. Veggie burger ('dirty label') (products used in the pilot).....	113
Figure 3: Menu from Bar Amelia (Belgian restaurant). Meat and veggie/vegan dishes were shown in the same menu for the integrated menu (week 1).....	121
Figure 4: Menu from Bar Amelia (Belgian restaurant). Only veggie/vegan (plant-based) options were shown on the chalkboard for the segregated menu (week 2).	121
Figure 5: Menu from LABe (English Version). Left side: integrated menu; right side: segregated menu	121
Figure 6: Example of NL 'Sustainability – Priming' frame in all Meta placements.....	128

1. Introduction



1.1 Broader contexts and inspirations

Across Europe, consumers are showing a growing curiosity toward alternative proteins (APs) [1]. These include plant-based, fermented, or other novel protein sources that offer a more sustainable and health-conscious alternative to conventional animal-based foods. This rising interest reflects a broader societal momentum toward building more sustainable food systems. It aligns closely with the ambitions of the European Green Deal [2] and the Farm to Fork Strategy [3]. At a policy level, there is increasing recognition that transforming protein consumption patterns is essential for achieving environmental, health, and climate-related goals.



Despite this encouraging trend, animal-based products still dominate European diets, accounting for approximately 67% of total protein intake. Data show that 94% of Europeans consume animal-derived foods daily [4]. This persistent dominance highlights the deeply embedded nature of food behaviours and the complexity involved in changing dietary habits. While many consumers express openness to APs, this interest does not always result in actual behaviour change.

Research has identified several interconnected barriers that limit the adoption of APs. Consumers often face a lack of awareness about the health and environmental benefits of these products. There are also negative expectations around taste and texture, uncertainty about nutritional quality, higher perceived costs, and limited availability in familiar food settings. In many cases, AP products are presented as niche options. They are often segregated in specific aisles or menu sections, and frequently labelled as “vegan” or “vegetarian”, which may deter curious consumers who do not identify with those categories. Cultural and social norms further reinforce the preference for meat-based meals, which can marginalise or discourage plant-based choices [5–11].

Although numerous initiatives, marketing efforts, and product innovations have emerged to promote APs, their impact remains limited. One key reason is that many efforts rely heavily on information provision and rational appeals, assuming that consumers will change their behaviour simply by learning more. However, behavioural science shows that food choices are rarely made through deliberate reasoning. Instead, they are shaped by habit, emotion, routine, and social influence, among other factors [12–15].

In light of this, there is a clear need to explore alternative approaches. Behavioural science offers practical tools to support change by adjusting how choices are presented. These tools can help reduce friction, lower decision fatigue, and make sustainable options more appealing and accessible.

To address these challenges, the LIKE-A-PRO behavioural intervention pilots were developed and implemented. The pilots explored how different behavioural strat-

egies could promote the uptake of APs and contribute to a broader shift toward sustainable consumption. Each pilot focused on one of four behavioural pathways. The first used choice editing, which involves reducing the visibility or availability of conventional protein options while maintaining consumer autonomy. The second centred on choice expansion by introducing APs in more prominent and appealing ways. The third focused on shaping the choice environment, for example through changes in presentation, naming, or positioning of products. Finally, the fourth pilot focused on beyond choice, aiming to influence consumer perceptions and intentions before the moment of choice.

The pilots were implemented across several European countries: Greece (institutional catering)-choice editing, Norway (retail)-choice expansion, Spain and Belgium (restaurants)-choice environment, and the Netherlands, Denmark and Spain (digital communication)-beyond choice. This diversity reflects the broad reach of food environments in shaping everyday eating habits. Although the settings and methods varied all interventions were grounded in behavioural insights. They were designed to be consumer-friendly, culturally relevant, and adaptable for scale.

Together, these pilots were designed to generate practical knowledge about what works in encouraging more sustainable food choices. The results help inform future strategies to reshape food environments across Europe and to make APs more visible, attractive, and easy to choose for a wider public.

1.2 LIKE-A-PRO - alternative proteins, consumer and food actor engagement

Inspired by and capitalising on these developments, the LIKE-A-PRO project aims to accelerate the shift towards and normalise healthier and more sustainable dietary patterns by diversifying and increasing the availability, accessibility and uptake of alternative sources of protein and specific products.

Twenty-two AP products were developed during the course of the project, based on ingredients from 7 protein sources which are novel, sustainable, EU-based, healthy, affordable and industry viable. In addition to these products, LIKE-A-PRO will co-design and promote other types of solutions, such as governance mechanisms which hold the potential to promote AP supply and products in food environments, including their promotion and uptake at the consumer level. Examples of these include policies that look at reducing the portfolio of unsustainable products, marketing strategies, guidelines for human-centric campaigns and similar.

Four interlinked and iterative clusters of activities support reaching out the project goals:

- **Food environments and consumers:** in this cluster, the focus is placed on better understanding the consumer behavioural determinants, their food choices and the necessary food environment (contextual) frameworks that enable a higher uptake of AP products.

- **AP product diversification and development:** the central goal of cluster 2 activities is to diversify the AP supply and develop new AP products, thereby increasing the availability and accessibility of such products in the European markets. Best product value propositions have been developed based on consumer, market and regulatory considerations.
- **Mobilising food system actors:** the project works with key food system actors to support them in utilising the project learnings and empower them to make AP products an easy and economically viable choice via their diversified and increased market supply and favourable food environment conditions.
- **Impact and regulatory assessment:** this cluster ensures that the project will bring about positive changes in terms of health and sustainability of the European food system. Socio-economic, health, and environmental impact assessments as well as alignment with regulatory and ethical considerations are central to this cluster.

The food environments and consumers, and to a lesser degree the development of AP products, are the clusters which interact with the consumer engagement activities through living labs as well as behavioural pilots, the latter subject of this report.

1.3 What is this report about?

The LIKE-A-PRO behavioural intervention pilots governance framework and learnings report outlines the four behavioural pilots and provides background on their conceptual foundations, development, implementation, and analysis. Each pilot is designed to build on prior learnings and insights, drawing in particular from the LIKE-A-PRO Living Labs [16], which serve as both inspiration and a theoretical foundation. Where applicable, the pilots also integrate existing research and external insights to ensure relevance and robustness.

The document presents each pilot from an operational perspective, detailing what was planned, how implementation was carried out, and which behavioural science principles informed the design. These principles are essential, as the pilots aim to apply consumer-oriented, people-centred approaches to generate effective, real-world solutions.

For each pilot, the report outlines the data-collection and evaluation methodologies used to assess effectiveness. The framework also identifies the implementing partners for each pilot, both internal and external to the LIKE-A-PRO project. In addition, the report presents findings and results for each pilot and situates them in an individual pilot outlook. It then provides a joint outlook on what the results mean for the future.

The report concludes with key information on what will happen next in the project and what readers can expect.

2. The **LIKE-A-PRO** behavioural interventions



2.1 The mandate and purpose of the LIKE-A-PRO behavioural intervention pilots

The behavioural intervention pilots were developed to explore how different strategies can promote the uptake of APs and support a broader transition toward sustainable consumption. Each pilot tested a distinct behavioural pathways namely, choice editing, choice expansion, choice environment, and beyond choice (angles of the Consumer Choice Framework, please see below) across diverse food settings, ranging from university canteens and supermarkets to restaurants and digital platforms. While the pilots varied in context and method, they shared a common foundation: applying behavioural science to encourage more sustainable food choices in ways that are consumer-friendly, respectful of autonomy, and grounded in real-world practice. Together, these interventions aimed to generate insights on how to effectively shift dietary habits and inform scalable solutions for transforming food environments across Europe. The insights generated through the pilots are clustered and analysed using the COM-B model, one of the most widely used frameworks for understanding and mapping behaviour.

The following sections introduce the Consumer Choice Framework, the COM-B model, and a selected overview of behaviourally science principles providing the conceptual foundation for the intervention design and evaluation. An initial analysis of insights from the LIKE-A-PRO living labs on consumer perceptions are also briefly referenced to contextualise pilot design choices. Subsequent sections present a detailed overview of the behavioural pilots.

2.2 The Consumer Choice Framework

The Consumer Choice Framework (CCF) [17] brings together four overarching clusters of intervention types that can enhance our further understanding of the way food environments and consumer food choices are shaping. These are:

Choice Editing

interventions that influence choice by reviewing and editing out choice options that are considered unsustainable and unhealthy

Choice Expansion

interventions that can guide consumers towards more the sustainable and healthier options by increasing the number of the options / products available, while also keeping other options open

Choice Environment

interventions that influence choice by creating a favourable environment for sustainable food purchases to take place, by often nudging consumers towards a desired direction

Beyond Choice

interventions that are more systemic in nature and go beyond the specific point and time of food purchase, but still impact consumer choice e.g., education and campaigning.

2.3 The COM-B Model

Our behaviours, including food consumption, are a result of various determinants whether they are internal, i.e. tied to a person's skills, capabilities, or motivation, and/or external, i.e. tied to the contextual environment in which a person operates. With this in mind to generate the most optimal insights and in addition to the CCF, the behavioural pilots' learnings and analysis will be guided on the basis of the COM-B model [18].

According to the model, behaviours are shaped by three main determinants: capability, motivation and opportunity. If one of these determinants is missing, a person might not undertake a specific behaviour. The three behavioural determinants are detailed below:

Capability

relates to a person's psychological skills (including having the knowledge, information, memory, attention and cognitive abilities to perform a behaviour) and physical (bodily) skills necessary for performing the desired behaviour.

Opportunity

relates to external factors to us as people that might allow and make a behaviour easy or it might act as a challenge and make the performance of a behaviour more difficult. These can be either physical as in the infrastructural/ environmental conditions (what the environment allows or facilitates in terms e.g., of time, resources, locations, availability / accessibility to a product, legislations etc.) or social as in the cultural norms and interpersonal relations that influence the way we understand the world.

Motivation

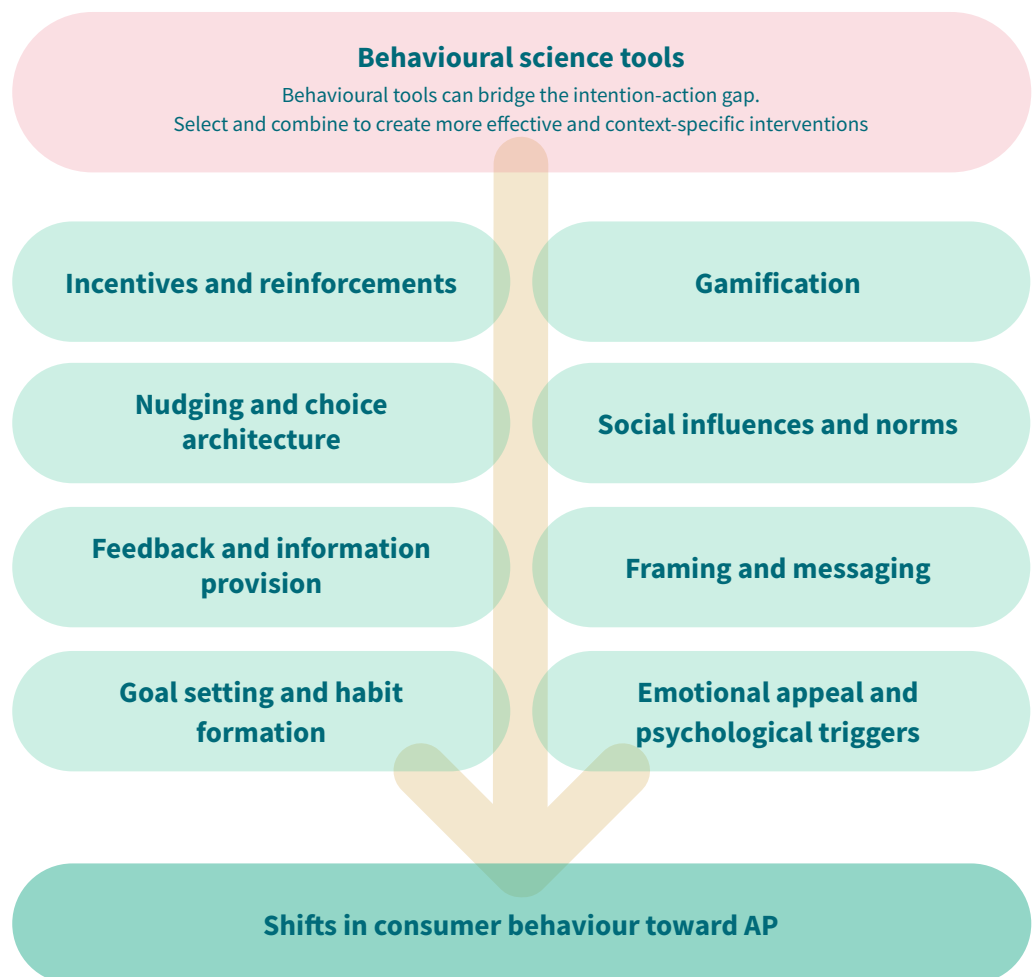
represents the conscious and unconscious processes that guide the way how we make decisions and then perform a behaviour. According to the model, motivation can be: reflective (e.g., involving a thought through planning, evaluating potential outcomes and intentions); and automatic (e.g., processes involving emotional reactions, desires, impulses, habits).

2.4 Behavioural science principles and tools

Behavioural science offers a powerful lens through which we can understand and influence human decision-making, especially in areas where awareness alone does not lead to action, such as the shift toward AP. Rather than assuming people behave rationally, behavioural science recognises that choices are often shaped by habits, emotions, cognitive biases, social influences, and environmental cues. This makes it especially relevant for addressing the complex, everyday behaviours related to food.

When promoting AP, simply providing information on health or sustainability is not enough. Behavioural tools can bridge the intention-action gap by making plant-based choices easier, more attractive, and more socially accepted. Tools like incentives and reinforcements (e.g. discounts or social recognition) can reward positive dietary shifts; nudging and choice architecture can guide people through subtle changes in menus or defaults; and social norms and peer dynamics help leverage what people around us are doing to promote behavioural alignment. Meanwhile, feedback mechanisms and framing strategies ensure that benefits are visible and personally meaningful. Longer-term behaviour change is supported through goal-setting, habit formation, and the use of emotional triggers that connect individual actions to collective well-being.

As such, pilots aiming to support shifts in consumer behaviour toward AP could and should select and combine several of these behavioural tools to create more effective and context-specific interventions. Accordingly, an overview of some behavioural science / behavioural tools has been provided in the following sections.



Incentives and reinforcements: encouraging behaviours through rewards and consequences

To influence behaviour effectively, a strategic mix of incentives and reinforcements can be employed. These may include financial rewards and non-financial motivators.

Financial incentives: these involve tangible, monetary-based rewards or penalties designed to encourage desired actions or discourage undesirable ones:

- **Discounts:** reduced pricing to promote specific behaviours [19, 20].
- **Subsidies:** financial support to offset costs and encourage participation [19].
- **Cash rewards:** direct payments for meeting goals or demonstrating positive behaviour [19, 21].
- **Penalties:** financial consequences e.g., fees, taxes for failing to meet expectations or engaging in negative behaviours [20].

Non-financial incentives: these leverage psychological and social motivators to encourage participation and sustained engagement:

- **Recognition:** public or private acknowledgment of achievements [19, 22].
- **Exclusive opportunities:** access to limited events, content, or privileges [21].

Gamification: applying game-like elements to non-game contexts to boost motivation and engagement

Gamification involves integrating game-like features into non-game contexts to make engagement more fun, rewarding, and motivating. This strategy taps into competition, achievement, and progress to encourage behavioural change:

- **Points, badges, and rewards:** earned for specific behaviours and milestones through actions and redeemable for rewards [21, 23].
- **Level/rank systems:** provide a sense of progression and long-term goal orientation [21].
- **Performance visualization:** feedback through charts or dashboards, allowing for self-monitoring and social comparison [23, 24].
- **Entertainment elements:** interactive or narrative features that make engagement enjoyable [21].

Nudging and choice architecture: guiding behaviour without restricting freedom

Nudging and choice architecture aim to steer individuals toward desired behaviours by subtly shaping the environment in which decisions are made. The goal is to make positive choices easier and more likely, without limiting options or imposing significant burdens.

- **Default options:** setting pre-selected choices that align with desired outcomes can significantly influence behaviour, especially when individuals tend

to go with the default [25, 26].

- **Simplification:** complexity can be a barrier to action. Simplifying information, forms, and processes encourages participation and reduces friction [25, 27].
- **Prompts and reminders:** timely cues and nudges help keep intentions top of mind and encourage follow-through on positive actions. E.g., SMS or email alerts; visual warnings or icons; suggestions for action at decision points (e.g., checkout screens) [26, 27].
- **Effort adjustment:** adjusting the level of effort required can subtly shift behaviour by making the desired option easier or the less desirable one harder [20, 27].

Social influences and norms: leveraging social dynamics to drive behaviour change

Human behaviour is deeply shaped by social context. By understanding and tapping into social norms and interpersonal dynamics, it's possible to encourage meaningful and lasting behavioural change.

- **Social norms:** people are influenced by what others do (descriptive norms) and what is considered socially acceptable (injunctive norms). E.g., descriptive norms: “Everyone is doing it” e.g., showing that most people are reducing meat intake; injunctive norms: “People approve of it” e.g., communicating that choosing plant-based options is widely respected [24, 28].
- **Commitment:** making a public or personal pledge can strengthen motivation and create a sense of accountability [29].
- **Role models:** visible figures such as celebrities, influencers, or respected community members—can inspire action by modelling desired behaviours. E.g., a celebrity chef promoting plant-based meals can shift perceptions and set aspirational goals [22, 28].
- **Peer support:** group settings and community engagement can reinforce behaviour through shared goals, accountability, and encouragement [22, 24].
- **Reciprocity:** the act of giving can motivate positive return behaviours. E.g., offering free plant-based recipes or sample meal plans can increase user engagement and willingness to try new options [28].

Feedback and information provision: delivering insights to drive behaviour change

Providing timely, relevant, and clear information helps individuals understand their behaviour, see its impact, and make informed decisions. Effective feedback empowers action and supports lasting change.

- **Performance feedback:** real-time updates on individual behaviour help people track progress and stay motivated. E.g., a dashboard showing the proportion of AP choices over time compared to conventional options [23, 30].
- **Outcome feedback:** communicating the results of specific behaviours reinforces the value of change and builds motivation. E.g., showing how a person's dietary choices improve health outcomes or reduce environmental impact [31, 32].
- **Timely and specific information:** information should be clear, concise, and tailored to the individual's context to make action easier and more relevant. E.g., offering personalised meal tips based on dietary preferences and local availability [26, 30].
- **Visualisation and learning tool:** visual feedback enhances understanding and engagement by making abstract progress more tangible. E.g., personal progress trackers; social comparison charts (e.g., how your shift to APs compares to peers) [32, 33].

Cognitive load: the more mental effort required to understand or act on information, the less likely it is to drive behaviour [30, 31].

Framing and messaging: influencing decisions through message design

How information is presented can significantly impact the choices people make. Effective framing and messaging strategies tap into psychological principles to nudge decisions and enhance behavioural outcomes.

- **Gain-framed messages:** highlight the positive outcomes of taking action to encourage behaviour change. E.g., switching to AP improves your heart health and reduces your carbon footprint [34, 35].
- **Loss-framed messages:** emphasise the negative consequences of not taking action, which can be a powerful motivator in some contexts. E.g., continuing to eat red meat increases your risk of heart disease and harms the planet [32, 34, 35].
- **Time discounting:** people tend to value immediate rewards more than future benefits. Messages should bring long-term gains into the present [22, 35].
- **Personalisation:** tailoring messages to an individual's demographics, lifestyle, or values makes them more relevant and persuasive [31, 32].
- **Priming:** subtle cues can unconsciously influence attitudes and behaviours. E.g., using images of healthy, vibrant people in plant-based campaigns can prime positive associations [31, 32].
- **Anchoring:** providing a reference point shapes perception and choices. E.g., presenting a premium-priced meal first makes mid-range plant-based options

seem more affordable and appealing [22].

Goal setting and habit formation: encouraging long-term behaviour change

Sustainable behaviour change is more likely when goals are structured, habits are reinforced, and individuals feel in control. By breaking down change into manageable steps and supporting habit-building, we can create long-lasting impact.

- **Specific, measurable, achievable goals:** clear and realistic goals help individuals track progress and stay motivated. E.g., replace three meat-based meals per week with plant-based alternatives [27, 29].
- **Breaking large goals into milestones:** dividing long-term objectives into smaller, attainable steps makes progress feel more manageable and rewarding. E.g., transitioning to a fully plant-based diet by first reducing red meat, then poultry, and so on [29].
- **Implementation prompts:** providing specific, actionable suggestions at the right time increases follow-through. E.g., try a meat-free lunch every Monday or add one new plant-based recipe to your weekly meal plan [24, 27].
- **Cue-action-reward cycle:** habits form when behaviours are triggered by cues, followed by rewarding outcomes. Repeating this cycle builds automaticity [29].
- **Environment design:** structuring the physical or digital environment can make healthy behaviours easier and more likely [25, 27].
- **Behavioural momentum:** starting with small, easy wins builds confidence and motivation for more ambitious changes. E.g., successfully completing a 7-day plant-based challenge can encourage continued commitment [24, 29].
- **Perceived control:** when people feel a sense of autonomy and competence, they are more likely to stick with their behaviours [29].

Emotional appeal and psychological triggers: harnessing emotions to drive behaviour

Emotions play a powerful role in decision-making and behaviour. By tapping into empathy, fear, pride, and other emotional triggers, campaigns can inspire action and reinforce lasting change.

- **Empathy and social responsibility:** appealing to our sense of connection and moral duty can motivate meaningful behaviour. E.g., triggering compassion: using imagery and stories that highlight the positive impact of behavioural change: for people, animals, or the planet; creating a sense of joint action: emphasizing collective efforts and shared goals to strengthen community engagement [31, 32].

- **Fear appeals:** highlighting risks or dangers can prompt urgent responses, especially when paired with clear solutions [20, 31].
- **Positive emotions:** pride, hope, optimism: reinforcing behaviours through uplifting emotions helps sustain motivation and encourage repetition. E.g., pride: celebrate individual achievements e.g., you've saved 50kg of CO₂ by switching to plant-based meals!; hope: show how personal actions contribute to a better future; optimism: focus on the progress being made and the positive trends already happening [24, 31, 32].

2.5 LIKE-A-PRO living labs first draft insights

Collected from the LIKE-A-PRO Living Labs, this first-draft analysis presents initial insights into consumer perceptions of APs. These insights were gathered across diverse lab settings in Europe and reflect real-world attitudes, motivations, and concerns. A more comprehensive, detailed analysis has been provided in the respective report [36].

Facilitating factors

- **Capability:** Results show that a range of factors facilitate the adoption of APs. From a capability standpoint, many consumers recognize the health and dietary benefits of APs, particularly for individuals with allergies, intolerances, or specific nutritional needs. Familiarity with ingredients such as peas or mushrooms increases willingness to try APs. Education plays a central role. Consumers are more likely to adopt APs when provided with reliable information about nutritional value, safety, and how to cook or incorporate them into meals. Cooking shows, school curricula, and media coverage all help normalize AP consumption and build confidence.
- **Opportunity:** From an opportunity perspective, wider availability in supermarkets, restaurants, and canteens makes APs more visible and accessible. Affordability is also key. Cost-effective options like lentils and beans are already popular, and incentives, discounts, or pricing parity with meat could significantly improve adoption. Convenience also supports uptake, as ready-made or easy-to-prepare products are well-suited for busy lifestyles. Cultural and social factors further encourage acceptance, especially when APs are promoted through role models, cooking influencers, and peer influence, and when framed as a natural part of mainstream cuisine rather than a niche or activist choice.
- **Motivation:** Motivation to consume APs is driven by perceived health benefits, including better digestion, disease prevention, and weight management. Ethical and environmental concerns, such as animal welfare and climate impact, also influence decisions, particularly among younger and flexitarian consumers. In addition, culinary curiosity, taste variety, and gradual integration into existing eating habits help foster long-term behavioural change.

Hindering factors

- **Capability:** On the capability side, several health-related concerns limit AP adoption. Some products contain common allergens like soy, gluten, or nuts, and consumers report fears of digestive discomfort or long-term nutritional deficiencies. Confusion about protein quality, amino acid profiles, or the presence of key micronutrients (like iron and B12) also contributes to hesitation. Many people lack basic awareness or understanding of APs, and misinformation or unclear labelling compounds the issue. Cooking and preparation barriers, such as lack of recipes, kitchen tools, or familiarity, make it harder to replace traditional proteins with APs in everyday meals.
- **Opportunity:** In terms of opportunity, consumers note that APs are still not consistently available across all regions, particularly in rural areas or smaller retail outlets. Stock shortages, limited product variety, and the need to shop at multiple stores discourage regular use. Cost is another major barrier; many APs are perceived as more expensive than conventional proteins, especially when highly processed. A lack of financial incentives or public subsidies makes APs inaccessible to lower-income groups. Time and convenience also play a role—raw APs can require more effort to prepare, and short shelf life or the absence of ready-to-eat options reduces their practicality.
- **Motivation:** On the motivational front, cultural habits, social norms, and sensory preferences shape resistance. Meat consumption is deeply ingrained in many traditions, and APs are often perceived as vegan-only or foreign trends. Fear of unfamiliar foods (neophobia), concerns about taste, texture, and appearance, and scepticism about the authenticity of meat-like substitutes all contribute to low adoption. Some consumers also question whether APs really offer meaningful environmental or ethical benefits. Distrust in marketing motives and industrial AP production further limits consumer motivation, as does the belief that individual dietary choices won't significantly impact global sustainability.

In conclusion, these findings suggest that while many consumers are open to APs, meaningful uptake depends on addressing a complex web of health, knowledge, access, affordability, cultural norms, and trust. To foster sustainable dietary shifts, future interventions must be holistic, human-centric, and tailored to local contexts.

3. Four behavioural intervention pilots - from start to finish



Behavioural intervention pilot 1 focused on choice editing



Background and context

Promoting sustainable and healthy diets is a shared objective across policymakers, industry, civil society, and academia. A key strategy within this goal is increasing the uptake of APs as substitutes for conventional animal-based sources. Despite growing initiatives and product innovation, these efforts have not yet achieved sufficient scale or impact in shifting consumption patterns toward more sustainable diets [37–39].

Conventional protein production continues to generate significant social and environmental costs. However, many interventions rely primarily on information provision and persuasive communication, assuming rational decision-making. Such approaches often overlook that food choices are habitual, emotionally driven, and socially embedded [21, 40–42].

This context creates a strong rationale for approaches that reduce consumer effort and subtly reshape the choice environments. One such strategy involves modifying the availability and prominence of conventional protein options while maintaining autonomy and offering appealing AP alternatives. Within the LIKE-A-PRO project, this approach is referred to as choice editing [16, 43–45].

Behavioural insights from Living Labs

The intervention built on prior learnings from LIKE-A-PRO living labs, in which Greek consumers engaged directly with the concept of choice editing. These sessions revealed polarised reactions, with both resistance and conditional acceptance.

Acceptance was higher when changes were gradual, clearly justified, transparently communicated, and paired with attractive alternatives. Interventions perceived as preserving freedom of choice were generally better received than those seen as restrictive.

At the same time, concerns centred on perceived loss of autonomy, scepticism

toward top-down decisions, and cultural attachment to meat-based foods. Participants tended to favour voluntary or incremental changes, while outright bans or mandatory transitions were widely rejected.

Design principles for the pilot

Building on these insights, the following principles guided the design and implementation of the pilot:

- **Gradual, non-intrusive changes**, introducing stepwise reductions rather than abrupt removal of options
- **Transparent communication** explaining the rationale and benefits of the intervention
- **Preservation of perceived autonomy** through appealing plant-based alternatives rather than prohibition
- Testing within a **controlled institutional setting** (campus canteen) to observe real-world behaviour
- Framing changes around **opportunity and benefits** (taste, quality, sustainability) rather than loss.

Together, these principles shaped the structure of the canteen-based intervention described in the following sections.

Methodology and intervention design

Setting and target group

The intervention was implemented at the main student and staff canteen (Dipnosophistirion) on the campus of The American College of Greece (ACG-RC) in October and November 2025. The primary target group was routine canteen users-ACG students and staff aged 18 years and older-who make frequent, time-pressured lunchtime meal decisions and therefore are most likely to be influenced by changes in menu availability and point-of-choice cues.

Food environments shape everyday decisions long before consumers consciously evaluate their options.

The intervention aimed to encourage the uptake of AP dishes by modifying the food environment, making plant-forward meals easier and more attractive to select during routine purchases. The central aim was to test the feasibility and behavioural impact of a choice-editing intervention, i.e., deliberately reshaping the set of available meal options to increase selection of AP/plant-based dishes in a real-world institutional food environment and to evaluate consumer acceptance and potential reactance alongside behavioural outcomes.

Consumer facing choice-editing intervention

The consumer-facing component applied a gradual choice-editing approach, in which meat-based dishes were progressively reduced across the week while plant-based and AP options became more prominent. In this pilot, plant-based meals

refer to dishes without meat, poultry, or fish, and AP dishes refer to meals in which the main protein source is plant-based (e.g., legumes, tofu/tempeh, or plant-based meat alternatives).

Rather than removing conventional proteins abruptly, availability changed stepwise: the week began with the usual mix of red meat, white meat and fish, after which red and white meat options were slowly withdrawn. By the final day, only fish-based animal protein remained. Fish was intentionally retained as a transitional option to preserve perceived freedom of choice and maintain acceptability while still reducing reliance on meat-based dishes (as outlined in [Table 1](#) below).

The intervention was implemented during normal lunchtime operations and in consultation with catering staff to ensure operational feasibility and minimise disruption or meal displacement. Participation was naturalistic: all students and staff using the canteen were exposed under real-world service conditions rather than through recruitment or experimental controls.

Implementation and evaluation were organised into three phases:

- **Baseline (control):** normal menu, no communication
- **Intervention Week 1:** five-day gradual meat reduction
- **Intervention Week 2:** four-day replication (shortened due to a national holiday)

This structure enabled direct comparison between typical purchasing behaviour and behaviour under modified availability conditions.

The design drew on behavioural science principles including default effects, salience, simplification, and effort reduction, supported by gain-framed communication emphasising taste and benefits rather than restriction. Roll-up banners, digital screens, and printed materials were positioned at key decision points to prompt selection at the moment of purchase.

Day	Red meat	White meat	Fish	Total meat dishes
Monday	Beef	Chicken	Fish	3
Tuesday	Beef		Fish	2
Wednesday	Pork		Fish	2
Thursday		Chicken	Fish	2
Friday				1

Table 1: Stepwise reduction of meat options during intervention weeks

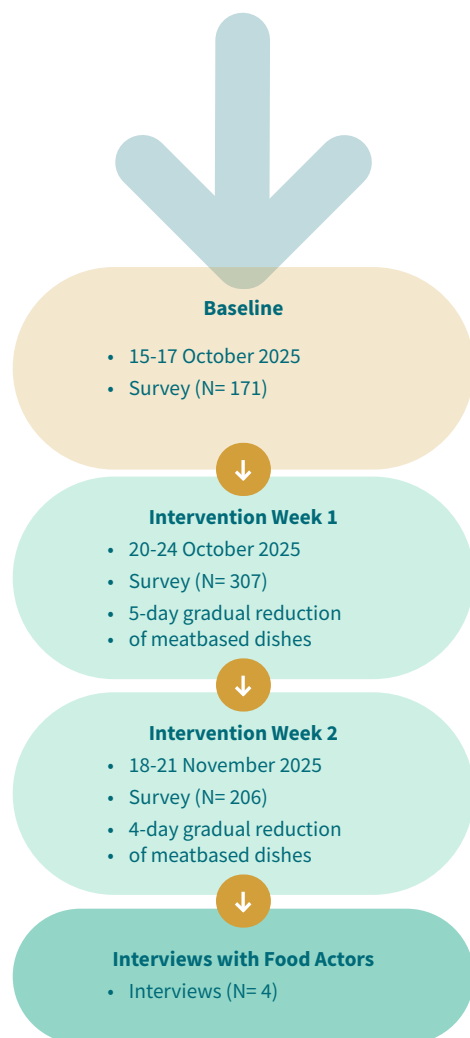


Figure 1: Implementation phases

Stakeholder interviews with food decision makers

The pilot combined a consumer-facing choice-editing intervention in the canteen with a qualitative component comprising semi-structured interviews with food decision makers. This component assessed implementation feasibility, workflow implications, perceived customer responses, and scalability considerations for institutional catering.

Evaluation design and data collection

A mixed-methods approach combined repeated cross-sectional surveys with stakeholder interviews. The primary outcomes were (i) self-reported canteen choice during the intervention weeks (plant-based vs non-plant-based) and (ii) perceived restriction/reactance. Secondary outcomes included awareness and attitudes toward APs, consumption intentions, self-reported dietary frequency, exposure to campaign materials, and perceived message effectiveness.

Consumer surveys

Survey data were collected at three time points aligned with the implementation phases: Baseline: $n = 171$; Week 1: $n = 307$; Week 2: $n = 206$; Total $N = 684$.

The baseline wave captured behaviour under normal conditions, while the intervention waves reflected responses under the modified menu. Statistical comparisons therefore focus on differences between baseline and intervention periods, and between the two intervention weeks.

Differences across waves were assessed using χ^2_k tests for categorical outcomes and one-way Analysis of Variance (ANOVA, F-tests) for mean differences across baseline, Week 1, and Week 2. For comparisons between Week 1 and Week 2 only, independent-samples t-tests were used where appropriate. Additional exploratory analyses used stepwise Ordinary Least Squares (OLS) regression models to examine associations between campaign responses and (i) behavioural intentions and (ii) favourability toward offering more plant-based meals.

Because participation occurred in a natural dining environment with a rotating campus population, tracking individuals over a long period of time was not feasible. Independent but partially overlapping samples were collected at each wave.

Baseline surveys were administered on-site using tablets via in-person intercept recruitment at the canteen; during intervention weeks, a QR-code system enabled mobile self-completion to minimise disruption. In both cases, all canteen users aged ≥ 18 were eligible, and participation was voluntary, with the encouragement of winning a symbolic prize. Measures included AP awareness and attitudes, consumption intentions, self-reported canteen choices, exposure to campaign materials, perceived message effectiveness, and psychological responses such as perceived freedom of choice or reactance. No objective sales data were collected for analysis; behavioural outcomes were based on self-reported canteen attendance and self-reported choice of plant-based meals, complemented by qualitative staff interviews.

Stakeholder interviews

To complement consumer survey data, four semi-structured interviews ($n = 4$) were conducted with key operational stakeholders involved in planning, delivering, and overseeing the canteen service: the canteen manager (P1), kitchen supervisor (P2), coffee/bar supervisor (P3), and operations director (P4). Interviews took place after completion of the intervention phases to capture reflections grounded in direct implementation experience. A structured discussion guide was used to ensure comparability across roles while allowing probing for role-specific detail. Topics included feasibility and workflow implications (procurement, preparation, service, staffing), perceived customer responses (acceptance, complaints, displacement), perceived economic impacts (costs, sales stability, waste), coordination and communication during implementation, and perceived sustainability/scalability of gradual availability shifts within institutional catering. Interviews lasted approximately 25–30 minutes and were conducted in a mix of online and in-person formats. Recordings were transcribed and analysed using deductive thematic analysis guided by predefined domains aligned with the interview guide.

Ethics and data management

Participation was voluntary and restricted to individuals aged 18 years and older. All respondents received study information and provided informed consent prior to participation; they could discontinue at any time without penalty. Survey responses were collected anonymously (with the exception of optional email entry for the prize draw, which was not linked to survey responses), stored securely, and used solely for research purposes. The intervention was implemented as part of routine canteen operations and did not require participants to consume specific foods; it modified menu availability while maintaining access to acceptable meal options (including fish as a transitional option).

Roles and responsibilities

Implementation relied on collaboration between internal and external actors. ACG operations teams and catering staff managed menu design and daily service delivery, while researchers and trained student volunteers supported recruitment and data collection. This division ensured operational continuity alongside research rigour.

Results

Consumer-oriented results

Across all three measurement waves, a total of $N = 684$ participants completed the survey (Baseline $n = 171$; Week 1 $n = 307$; Week 2 $n = 206$). The sample was predominantly young (mean age = 23.9 years), largely university students, and slightly male-skewed (57% male). Educational attainment was mainly tertiary, and dietary habits reflected a conventional consumption profile: approximately 80% identified as omnivorous, with smaller proportions reporting flexitarian or vegetarian patterns.

The composition of the sample remained broadly stable across waves, allowing meaningful comparisons between the baseline (control) and intervention periods without substantial demographic confounding. Overall, the participant profile indicates that the sample reflects a typical campus population rather than a group already predisposed toward plant-based eating. For a full overview of the socio-demographic sample, please see [Table 21](#) (in the appendices section).



Awareness and attitudes toward APs

Awareness of APs increased substantially over the course of the pilot, rising from 55.6% at baseline to 81.4% in Week 1 and 81.1% in Week 2 ($\chi^2 = 45.1$, $p^2 < .001$). This indicates that the communication materials placed in and around the canteen were effective in raising visibility and familiarity with AP concepts during the intervention periods.

Despite this increase in awareness, underlying attitudes toward APs remained broadly stable and only moderately positive. Mean attitude scores remained

-
- 1 χ^2 (chi-square) values test whether differences between groups or time points are meaningful
 - 2 P-value shows the likelihood that observed differences occurred by chance.

around $M = 3.3\text{--}3.4$ on a 5-point scale, with no statistically significant differences between waves ($p = .300$). Participants consistently evaluated APs more favourably on sustainability and environmental benefits, while perceptions related to taste, appeal, and pleasantness were lower. Differences across waves were small and statistically non-significant.

Awareness increased substantially during the intervention, while underlying attitudes towards APs remained largely unchanged.

This combination of strong awareness change but minimal attitudinal change suggests that preferences toward APs were not strongly formed. From a behavioural perspective, such “weak preferences” create conditions in which contextual or environmental influences, such as availability or menu structure, may play a greater role in shaping choices than information alone. The limited attitudinal movement observed here therefore reinforces the relevance of structural approaches operating through the choice environment.

Food consumption frequency

Reported consumption frequencies for most animal-based staples in participants’ general diets remained largely stable across the three waves. No statistically significant reductions in meat consumption were observed during the intervention period. Full food-frequency distributions are provided in [Table 19](#) (in the appendices section).

The clearest dietary change was a modest but statistically significant increase in reported consumption of plant-based meat alternatives. In particular, the proportion reporting consumption 1–3 times per month increased from 12.9% at baseline to 25.2% by Week 2 ($p = .013$).



Importantly, these measures reflect general dietary habits beyond the canteen context, rather than food choices made specifically during the intervention weeks.

Overall, these findings point to the stability of established eating habits over the short term. Even when awareness increases, routine dietary behaviours appear relatively resistant to change. This highlights a common challenge in food-system

interventions: informational or attitudinal shifts do not necessarily translate into behavioural change, particularly where habits are entrenched.

Consumption intentions

Consumption intentions followed a similarly stable pattern. Overall intention scores remained low to moderate ($M^3 \approx 2.5$ out of 5) and did not differ significantly between baseline and intervention periods ($F^4 = 2.55$, $p = .079$).

Willingness to replace meat with APs increased slightly during the first intervention week (Week 1: $M = 2.5$ vs Baseline: $M = 2.3$) but declined again in Week 2 ($M = 2.1$; $F = 4.66$, $p = .010$). Broader intentions to reduce meat consumption or increase plant-based intake showed no significant change.

These results indicate that the intervention did not produce sustained motivational shifts at the level of stated intentions. Participants' expressed plans for future behaviour remained largely unchanged, even though their immediate food environment was altered during the intervention weeks.

From a behavioural standpoint, this distinction is important. It suggests that any observed differences in meal selection are unlikely to be driven by deliberate intention change, but rather by situational or contextual influences operating at the point of decision—consistent with the logic of environmental or “choice architecture” approaches.

Attitudes toward intervention strategies promoting APs

Participants evaluated a range of potential initiatives designed to encourage the uptake of APs within the canteen. Responses revealed clear differences in acceptability depending on the type and perceived intrusiveness of the measure.

Support was highest for informational and light-touch strategies, such as:

- “green choice” labels/icons ($M = 3.7/5$),
- information on taste/protein content ($M = 3.7/5$),
- price incentives and increased plant-based availability ($M = 3.5/5$).

By contrast, support declined for interventions that more directly altered the structure of the choice environment. Strategies involving changes to defaults or relative availability, such as plant-based-by-default designs, received the lowest ratings ($M = 2.5/5$).

3 Mean (M) indicates the average response

4 F-values (F) test whether differences between groups or time points are meaningful

The pattern therefore suggests an acceptability gradient across intervention types: respondents were more comfortable with measures perceived as informative or enabling, and less comfortable with those perceived as directive or potentially restrictive. Overall acceptance of AP initiatives was moderately positive ($M = 3.4$), whereas perceived effectiveness was lower ($M = 2.7$), indicating an acceptance–effectiveness gap. Detailed ratings for each intervention strategy are reported in [Table 20](#) in the appendices section.

These preferences provide important context for interpreting responses to the implemented choice-editing menu.

Response to the intervention (choice editing)

During both intervention weeks, approximately 71% of respondents reported eating at the canteen. Among those attendees, just over half (51.4%) selected a plant-based option, a proportion that remained identical across both weeks. This indicates that a substantial share of consumers engaged with AP options when these were made more prominent within the menu.

Choice editing can influence food choices when it is:

- Gradual ✓
- Well communicated ✓
- Supported by appealing dishes ✓
- Designed to preserve autonomy ✓

Higher acceptance and greater willingness to choose AP meals

Participants’ evaluation of the availability-based (choice-editing) menu was moderately positive but declined slightly between weeks (Week 1: $M = 3.5$ vs Week 2: $M = 3.3$; $t^5 = 2.13$, $p = .033$).

At the same time, 30.7% reported eating elsewhere because of the intervention, suggesting some displacement behaviour. Perceptions of restriction were mixed: 57.1% reported little or no restriction, whereas 42.9% reported moderate or strong restriction. Support for a more permanent increase in AP options was similarly divided.

These results indicate a differentiated response to the intervention. Many consumers adapted to the modified menu and continued to purchase plant-based meals, yet others perceived the reduction in meat options as limiting their autonomy and responded by avoiding the canteen or expressing lower support.

Taken together, the findings suggest that availability-based or choice-editing measures can influence immediate food selection but may also generate perceptions of restriction among a subset of consumers. This highlights a central trade-off in food policy: structural interventions may be behaviourally effective at the point of purchase, yet their acceptability depends on how strongly they are perceived to constrain choice.

Key outcome patterns across baseline and intervention waves are summarised in [Table 2](#).

Indicator	Baseline	Week 1	Week 2	Change pattern
AP awareness	55.6%	81.4%	81.1%	large increase
Mean AP attitude (1-5)	3.4	3.4	3.3	stable
Plant-based consumption (1-3x/month)	12.9%	-	25.5%	modest
Buying intention (mean)	2.6	2.6	2.4	stable /low
Ate at a canteen	-	71.7%	70.9%	stable
Chose plant-based (among attendees)	-	51.4%	51.4%	stable
Ate elsewhere due to intervention	-	-	30.7%	displacement
Felt restricted (moderate / high)	-	-	42.9%	reactance signal

Table 2: Summary Outcomes across study waves (baseline vs intervention weeks)

Exchanges with food decision makers

Experience and training on APs

Knowledge and prior experience with APs varied considerably across the team. Among the four interviewed stakeholders (n = 4), the canteen manager (P1) reported the most formal exposure through hospitality and tourism studies, supplemented by practical experience through campus events. Two frontline staff (P2 and P3) described largely informal or self-directed learning, while the operations director (P4) reported minimal prior familiarity before participating in the project.

Consumers adapted to the modified menu more readily than many stakeholders initially expected.

Overall, AP expertise was not institutionalised within the team at baseline. Instead, knowledge developed progressively through hands-on exposure during the intervention. Several participants noted that direct involvement increased their awareness of the culinary potential and versatility of plant-based ingredients, suggesting that operational familiarity grew alongside implementation.

Overall impressions of the interventions

Across roles, all four interviewees described the intervention positively and characterised it as smoother and more acceptable than initially anticipated. Staff reported that initial resistance among some consumers diminished over time, replaced by curiosity and experimentation.

Importantly, their reflections focused not only on the products themselves but on the structured reduction of meat availability. Three of four stakeholders explicitly

noted surprise that students, including groups assumed to have higher protein demands, such as athletes, adapted readily to menus with fewer meat options. This was interpreted as evidence that gradual exposure and limited availability did not provoke the level of pushback they had expected.

From a managerial perspective, the intervention was viewed as educational, aligned with institutional sustainability goals, and professionally beneficial, particularly as it encouraged culinary innovation and diversification of the menu.

Observed patron responses

Stakeholders' observations broadly aligned with the quantitative survey findings. Most students were described as flexible and willing to try plant-based meals when these were the primary or only options available, consistent with survey results showing that approximately half of canteen users (51.4%) selected a plant-based meal during both intervention weeks.

Successful implementation depends on more than consumer demand

Operational feasibility



International students were perceived as especially open, while some Greek students and staff showed stronger attachment to meat-based meals. Interviewees consistently noted that when meat options were limited, the majority of patrons still purchased from the available alternatives rather than skipping meals entirely.

Clear communication



Appealing menu options



Gradual implementation



Supports long-term integration of AP meals in institutional catering

Overall, the removal or reduction of meat options was seen to prompt adaptation rather than rejection, suggesting that modifying availability influenced immediate purchasing decisions while generating only moderate resistance—consistent with the behavioural effects expected from choice-editing approaches.

Personal and operational experiences with implementation

From an operational standpoint, the intervention was described as straightforward to implement. All interviewees reported no disruptions to storage, procurement, preparation, or service. Workflows during reduced-meat weeks were largely identical to regular weeks and in some cases simpler due to fewer meat-specific requirements.

Financial impacts were described as neutral or slightly positive. Costs were comparable or lower because of reduced meat purchasing, turnover remained stable, and no additional food waste was reported. Accurate forecasting and menu planning enabled plant-based dishes to be prepared at scale without losses.

The primary challenge identified was not logistical but behavioural: persuading some consumers, particularly those strongly oriented toward meat, to try unfamiliar dishes. Staff addressed this through presentation strategies, renaming, and improved promotion rather than operational changes.

Overall, stakeholders emphasised that the choice-editing design did not increase workload, complexity, or financial risk, suggesting that availability-based interven-

tions are feasible from a catering management perspective.

Perceived sustainability and scalability

All interviewees expressed cautious optimism about integrating meat-reduced or plant-forward menus more systematically in the future. However, they consistently stressed that success depends on gradual implementation, consistent communication, and appealing product design.

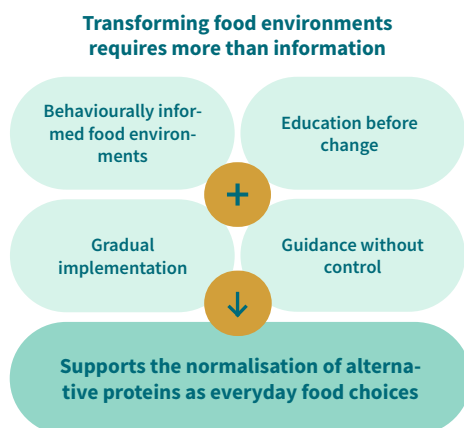
Operational implementation was straightforward; consumer acceptance, not kitchen operations, was the primary challenge.

Three of four stakeholders explicitly recommended introducing changes progressively rather than abruptly, normalising alternative options over time, and providing clear information to prepare consumers in advance. Menu creativity and sensory appeal were repeatedly emphasised as critical to acceptance, while education and messaging were seen as necessary complements to structural change.

From an institutional perspective, the operations director (P4) described a phased, multi-year strategy as most appropriate, combining continued experimentation with ongoing monitoring of economic and service impacts.

Taken together, stakeholders viewed availability-based strategies such as choice editing as operationally feasible and financially sustainable, provided they are accompanied by communication, gradual exposure, and continuous evaluation. Rather than presenting major organisational barriers, the main constraints were perceived to be behavioural and cultural.

Outlook



This pilot provides a practical test of whether availability-based “choice editing” can promote APs in an institutional catering context and how such measures are perceived by both consumers and food service actors. By triangulating quantitative survey data (N = 684 across three waves: baseline n = 171; Week 1 n = 307; Week 2 n = 206) with stakeholder interviews (n = 4) and behavioural science principles, the results offer insight not only into immediate outcomes, but also into the conditions under which similar interventions may be viable at scale.

Survey indicators (e.g., plant-based selection rates, perceived restriction, awareness, and acceptability scores) and operational accounts converged, allowing both behavioural effects and feasibility to be assessed in parallel.

Overall, the evidence suggests that modifying the food environment can influence short-term meal selection, but that acceptability and perceived autonomy remain critical determinants of longer-term success.

Choice editing: effectiveness and perceived restriction

The intervention was designed around a gradual choice-editing strategy in which meat-based dishes were progressively reduced and plant-based options made more prominent. Behavioural theory suggests that such structural approaches can shift behaviour by changing defaults and availability rather than relying solely on persuasion. At the same time, these measures may trigger perceptions of restricted choice and behavioural reactance. Both dynamics were visible empirically.

On the one hand, behavioural engagement with AP options was substantial. During both intervention weeks, around 71% of respondents reported eating at the canteen, and 51.4% of those attendees selected a plant-based meal, indicating that roughly one in two active users chose AP options when these were made more salient and readily available. Stakeholder interviews further confirmed that most students adapted to the modified offering without major difficulty.

On the other hand, a sizeable minority experienced the intervention as limiting. In Week 2, 30.7% reported eating elsewhere because of the intervention, and 42.9% felt moderately or very restricted, suggesting measurable behavioural and perceptual reactance. These responses were echoed qualitatively by staff, who observed some patrons seeking familiar options off campus when preferred meat dishes were unavailable.

Taken together, these findings highlight the core trade-off associated with choice editing: while structural measures may have greater behavioural leverage at the point of decision, they can also generate resistance if perceived as coercive. The challenge is therefore not only to design effective interventions, but to calibrate them in ways that preserve perceived freedom of choice.

Awareness is not enough: persistent taste and habit barriers

The communication campaign successfully increased awareness of APs, demonstrating that informational and gain-framed messaging can improve familiarity. Awareness rose sharply from 55.6% at baseline to over 81% in both intervention weeks ($\chi^2 p < .001$).

However, this increase in awareness did not translate into substantial attitudinal or motivational shifts. Mean attitudes toward APs remained moderate and stable (≈ 3.3 – $3.4/5$), and taste-related perceptions continued to score lowest relative to sustainability and health attributes.

At the behavioural level, general dietary patterns were largely unchanged: no significant reductions in meat consumption frequency were detected, and only a modest increase in plant-based eating was observed (1–3×/month consumption rising from 12.9% to 25.2%, $p = .013$).



These results suggest that knowledge and positive beliefs about sustainability alone are insufficient to change behaviour where habits and taste expectations are entrenched. Consistent with this interpretation, respondents prioritised better taste/quality (66.3%) and lower prices (60.5%) as the most effective levers for increasing AP uptake—well above environmental messaging or social proof.

From a policy perspective, messaging may open the door, but sensory experience and affordability determine whether consumers walk through it.

Behaviour change without intention change

A notable pattern across the results is the relative stability of consumption intentions despite changes in the canteen environment. Overall intention scores remained low to moderate ($M \approx 2.5/5$) and did not differ significantly between baseline and intervention periods.

Long-term change depends on combining behavioural design with appealing products, transparent communication, and consumer autonomy.

Although willingness to replace meat with APs briefly increased in Week 1 (2.5 vs 2.3 baseline), this effect did not persist. In contrast, actual plant-based meal selection at the canteen remained consistently high ($\approx 51\%$) during both intervention weeks.

This divergence between intentions and behaviour is consistent with the logic of environmental or “choice architecture” interventions.

Rather than depending on deliberate motivational shifts, such approaches operate by reshaping the immediate decision context.

In this sense, the pilot provides empirical support for the idea that behaviour can change even when stated intentions remain stable, reinforcing the potential value of structural measures in food environments.

Operational feasibility and institutional readiness

While consumer responses were mixed, the operational perspective was consistently positive. All four interviewed stakeholders reported that the intervention was straightforward to implement, with no disruptions to procurement, preparation, storage, or service. Costs were described as stable or slightly lower due to reduced meat purchasing, and no increases in food waste were reported.

Importantly, staff did not perceive the choice-editing approach as adding workload or financial risk. The primary challenges were behavioural, encouraging hesitant

customers to try unfamiliar dishes, rather than logistical.

This disconnect between moderate consumer hesitation (e.g., 30.7% displacement) and smooth operational performance is notable. It suggests that availability-based interventions are not only technically feasible but can be integrated into routine catering operations without compromising economic viability. Institutional barriers, therefore, may be lower than anticipated.

Stakeholders consequently viewed gradual meat-reduced menus as scalable, provided they are introduced progressively, supported by communication, and accompanied by appealing and varied offerings.

Implications for future interventions

Taken together, the findings point toward a “middle path” between purely informational nudges and abrupt structural restrictions.

Consumers expressed strongest support for light-touch measures, such as labels and taste/protein information ($M = 3.7/5$) and price discounts ($M = 3.5/5$), while more intrusive default-based designs received the lowest support (plant-based by default: $M = 2.5/5$). At the same time, informational strategies alone produced limited behavioural change.

Future interventions may therefore benefit from combining both elements:

- **Gradual availability shifts**, rather than abrupt removal of familiar options
- **Clear, positive communication** that emphasises choice and avoids confrontational framing
- **Product-focused improvements**, especially taste, quality, and affordability
- **Repeated exposure over time** to normalise plant-based meals
- **Continuous monitoring** of perceived restriction and displacement behaviours.

A phased implementation strategy, such as the multi-year approach proposed by the operations team, may allow institutions to build acceptance incrementally while maintaining operational stability.

Research limitations and conclusions

Overall, the pilot demonstrates that promoting AP products / dishes through environmental restructuring is both operationally feasible and behaviourally influential in a real-world institutional setting. Across 684 participants surveyed over three waves, approximately 71% of respondents used the canteen during intervention weeks, and about half of these (51.4%) selected a plant-based meal, indicating that

availability shifts can meaningfully influence immediate food choices at the point of purchase. At the same time, 30.7% reported eating elsewhere and 42.9% felt moderately or strongly restricted, underscoring that effectiveness depends not only on what is offered, but on how changes are perceived.

Behaviour changed even when intentions remained stable, showing the power of changing the food environment itself.

These findings highlight the central trade-off of choice editing. Structural changes that make sustainable options easier and more salient can encourage uptake, yet they may also trigger resistance if experienced as limiting freedom. Successful scaling therefore requires careful balancing of behavioural effectiveness with perceived autonomy and acceptability.

Interventions that combine gradual availability adjustments with attractive products, supportive messaging, and clear communication appear most promising. In this sense, the path forward is not to replace choice, but to redesign the choice environment in ways that feel enabling rather than restrictive.

These conclusions should be interpreted in light of several methodological and contextual considerations.

- **First, short intervention duration.** The intervention was implemented over two short periods (five days in Week 1 and four days in Week 2). Dietary habits typically change slowly, and the limited exposure window may underestimate longer-term effects. While short-term behavioural indicators (e.g., plant-based selection at ~51%) were observable, longer follow-up would be necessary to assess whether such changes persist, accumulate, or attenuate over time.
- **Second, repeated cross-sectional rather than longitudinal design.** The evaluation relied on independent but partially overlapping samples (baseline $n = 171$; Week 1 $n = 307$; Week 2 $n = 206$) rather than tracking the same individuals. Although appropriate for a naturalistic campus setting, this limits the ability to attribute changes to individual-level behaviour change and reduces causal certainty.
- **Third, single-site context.** The pilot was conducted in one university canteen within a specific cultural context where approximately 80% of respondents identified as omnivorous. Food norms, particularly around meat consumption, may differ across institutions and countries, and findings may not directly generalise to other catering environments or populations.
- **Fourth, reliance on self-reported measures.** Several outcomes, including attitudes, intentions ($M \approx 2.5/5$), and broader dietary frequency, were based on self-report and may be subject to recall or social desirability bias. Although behavioural indicators such as canteen attendance and meal selection were included, objective purchase or sales data were limited.
- **Fifth, bundled intervention components.** The intervention combined menu restructuring (choice editing) with communication materials. Consequently, it is not possible to fully disentangle the independent effects of availability



changes versus messaging exposure. Observed outcomes likely reflect the combined influence of both mechanisms.

These considerations suggest that the results should be viewed as indicative rather than definitive. Nonetheless, the convergence of quantitative evidence (awareness increases from 55.6% to >81%, stable but meaningful plant-based uptake, and measurable perceptions of restriction) with consistent stakeholder reports of smooth operations and negligible financial disruption provides a robust basis for assessing feasibility.

Overall, the pilot indicates that availability-based choice editing can shift behaviour in the short term without compromising operational performance, but that long-term success depends on maintaining acceptability. Interventions that integrate structural adjustments with appealing products, positive framing, and gradual implementation are most likely to achieve durable change in institutional food settings.

3.2

Behavioural intervention pilot 2 focused on choice expansion



Background and context

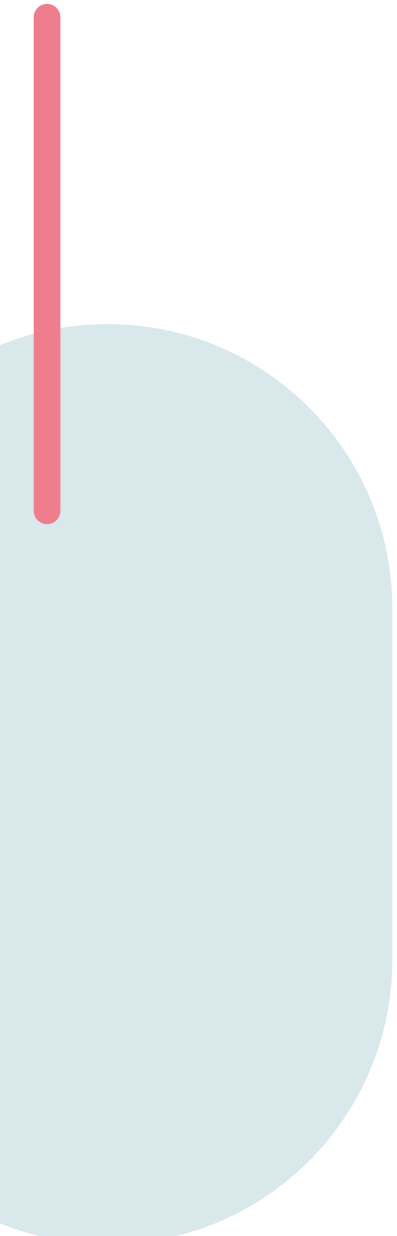
Supermarkets play a decisive role in shaping dietary behaviour. Retail environments are intentionally designed to steer attention, simplify decisions, and influence what consumers place in their baskets, and ultimately what they eat [38, 41, 45]. While retailers increasingly support healthier choices (e.g., prominent fruit and vegetable placement), conventional proteins such as meat and dairy still dominate shelf space, visibility, and promotional intensity [40, 42, 46].

In contrast, APs are often harder to locate and are frequently placed in segregated sections that limit visibility and reduce side-by-side comparison. Naming, labelling, and inconsistent signposting can further undermine trust and appeal, especially given that grocery shopping is typically a low-effort, habitual task [39, 40, 47].

Choice expansion addresses these frictions by redesigning retail choice architecture to make APs easier to notice, compare, and try, without restricting conventional options [42, 43, 45]. Strategies such as integrated shelving, high-salience placement (e.g., eye-level or end-of-aisle), supportive cues, and low-risk trial formats (promotions and tastings) can normalise APs as everyday options rather than niche products [42, 43, 46]. When combined with price parity or value-based pricing and simple decision support (e.g., cooking inspiration), these measures reduce effort and uncertainty at the point of choice and strengthen the conditions for trial and substitution [46, 48].

Behavioural insights from Living Labs

The pilot design built on behavioural insights generated through LIKE-A-PRO Living Labs in Norway, where consumers reflected on AP visibility, usability, and trust in retail settings. Responses highlighted both opportunities and constraints.



On the opportunity side, integrated shelving, particularly when grouped by product type, was widely valued for enabling comparison while supporting gradual normalisation. Curiosity emerged as a key driver, especially when triggered by appealing packaging, clear value framing, and easy-to-read cues (e.g., eco-labels or health information). Participants also responded positively to interventions that respected autonomy by encouraging exploration without pressure. Small-format trials and tastings were repeatedly described as effective in lowering the threshold for first-time uptake.

At the same time, several risks were identified. Poorly designed layouts could create confusion, especially for inexperienced or colourblind shoppers, and overly cluttered displays or similar packaging increased the risk of mistaken choices. Placement next to conventional proteins could also trigger irritation or concerns about being misled if labelling was unclear. Trust was not guaranteed through placement alone: perceived ultra-processing, ingredient concerns, and cultural resistance to unfamiliar formats remained salient barriers. Messaging that felt moralising or overly complex risked emotional pushback, underscoring the importance of keeping framing positive, simple, and enjoyment-oriented.

Design principles for the pilot

Based on these insights and the project's governance recommendations, the pilot followed the principles below:

- Increase salience and intuitive discovery through **high-visibility placement** and integrated category design
- Trigger curiosity via appealing presentation, naming, and promotional cues
- Frame APs as **added value**, expanding choice rather than replacing conventional options
- Support clarity and trust through **clear labelling** and simple visual cues
- Enable low-risk trial, especially via tastings and pricing that reduces perceived financial risk
- Use **positive, non-moralising messaging**, foregrounding taste, quality, and everyday usefulness
- Preserve autonomy, avoiding defaults or coercive designs.

Together, these principles shaped the retail intervention described below.

Methodology and intervention design

Setting and target group

The pilot was implemented in Norway across three stores of a major Norwegian supermarket chain (Coop) over a two-week period (week 44 and 45, 2025). The target group comprised adult in-store shoppers, with the aim of engaging a broad and heterogeneous customer base rather than a pre-defined segment. In line with the

CCF, the intervention operationalised choice expansion by increasing the visibility, comparability, and trialability of AP products at the point of purchase, while leaving conventional protein choices fully available. Across the three stores, the pilot aimed to engage with at least 500 customers through campaign exposure and in-store interaction.

Consumer-facing choice-expansion intervention

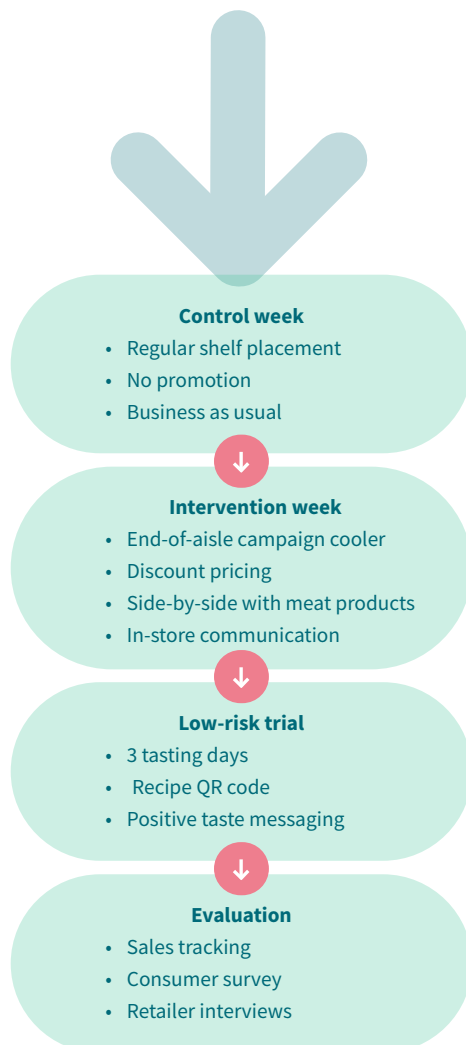
The consumer-facing component used a two-phase structure to compare purchasing outcomes under business-as-usual conditions versus an enhanced choice environment. Two AP products from the retailer's vegetarian own-brand range (FLOWFOOD), Veggie Falafel and Veggie Burger, were selected as the focal products (see Figure 4 in the appendices for product details). In the control week, these products remained in their usual shelf locations without additional signage or promotional support. In the intervention week, the same products were moved into high-salience, end-of-aisle campaign coolers and were supported by a coordinated set of measures intended to reduce friction and lower perceived trial risk.

During the intervention week, the AP products were placed alongside conventional meat products that were simultaneously on promotion, consistent with the project's emphasis on normalisation and parity. The purpose was to create side-by-side exposure at the moment when shoppers typically make routine protein decisions, thereby supporting comparison and encouraging low-effort trial without restricting choice. The intervention week also included in-store tastings at one of the stores on three selected days, complemented by simple positive messaging that foregrounded taste and enjoyment. Tastings were delivered by Møreforsking and FLOWFOOD, who offered samples, answered questions, and provided clear product information. A QR sticker linking to a "3-step, 10-minute" recipe was included as an optional decision support tool intended to lower knowledge barriers for preparation.

Stakeholder interviews with food decision makers

To complement consumer-facing evidence, the pilot included qualitative interviews with retail decision makers to assess feasibility, operational implications, and scalability. Two interview formats were used: general interviews with retailers not directly involved in the in-store intervention (focusing on category development, market dynamics, and operational/economic considerations), and an extended intervention-specific interview with a representative from the store where tastings were conducted covering operational delivery and perceived customer responses during the pilot. In total, six retailer interviews were conducted.

Building the Choice Expansion Environment



Element	Control week (Week 1)	Intervention week (Week 1)
Product set	Veggie Falafel and Burger	Same products
Placement	Regular shelf locations	End-of-aisle campaign coolers
Pricing	No discount	Discount applied
Communication	Business-as-usual	In-store materials + Coop app, online and printed channels
Decision support	None	QR recipe sticker (3-step, 10-minute)
Low-risk trial	None	In-store tasting (3 days)
Visual cue	None	Roll-up banner at in-store tasting venue (taste / enjoyment framing)
Parity design	None	APs placed with meat products on campaign

Table 3 summarises the intervention structure and components.

Evaluation design and data collection

A mixed-methods approach combined objective sales tracking, consumer surveys, interaction-based impressions from in-store tastings, and qualitative interviews with retail decision makers. The primary outcome was behavioural uptake of the featured AP products, measured through units sold, comparing the control week (Week 1 / week 44) with the intervention week (Week 2 / week 45) across the three stores. Secondary outcomes included (i) consumer attitudes and segmentation patterns (diet identity, age, and gender differences), (ii) perceived effectiveness and noticeability of specific intervention elements (placement, discounts, signage, tastings, and QR recipe support), and (iii) product evaluations reported in the extended tasting survey and reflected in tasting interactions.

Sales tracking

Sales performance of the two featured AP products (Veggie Falafel and Veggie Burger) was tracked across both weeks and compared between control and intervention conditions. Where available, daily sales patterns were reviewed to compare demo (tasting) versus non-demo days. Across both weeks combined, a total of 265 units of the two featured AP products were sold. Sales data were provided by Coop for the three intervention stores

Consumer surveys

Survey data were collected during the intervention period through three channels: a social media campaign (n = 135), in-store QR posters (n = 21), and an extended survey at the demo stand (n = 48), yielding N = 204 total responses. Three closely related versions of the questionnaire were used (12 items each), with the demo-stand version including additional product-specific evaluation questions to capture immediate responses linked to tasting (see Table 22 in the appendices sec-

tion). Fieldwork was conducted in week 45 of 2025; for the social media campaign, participants had to be aged 18 years or older and reside in the Trondheim region, while the two in-store recruitment options applied only the age criterion, and participants could optionally register their phone number to enter a draw for a NOK 250 voucher valid across the retail chain's stores.

Interaction-based impressions from tastings

Because covert observation in retail settings raises ethical concerns, no systematic store-wide observational protocol was applied. Instead, descriptive interaction-based impressions were recorded during overt engagement at the tasting stand. Across three demo days, more than 800 customer interactions took place and 808 samples were distributed (430 falafel; 378 burger). These impressions are reported at an aggregate level and are used to contextualise sales trends and survey responses rather than as standalone behavioural measures.

Retailer interviews (stakeholder component)

To complement consumer-facing evidence, qualitative interviews with retail decision makers were conducted to assess feasibility, operational implications (e.g., staffing, workflow, shelf-space considerations, waste), and scalability. In total, six semi-structured interviews (n = 6) were conducted with retail decision makers across Coop, NorgesGruppen, Rema 1000, and Bunnpris. Interviewees held senior roles within category management, purchasing, communications, marketing, and concept development. The interviews explored category definitions and understanding of APs; perceived market development and drivers of growth (2016–2021) and decline (2022–present); current demand, profitability, and customer profiles; future outlook and strategic priorities; and conditions, opportunities, and barriers for expanding the assortment. For the intervention store, an extended interview additionally addressed operational and economic implications of the in-store campaign and reflections on scalability of similar initiatives.

Interviews were conducted via Microsoft Teams and recorded solely for transcription purposes. Transcripts were analysed using deductive thematic analysis guided by predefined domains aligned with the semi-structured interview guide. The coding framework followed the guide's thematic blocks (role and category understanding; market development; current situation and profitability; future strategy and growth conditions; operational and economic implications; and campaign-specific reflections), allowing systematic comparison across retail actors while preserving role-specific insights. For a full overview of the questions, please see [Table 24](#) in the appendices section.

Ethics and data management

Participation in the research components of the pilot was voluntary, with informed consent. Consumer surveys were completed anonymously, and no personal identifying data were collected, except for phone numbers voluntarily provided solely for entry into a draw for a NOK 250 voucher, as clearly stated in the questionnaire. Engagement at the tasting stand was conducted overtly and transparently, and any interaction-based impressions were recorded only at an aggregate, descriptive

level. Because covert observation in retail settings raises ethical concerns related to informed consent and perceived intrusion, no systematic store-wide observational protocol was implemented.

Research activities were clearly separated from commercial marketing initiatives. Communication and engagement were designed to support informed choice and low-risk trial, using positive, non-moralising framing that emphasised taste and everyday usability rather than guilt-based or moralising sustainability appeals. Data were handled in line with standard research practices for voluntary participation and anonymised survey collection.

Roles and responsibilities

Implementation was delivered through collaboration between retail partners and external project actors. Store management and staff enabled the practical intervention components, including campaign placement in end-of-aisle coolers, pricing/discount activation, and in-store communication materials. Møreforsking and FLOWFOOD supported intervention delivery and evaluation by staffing the tasting activities, engaging consumers through brief information exchange and Q&A, and coordinating survey distribution and data collection.

Equity considerations were addressed by implementing the pilot in mainstream retail settings and selecting affordable, culturally familiar AP products (burger and falafel formats). The intervention was open to all adult shoppers and did not target or exclude specific socio-demographic groups; conventional protein options remained fully available throughout, ensuring that the intervention expanded choice rather than restricting it.



Results

Consumer-oriented results

Across the pilot period, the more interactive consumer engagement was concentrated at one of the store where store demonstrations (i.e. tasting) took place, while the core choice-expansion measures (high-salience placement and promotional pricing) were implemented across all three stores during the intervention week. In total, 204 consumers completed a survey across recruitment channels (social media $n = 135$; in-store posters $n = 21$; demo stand $n = 48$). The survey sample was slightly female-skewed (65% female) and relatively mature in age, with over half of respondents (53%) aged 45 years or older. For a full overview of the socio-demographic sample of this pilot, please see [Table 23](#) (in the appendices section). At the store with the demo stand, more than 800 shopper interactions were recorded and 808 product samples were distributed (430 falafel; 378 burger). Taken together, these indicators confirm that the intervention achieved substantial shopper contact at the point of decision, particularly in the store where low-risk trial was added.

Sales performance and behavioural uptake in the redesigned choice environment

Sales data show a sharp increase in purchases of both featured AP products during the intervention week relative to the control week across the three stores. Veggie Burger increased from 3 to 81 units sold (+2,600%), while Veggie Falafel increased from 10 to 171 units (+1,610%). Conventional meat products included in the same campaign also showed substantial sales increases, rising from 70 to 665 units for Big Beefy Burger (+850%), from 32 to 510 units for Big Juicy Burger (+1,494%), and from 197 to 2,389 units for a conventional sausage product (+1,113%). However, although these conventional products recorded much higher absolute sales volumes, the proportional increase was strongest for the featured AP products.

Interpreted through a choice-expansion lens, these week-on-week changes are consistent with the intervention's two main behavioural mechanisms. First, relocating the AP products from their standard shelf placement into end-of-aisle campaign coolers increased salience and discoverability at the moment of routine protein choice. Second, promotional pricing reduced perceived financial risk, lowering the threshold for first-time trial in a category that many shoppers treat as uncertain (taste, "meal suitability", and perceived processing). Importantly, AP products were displayed alongside conventional meat products that were also on promotion. This parity design created side-by-side exposure and comparison without restricting conventional choice, aligning with the core premise of choice expansion: increasing the likelihood of trial by making alternatives easier to notice and easier to choose.

Within-week patterns further suggest that low-risk trial formats (tastings) coincided with higher sales intensity. For the burger, the daily sales rate on demo days (1.5

Intervention week compared with control week:

Veggie Burger: +2,600%

Veggie Falafel: +1,610%

Strongest proportional increase among all promoted products

Making APs easier to choose increased trial

Reducing effort and increasing visibility can substantially increase first-time purchase without removing conventional options.

days) was 1,258% higher than on non-demo days (4 days); for falafel, the daily sales rate was 277% higher. While these comparisons are descriptive and confounded by the campaign context, the pattern aligns with the intervention logic that immediate sensory experience can convert curiosity into purchase by reducing taste uncertainty at the point of choice.

Consumer profiles, segmentation, and attitudes

Survey responses indicate that the intervention reached a broad mix of shoppers rather than only highly plant-forward consumers (omnivores 53%, flexitarians 23%, vegetarians 11%, vegans 13%). Younger respondents showed greater diversity in dietary identity, whereas older respondents were more concentrated among omnivores. These segmentation patterns matter primarily because the choice-expansion measures were designed to work without requiring strong prior motivation: the intervention aimed to make APs easier to encounter, compare, and try during routine shopping.

Choice expansion is designed for mainstream shoppers - not only for consumers already interested in alternative proteins.

Consistent with this logic, attitudinal patterns suggest different “starting points” across shopper groups. Vegans and vegetarians expressed the most favourable attitudes, omnivores the least, and attitudes generally declined with age. In practical terms, this implies that the intervention’s most behaviourally important mechanisms for less receptive groups are those that reduce effort and uncertainty in the immediate environment, high-visibility placement, clear campaign signposting, and risk-reducing price cues, rather than messages that assume pre-existing commitment to plant-based eating. Gender patterns in the survey also point in this direction: women reported somewhat higher AP engagement and near-term intentions than men, reinforcing that the redesigned environment must support low-effort uptake among shoppers who are not already predisposed.

What encouraged shoppers to try APs?



Perceived effectiveness of intervention elements and product evaluation

Survey findings map closely onto the behavioural hierarchy embedded in the pilot design: intervention elements that were embedded directly in the shopping environment were most likely to be noticed and perceived as influential, whereas elements requiring additional effort were weaker.

Across survey channels, respondents most consistently rated price discounts as making it more attractive to try new products. Product placement in campaign coolers was also perceived as effective in making the products stand out. In-store tastings were evaluated positively as a facilitator of trial, consistent with the idea that experiential cues can reduce uncertainty more effectively than informational cues in a low-effort shopping context.

Data from the extended demo-stand survey (n = 48) reinforces this pattern in a way that is directly relevant to the intervention mechanics.

Campaign placement and visible signage (posters/roll-up) were most frequently reported as being noticed, alongside the tasting itself. By contrast, the QR recipe

sticker and conventional advertising channels (retailer app/magazine) were among the least noticed and least influential on purchase intention. This suggests that the most potent levers were those that changed the immediate choice environment (visibility + value + trial), whereas optional decision-support tools that required scanning and follow-through played a secondary role.

Product experience as the “gateway” condition for trial

Product evaluations were positive overall, with falafel rated slightly more favourably than the burger. Perceived comparability to meat (“as good as a comparable meat-based product”) averaged 3.5/5 for falafel and 3.4/5 for burger, with younger respondents rating both products higher than older respondents. These evaluation patterns are important because the choice-expansion strategy can increase trial, but sustained uptake depends on whether the product experience meets mainstream expectations around taste and texture.

Interaction-based impressions from the tasting stand provide additional context for how the intervention may have operated at the point of choice. Many consumers, including self-identified meat eaters, expressed positive surprise about taste and texture, and staff observed multiple instances of purchase following a positive tasting experience. At the same time, a small number of shoppers raised concerns about clarity and interpretability (e.g., whether the term “burger” could be misleading for AP products). This aligns with living lab insights that trust is not guaranteed by placement alone: clear labelling and easy recognition remain crucial in low-effort retail decisions, especially when products are integrated near conventional proteins. [Table 4](#) summarises the main outcome patterns in one place.

The most effective interventions required the least effort from shoppers—they were embedded directly into the shopping experience.

Indicator	Control week	Intervention week	Change pattern
AP burger sales (units)	3	81	Large increase consistent with higher salience + lower perceived risk
AP burger sales (units)	10	171	Large increase consistent with higher salience + lower perceived risk
AP falafel sales (units)	-	-	265 units total
Total AP units sold (both products, both weeks)	None	>800 interactions; 808 samples	Strong point-of-choice exposure and trial opportunity
Demo intensity	-	Burger +1,258%; Falafel +277%	Suggestive link between tasting (uncertainty reduction) and purchase
Survey responses	-	204 total (135 social; 21 posters; 48 demo)	Multi-channel feedback on noticeability and perceived effectiveness
Most influential elements (self-report)	-	Discounts + tastings + placement	Low-friction levers embedded in the environment dominate

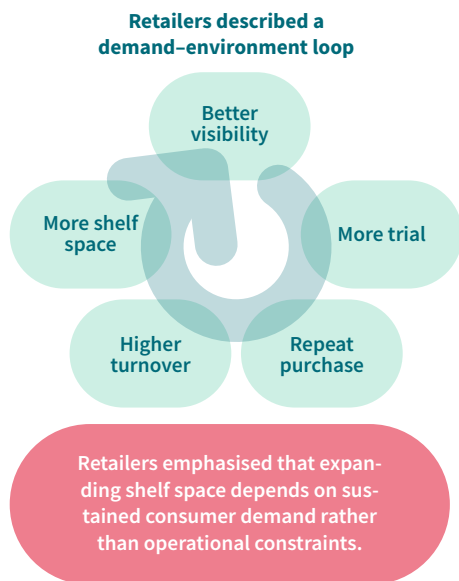
Exchanges with food decision makers (retailers)

What “choice expansion” means in retail terms

Across the six interviews (Coop, NorgesGruppen, Rema 1000, and Bunnpris), retailers implicitly framed “choice expansion” less as expanding the number of AP product lines to the assortment and more as making APs usable choices in routine shopping: easy to find, easy to understand, and credible enough to place in the basket without extra effort or risk. In this context, APs were primarily understood as processed vegetarian/vegan meat substitutes (e.g., burgers, sausages, mince, cold cuts) and, to some extent, dairy alternatives. Minimally processed plant ingredients such as lentils, beans, and tofu were generally treated as staple goods rather than part of the AP category. Several interviewees noted that the term APs can feel alienating, and some preferred “meat substitutes” as a clearer label aligned with how shoppers make dinner-category decisions.

Market development and the constraints on expanding choice

Retailers consistently described processed APs as a small and declining category following strong growth between 2016 and 2021. From a choice-expansion perspective, the downturn reflects a tightening of the conditions needed for mainstream shoppers to consider these products “worth trying”: higher prices, disappointment with taste/texture, increased scepticism toward ultra-processed foods, and long or unfamiliar ingredient lists were repeatedly cited as drivers that reintroduce friction and reduce confidence at the shelf. Interviewees also pointed to weakening social pressure to reduce meat consumption (“meat shame”) and a broader shift in health perceptions, where meat is increasingly framed as “clean protein” while highly processed substitutes attract scrutiny. In parallel, retailers reported growing demand for less processed plant-based ingredients and home-cooking-oriented options, even as processed substitutes lost momentum.



Customer profile and repeat purchase as the bottleneck for sustained expansion

Retailers described current buyers of processed AP products as younger, urban, and relatively well-informed consumers making deliberate choices. Several interviewees noted that parts of the earlier flexitarian segment have reduced or discontinued purchases of processed APs, which contributes to low repeat purchase. In choice-expansion terms, this matters because trial is only the first step: if product experience and perceived value do not hold, the “expanded choice” is not sustained in practice. Retailers emphasised that repeat purchase and predictable turnover are the commercial signals that allow the category to remain visible, avoid delisting, and justify continued exposure.

Placement, visibility, and the risk of creating new frictions

Operationally, retailers reported few structural or logistical barriers to carrying AP products. Constraints were primarily commercial, limited shelf space, low turnover, and waste/shrink, rather than supply-chain or in-store process limitations.

Visibility alone is not enough. Choice expansion succeeds only when products are also easy to recognise, understand, and trust.

Placement strategy was described as unresolved and context-dependent, with experimentation rather than a single best approach. Integrated placement could increase visibility and enable side-by-side comparison, especially for fresh products placed near conventional equivalents, supporting the logic of choice expansion. However, retailers also stressed that integration can create new frictions if navigation becomes less intuitive or if identity cues are ambiguous: some vegetarian shoppers prefer not to visit meat sections, while some meat-oriented shoppers may feel disrupted or confused. For frozen products, segregation was reported as more common because integrated placement increases the risk that APs are overlooked. Across interviews, interviewees emphasised that placement only “expands choice” when it reduces friction overall – visibility must be paired with clear labelling and easy interpretation at a glance.



What it would take to scale choice expansion

Retailers’ views converge on a “demand–environment loop”: retailers expand visibility when products sell reliably, while products sell more reliably when the environment makes them easy to find, understand, and trust. Choice-expansion interventions (e.g., high-salience placement, campaign visibility, tastings, and price promotions) can help trigger trial, but retailers stressed that scaling depends on conditions that secure repeat purchase and reduce waste risk products that deliver on taste, price competitiveness, simplicity, and “cleaner” ingredient profiles. Without these conditions, expanded exposure is difficult to justify economically, regardless of operational feasibility.

Outlook

This pilot provides a practical test of whether supermarket-based “choice expansion” can increase uptake of AP products by reducing friction in the retail choice environment, and how such measures are perceived by both consumers and retail decision makers. By triangulating objective sales outcomes from a two-week intervention across three stores of a major Norwegian supermarket chain (control week vs intervention week), consumer feedback from short surveys (n= 204 across recruitment channels), interaction-based impressions from in-store tastings (>800 customer interactions; 808 samples distributed), and retailer interviews (n = 6 across Coop, NorgesGruppen, Rema 1000 and Bunnpris), the results offer insight not only into immediate behavioural effects but also into the conditions under which similar retail interventions may be viable at scale.

verged. Sales patterns and in-store interactions indicate that reducing effort and perceived risk can activate short-term trial at the point of choice, while retailer accounts highlight that longer-term expansion depends on repeat purchase, credible product propositions, and a commercial rationale that justifies shelf space and exposure.

Overall, the evidence suggests that redesigning supermarket choice architecture can increase short-term AP uptake, but that durable scaling depends on whether interventions expand usable choice for mainstream shoppers, without creating confusion, undermining trust, or failing the retailer business case.

Choice expansion: uptake through salience and reduced perceived risk

The intervention was designed around choice expansion principles: AP products remained optional (no restrictions on conventional proteins), but were made easier to encounter, compare, and try through high-salience placement, parity display alongside conventional meat campaign products, and reduced perceived trial risk via price discounts and tastings. Behavioural theory suggests that such structural approaches can shift behaviour by changing what is noticed and how easy it feels to act, rather than relying on deliberate motivation changes.

These dynamics were visible empirically. Purchases of both featured AP products increased sharply in the intervention week compared with the control week across the three stores (Burger: 3 → 81 units; Falafel: 10 → 171 units). Within-store patterns at the demo store further suggest that low-risk trial formats can intensify sales: daily sales rates were higher on demo days than non-demo days for both products (Burger +1,258%; Falafel +277%, descriptive comparison). While conventional meat products promoted in the same coolers also increased strongly (and remained far higher in absolute volume), the AP products showed the largest relative lift, consistent with the intervention's goal of making alternatives visible and easy to choose in routine protein-decision moments.

From trial to routine purchase

1 Notice the product



2 Try it once



3 Like the taste and value



4 Buy it again



Choice expansion can activate trial, but long-term success depends on products that consumers trust, enjoy, and perceive as good everyday value.

Taken together, the results support the core mechanism of choice expansion: when AP products are encountered in prominent campaign locations and the first purchase is made easier (through discounts and tastings), trial can increase substantially without restricting choice.

Expanded choice is not the same as expanded demand

However, retailer interviews place these short-term shifts within a constrained market context. Across all interviews, processed AP products were described as a small and declining category in Norway after a strong growth period between 2016 and 2021. Retailers attributed the downturn to a combination of higher prices, dissatisfaction with taste and texture, scepticism toward ultra-processed foods and long ingredient lists, and weakening social pressure to reduce meat consumption. At the same time, retailers reported rising demand for minimally processed vegetarian staples such as lentils, beans and tofu, which many did not classify within the processed AP category.

This distinction matters for interpreting choice expansion. The pilot demonstrates that the retail environment can successfully prompt trial when friction is reduced. Yet retailer accounts suggest that availability and visibility alone cannot reverse category decline if product attributes undermine trust, value perceptions, or repeat purchase. In this sense, choice expansion can open the door to trial, but the market outcome ultimately depends on whether products deliver a credible everyday proposition that consumers return to.

Retail feasibility and the demand–environment loop

Operationally, retailers reported few structural or logistical barriers to running AP-focused campaigns or carrying these products. The binding constraints were primarily commercial: shelf space allocation, low turnover, and waste (shrinkage), rather than in-store processes or supply chain limitations. This aligns with the idea that retail environments can be adjusted relatively easily, but only when there is sufficient commercial justification.

Interviewees also described ongoing experimentation with integrated versus segregated placement, highlighting trade-offs rather than clear best practice. Integration can increase visibility and support comparison, particularly for fresh products, yet may also create irritation or confusion for some shoppers (including vegetarians who prefer to avoid meat sections, and meat-oriented consumers who feel disrupted). For frozen products, segregation was often described as more practical because integration can make items “get lost.” In food-environment terms, this reinforces that choice expansion requires careful design to reduce friction without creating new frictions: the goal is not simply to add exposure, but to make navigation intuitive and product identity unambiguous.

These operational reflections point to a demand–environment loop. Retailers expand visibility when products sell reliably, and products sell more reliably when the environment reduces effort and supports confident choice. Choice expansion interventions can help kick-start trial and generate a demand signal, but repeat purchase and waste control determine whether expanded exposure is sustained.

Implications for future interventions

Taken together, the pilot suggests that retail choice expansion is most promising when it combines environmental salience with mechanisms that reduce perceived risk, while recognising that repeat purchase, and therefore scalability, depends on product credibility. Future interventions may therefore benefit from focusing on a tight set of high-leverage elements that work at the shelf and in routine decision moments:

- Salience and parity placement that ensures AP options are encountered where protein decisions are typically made, with clear and intuitive signposting
- Low-risk trial formats (price promotions and tastings) that reduce financial and sensory uncertainty and convert curiosity into action

- Clarity and trust safeguards (unambiguous labelling, simple naming, and transparent product information) to prevent confusion and protect perceived legitimacy
- Product and value alignment that supports repeat purchase (taste/texture performance, cleaner labels, and pricing that feels comparable to conventional dinner solutions)
- Retailer business-case monitoring that tracks turnover, waste, and repeat purchasing signals to determine whether expanded exposure is commercially sustainable.

In this sense, the path forward is a calibrated “middle route” between purely informational retail messaging and unrealistic assumptions that visibility alone will rebuild demand. Choice expansion can be behaviourally effective in activating trial, but long-term transformation requires aligning the choice environment with products that consumers trust, enjoy, and perceive as good everyday value – conditions that also allow retailers to maintain shelf space and visibility over time.

Research limitations and conclusions

Overall, the pilot provides practice-oriented evidence that supermarket choice architecture can be redesigned to increase uptake of AP products without restricting conventional options. Across three Coop stores, moving two AP products into high-salience campaign placement and combining this with price discounts and (in one store) tastings coincided with substantial week-on-week sales increases. This pattern is consistent with the core behavioural logic of choice expansion: when APs are easier to find, easier to compare, and lower-risk to try, consumers are more likely to purchase them in routine shopping moments.

Behavioural interventions can encourage trial, but long-term market change depends on product quality, consumer trust, and commercial viability.

At the same time, the findings reinforce an important boundary condition for choice expansion in retail: trial is not the same as sustained uptake. Retailer interviews and consumer feedback converge on the idea that choice-environment improvements can open the door to trial, but longer-term category growth depends on repeat purchase and the broader commercial rationale (turnover stability, waste control, and shelf-space justification). In this context, scaling choice expansion requires not only visibility and parity placement, but also product propositions that hold up over time (taste/texture performance, clearer “cleaner label” profiles, and perceived value/price competitiveness).

These conclusions should be interpreted in light of several methodological and contextual considerations.

- **First, short intervention duration and limited geographic scope.** The pilot ran for two weeks across three stores (control week vs intervention week). Observed uplifts should therefore be interpreted as immediate campaign effects rather than evidence of longer-term behaviour change, repeat purchasing, or habit formation.
- **Second, implementation of low-risk trial formats varied across stores.** Tastings, a core uncertainty-reduction mechanism, were offered only at one of the intervention stores. While this uneven rollout may reduce direct uniformity across sites, it also creates a clearer analytical contrast: because campaign placement and discounting were held constant across stores, the single-site use of tastings can be understood as a natural experiment that helps isolate their marginal effect relative to the baseline intervention package.
- **Third, voluntary survey participation and potential selection effects.** Consumer survey responses (N = 204 across channels) were collected on a voluntary basis and likely overrepresent more engaged shoppers. As a result, attitudinal patterns and perceived effectiveness ratings should be treated as indicative rather than representative of the full shopper population.
- **Fourth, limited behavioural observation beyond sales.** Due to ethical constraints on covert observation, interaction-based impressions were collected only during overt engagement at the demo stand. This restricts insight into unprompted shopper behaviour (e.g., navigation, attention, confusion) across the wider store environment.
- **Fifth, bundled intervention components and attribution limits.** The intervention combined multiple elements (high-salience placement, price incentives, communication materials, QR recipe support, and tastings). Consequently, it is not possible to attribute observed effects to any single component with precision; results reflect a choice-expansion “package” effect.
- **Sixth, broader campaign context and low baseline volumes.** Featured AP products were placed in the same campaign coolers as promoted meat products, and those meat products also increased strongly. This creates attribution challenges, as part of the uplift may reflect general campaign traffic and price-led purchasing dynamics rather than AP-specific effects alone. In addition, percentage increases should be interpreted cautiously where baseline volumes were very low.

Finally, qualitative generalisability constraints. Retailer interviews (n = 6) provide valuable strategic and operational insight from all major actors, but they are not designed for statistical generalisation. They reflect the Norwegian retail context and a period where processed AP substitutes were described as a small and declining category.



These considerations suggest that the results should be viewed as indicative rather than definitive. Nonetheless, the convergence of (i) objective sales outcomes, (ii) consumer-reported salience of low-friction levers (discounts, placement, tastings), and (iii) retailer emphasis on repeat purchase and commercial viability provides a robust basis for design direction. Future choice-expansion interventions are likely to be most effective when they combine high-visibility placement and parity design, risk-reducing incentives and trial formats, and trust/clarity safeguards, while explicitly monitoring the retailer business case (turnover, waste, and signals of repeat demand).

Behavioural intervention pilot 3 focused on choice environment



Background and context

Besides retailers and supermarkets, the gastronomy sector represents a major food environment where European consumers make routine food decisions and establish consumption patterns. Restaurants and cafés therefore have significant potential to support healthier and more sustainable diets, including through increased uptake of APs [38, 40, 41]. However, out-of-home dining remains anchored in traditional meat- and dairy-based foods, and AP dishes are often not positioned in ways that support habitual selection [37, 39, 41].

A key reason is that APs are still not fully embedded in the choice architecture of gastronomic settings. Menu structure and layout, dish positioning, naming and descriptive language, and contextual cues (e.g., symbols, recommendations) shape what feels “normal,” “recommended,” and “worth trying” [40, 43, 46]. When AP dishes are isolated, labelled in ways that signal niche identity, or not described in appetising and familiar terms, consumers may overlook them or perceive them as less legitimate choices [40, 43, 46].

This creates a clear rationale for choice-environment interventions: approaches that preserve autonomy and maintain full menu choice, while redesigning the restaurant environment so that AP dishes become easier to notice, easier to interpret, and more appealing to select in routine dining occasions [42, 43, 45].

Behavioural insights from Living Labs

The intervention built on behavioural insights generated through LIKE-A-PRO Living Labs in Spain (predominantly) and the Netherlands due to the regional and to a certain degree cultural connection to Belgium, which explored how consumers respond to AP dishes in restaurant settings. These sessions highlighted both opportunities and barriers.

On the opportunity side, participants responded best when AP dishes were presented in recognisable formats, with familiar ingredients, and described using sensory, emotionally engaging language. Participants also valued clear visual iden-

Choice environment interventions do not change what people can order, they change how easy different options are to notice and choose.

tification and considered chef or staff endorsement as a legitimacy cue. Menu structure emerged as relevant: integrated menus were perceived as more normalising for younger and more open diners, while segregated vegetarian sections could support discovery and decision confidence for less adventurous eaters.

At the same time, barriers remained. Some participants associated APs with ultra-processing and expressed concerns about ingredient transparency. A perceived loss of autonomy emerged when APs were framed as defaults or as imposed sustainable choices. Habitual ordering routines were also salient, especially in lunch contexts where people often choose quickly and rely on “usual” dishes. Finally, explicit “vegan/alternative” labelling could trigger avoidance among some mainstream diners despite openness to the dish itself.

Design principles for the pilot

Building on these insights, the following principles guided the design and implementation of the pilot:

- **Increase salience and legitimacy** of AP dishes through menu placement and clear visual cues
- **Test integrated vs segregated menu layouts** to compare normalisation versus guided discovery effects
- **Use sensory-led, emotionally engaging descriptions**, foregrounding taste and experience rather than protein-source framing
- **Leverage staff-led social influence** where feasible by encouraging recommendations and short storytelling
- **Preserve autonomy and avoid coercion**, framing AP dishes as attractive options rather than defaults
- **Minimise operational burden**, ensuring feasibility within real restaurant workflows.

Together, these principles shaped the restaurant-based choice-environment intervention described below.

Methodology and intervention design

Setting and target group

The pilot was implemented in two restaurant settings in two countries to test choice-environment approaches across contrasting gastronomic contexts:

- LABe Restaurant, Donostia–San Sebastián (Spain) – implemented across 6 consecutive weekends during lunch service (Fri–Sun; 7 Nov–14 Dec 2025).
- Bar Amelia, Ghent (Belgium) – implemented across 2 consecutive weeks during weekday lunch service (Mon–Fri; 3–14 Nov 2025).

The target group comprised adult restaurant customers exposed under naturalistic, real-world dining conditions. Customers were not recruited into an experiment in advance; instead, the intervention was embedded in routine service, and behavioural outcomes were assessed through aggregated sales data and voluntary post-meal survey participation.

Consumer-facing choice-environment intervention

The consumer-facing component tested whether AP uptake differs when a new AP dish is (i) integrated into the main menu versus (ii) segregated into a dedicated vegetarian/vegan section. The intervention followed a three-phase structure in each restaurant:

- **Phase 1 – Control:** business-as-usual menu; sales recorded before introducing the new AP dish. Existing vegetarian/vegan dishes remained available as usual.
- **Phase 2 – Integrated menu layout:** AP dish placed within the regular menu, alongside conventional dishes, to support normalisation.
- **Phase 3 – Segregated menu layout:** AP dish placed in a dedicated vegetarian/vegan section, alongside other plant-forward options, to support guided discovery.

Please see the menu layouts in Figure 5, Figure 6, Figure 7 (in the appendices section).

Menu-layout changes were paired with additional cues intended to strengthen visibility and social legitimacy while preserving autonomy:

- **Descriptive framing:** short, sensory and emotionally appealing dish descriptions designed to increase appetite appeal and reduce “alternative/technical” associations.
- **Visual cue:** a vegetarian/vegan logo to provide immediate clarity and reduce interpretation effort at the point of choice.
- **Social influence cues:** staff recommendation and/or menu-board endorsement (e.g., “Chef’s favourite”; “Local hero”) to increase perceived popularity and legitimacy.

The featured AP dishes were adapted to each restaurant’s concept while maintaining a broadly comparable “comfort-food” format:

- LAbE (Spain): Veggie-Meat Bourguignonne with ginger–butternut purée and confit mushrooms (recipe developed by BCC Innovation using LIKE-A-PRO ingredients). Please see [Table 25](#) for the recipe in the appendices section.
- Bar Amelia (Belgium): Plant-based stew (stoofvlees format) by Greenway (adapted locally for concept fit and sourcing).

Importantly, the intervention expanded and repositioned choice rather than restricting it: conventional dishes remained available throughout, and AP dishes were framed as attractive options rather than defaults.

Stakeholder interviews with restaurant staff and management (food service actors)

To complement consumer-facing evidence, the pilot included qualitative interviews with restaurant staff and management to assess implementation feasibility, workflow implications, customer reactions, and perceived business-case constraints for scaling AP dishes. A total of $n = 6$ semi-structured interviews were conducted across roles spanning front-of-house, kitchen leadership, and management, using a shared interview guide across countries to support comparability.

The overall structure of the pilot is summarised in [Table 5](#).

Element	Description
Setting	Two restaurants (Spain: LAbE; Belgium: Bar Amelia), real-world lunch service
Duration	Spain: 6 weekends (Nov–Dec 2025); Belgium: 2 weeks (Nov 2025)
Countries	Spain; Belgium
Experimental conditions	3 phases: Control → Integrated menu → Segregated menu
Core manipulation	Menu placement of AP dish (integrated vs segregated)
Supporting cues	Sensory description + vegan/vegetarian logo + social endorsement
Stimuli	Newly introduced AP dish (site-adapted) + existing vegetarian options
Primary outcomes	AP uptake; vegetarian-category performance
Secondary outcomes	survey perceptions, satisfaction, normalisation, feasibility interviews
Qualitative component	Restaurant staff/managers interviews (feasibility, workflow, economic constraints, scalability)

Table 5: Structure of the choice environment behavioural intervention pilot

Evaluation and data collection

A mixed-methods evaluation framework was used to assess both behavioural outcomes in real restaurant settings and implementation feasibility from the perspective of food service actors. The design combined objective sales tracking (as the primary behavioural indicator) with consumer survey responses (to capture awareness, perception, and self-reported influences) and post-implementation staff interviews (to contextualise outcomes and identify operational and economic constraints relevant for scaling).

Primary outcomes focused on behavioural uptake under the different menu conditions, operationalised as (i) AP dish uptake and (ii) vegetarian-category performance (including the AP dish) across the control, integrated, and segregated phases. Secondary outcomes captured consumers' perceived noticeability and influence of intervention elements (menu layout, descriptive framing, visual cues, and social endorsement), satisfaction among those who tried the AP dish, perceived normalisation of APs on the menu, and staff reflections on feasibility and scalability.

Sales tracking

Sales and revenue data were recorded per phase and restaurant to compare ordering outcomes between the control condition (business-as-usual), the integrated layout, and the segregated layout. Data were extracted at an aggregated level and included total sales (n and €), AP dish sales (n and €), and total vegetarian-category sales (n and €). These indicators enabled assessment of whether the introduction and positioning of the AP dish was associated with (a) a direct increase in AP dish selection and/or (b) a broader shift in vegetarian-category performance, consistent with the pilot's aim to test choice-environment mechanisms through menu architecture rather than restrictions or defaults.

Sales outcomes were analysed descriptively by comparing control, integrated, and segregated conditions within each restaurant. Ratios of AP dish sales and vegetarian-category sales relative to total sales were calculated to assess changes in category contribution across phases. Given differences in duration, service format, and customer flow between Spain and Belgium, comparisons across countries are interpreted as contextual rather than strictly experimental.

Consumer surveys

Consumer perceptions and self-reported influences were collected through an online questionnaire accessed via QR code in the restaurant context. The full questionnaire and demographic instrument are provided in [Table 26](#) (in the appendices section). Participation was voluntary and linked to the dining occasion in which customers were exposed to the menu layout and accompanying cues.

The survey captured whether respondents noticed highlighted dishes and the AP dish description, how appealing the description was perceived to be, and whether descriptive language was viewed as influential relative to more factual or label-based

framing. It also assessed awareness of visual cues (e.g., vegetarian/vegan logo and menu legends) and their perceived contribution to attractiveness; visibility of staff recommendations and perceived influence on ordering; and whether respondents reported ordering the AP dish or defaulting to their usual routine.

Among those who tried the AP dish, the survey measured satisfaction with taste, presentation, and overall experience, alongside perceived normalisation of AP dishes within the menu and future likelihood of choosing AP options in restaurants.

To support interpretation and cross-country comparison, the survey included demographic items and psychometric measures, including the Food Choice Questionnaire and the Food Neophobia Scale, enabling post-hoc segmentation by motivational drivers (e.g., hedonic orientation, naturalness concerns, affordability sensitivity) and openness to unfamiliar foods.

Survey data were analysed using descriptive statistics and one-way ANOVA with Tukey’s honestly significant difference (HSD) post-hoc tests to identify significant differences between pilot sites where relevant.

Restaurant staff interviews

To complement consumer-facing measures with implementation insight, semi-structured interviews were conducted with restaurant staff and management after the pilot period. The interview guide and the list of roles interviewed are provided in [Table 28](#) (in the appendices section).

The interviews aimed to assess feasibility, operational impact, and perceived scalability of introducing and positioning AP dishes within restaurant menus. Topics included practical workflow implications (procurement, preparation, service routines), staff confidence in recommending AP dishes, perceived customer reactions (curiosity, questions, resistance), and economic considerations shaping the business case (demand uncertainty, turnover, and food waste risk). A shared interview structure was used across both countries to support comparability while allowing role-specific reflections from front-of-house, kitchen, and management perspectives.

Qualitative interview data were analysed thematically, guided by predefined domains (operational feasibility, customer response, economic viability, and scalability), allowing triangulation with behavioural and survey findings.

Ethics and data management

Participation in the consumer survey was voluntary and based on informed consent prior to questionnaire completion. No personal identifying data were collected through the survey, and all responses were analysed anonymously. Sales outcomes were analysed only in aggregated form to protect customer privacy.



The intervention was designed to minimise potential harm and preserve consumer autonomy. Conventional dishes remained available in all conditions, and no customer was required or pressured to select the AP dish. Instead, the pilot focused on choice-environment redesign (menu architecture, descriptive framing, and contextual cues) to support discovery and consideration without restricting available options.

Roles and responsibilities

The pilot was implemented by PROEF and BCC, who led dish development/adaptation, menu-layout implementation (integrated vs segregated), preparation of copy and visual cues, staff briefing, and coordination of fieldwork and data collection, including on-site support during implementation periods.

LABe and Bar Amelia hosted the intervention within routine service. Restaurant teams prepared and served the AP dish, and front-of-house staff supported service-based cues where applicable (e.g., recommendations, responding to questions) and enabled survey QR placement and access to sales data.

Results

Consumer-oriented results

Across both restaurants, the pilot achieved substantial exposure and generated both behavioural (sales) and self-report (survey) evidence on how menu architecture and contextual cues shape ordering of an AP dish in out-of-home settings.

Exposure and survey participation

At LABe (Spain), the pilot was deployed over 6 consecutive weekends at lunchtime, exposing $n = 461$ customers (Integrated: 257; Segregated: 204). At Bar Amelia (Belgium), the pilot ran over 2 weekday lunch weeks, exposing $n = 585$ customers (Integrated: 376; Segregated: 209).

Across both sites, $N = 319$ customer surveys were collected (LABe $n = 156$; Bar Amelia $n = 163$), providing insight into attention, cue recognition, ordering mechanisms, and post-trial experience. The sample was concentrated in young to middle adulthood (66.3% aged 25–44), and was slightly female-skewed overall (55.1% female). For the full demographic overview, please see [Table 27](#) (in the appendices section).

Sales performance and AP uptake

Sales tracking suggests that introducing the AP dish coincided with a higher share of vegetarian-category sales in both restaurants, and that integrated menu placement yielded stronger AP dish uptake than segregated placement in both settings.

[Table 6](#) and [Table 7](#) present sales outcomes by condition for LABe (Spain) and Bar Amelia (Belgium), respectively.

Restaurant menus influence decisions long before the first bite through what diners notice, recognise, and expect.

Pilot condition	Total sales (n)	AP dish (n / %)	Total vegetarian (n / %)
Control	67	N/A	16 (24%)
Integrated (total)	257	20 (8%)	75 (29%)
Segregated (total)	204	12 (6%)	56 (27%)

Table 6: Sales outcomes by condition (counts) - LABe Spain

Pilot condition	Total sales (n)	AP dish (n / %)	Total vegetarian (n / %)
Control	336	N/A	109 (32%)
Integrated (total)	376	38 (10%)	161 (43%)
Segregated (total)	209	16 (8%)	84 (40%)

Table 7: Sales outcomes by condition (counts) - Bar Amelia (Belgium)

Interpretation in relation to the intervention design

Integrated layout (AP dish placed among mainstream options) was associated with higher AP dish volumes in both restaurants (LABe 20 vs 12; Bar Amelia 38 vs 16), consistent with a normalisation mechanism: the dish is encountered as part of the “regular” choice set rather than as a niche option.

At LABe, the vegetarian category increased in absolute terms during both intervention periods relative to control. At Bar Amelia, the integrated condition also showed an increase in absolute vegetarian sales, whereas the segregated condition showed a lower absolute number of vegetarian dishes sold than the control period (84 vs 109), but a higher vegetarian share of total sales (40% vs 32%), suggesting a possible spillover (“halo”) effect, where introducing and highlighting one AP dish increased attention to plant-forward choices more broadly.

Because multiple cues were bundled within each intervention phase (menu placement + description + logo + staff/menu-board endorsement), observed differences should be interpreted as choice-environment package effects rather than the impact of menu layout alone.

Consumer insights on menu design, cues, and ordering mechanisms

Survey findings clarify why sales effects were modest and where the behavioural bottlenecks likely sit.

Across both sites, approximately half of respondents reported noticing dishes that were highlighted or more prominent (Spain 46%; Belgium 50%). A strong preference for sensory/emotional descriptions was consistent across countries ($\approx$ 75% prefer-

What diners noticed more?

1 Staff recommendation (Spain)



2 Sensory menu descriptions



3 Highlighted dishes



4 Vegetarian logo



Habitual ordering remained common



Visibility increased attention, but habitual choices continued to shape many restaurant decisions.



ring descriptive language), aligning with the intervention's descriptive framing strategy.

However, attention to descriptions differed markedly by context. A substantial share of Belgian respondents reported that they did not notice or could not recall the AP dish descriptions (reported in the partner analysis as statistically different), indicating weaker salience of this element in the Bar Amelia context and potentially limiting the persuasive “dose” of the framing manipulation.

Ordering remained limited (Spain 27.6%; Belgium 20.9%), and habitual defaulting appeared more prominent in Belgium, where a larger share of respondents reported sticking with their “usual choice/routine”. This supports a key mechanism: in out-of-home dining, many choices are routine-based, and even well-designed cues may struggle to convert attention into action unless they interrupt habits effectively.

Social influence cues showed the clearest implementation gap. Staff recommendations were noticed far more often in Spain (LABe) than in Belgium (Bar Amelia), consistent with differences in service format and how actively the recommendation cue was deployed. Active recommendation cues seem to provide a higher influence on choice even though influence remains moderate in self reporting.

Product experience among triers

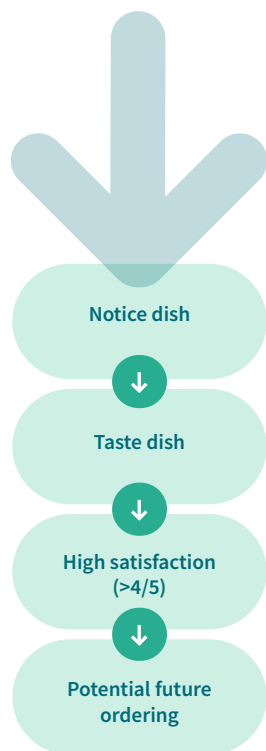
Among customers who ordered the AP dish, evaluations were consistently positive. Satisfaction with taste, presentation, and overall experience averaged above 4/5 in both sites. This indicates that the main barrier was not product acceptance once tried, but conversion from exposure/consideration to ordering, especially under habitual decision routines.

Table 8 summarises the key behavioural and perception indicators across both sites.

Indicator	LABe(Spain)	Bar Amelia (Belgium)	Pattern
Noticed highlighted dishes	46%	50%	Similar
Preferred emotional descriptions	approx. 75%	approx. 75%	Strong preference
Reported ordering dishes	28%	21%	Limited trial
Staff recommendation noticed	71%	9%	Large implementation gap
Satisfaction among triers	>4/5	>4/5	High acceptance

Table 8: Summary of key behavioural and perception signals

The behavioural pathway



The main behavioural bottleneck was getting diners to try the dish—not product acceptance afterwards.

Overall, the results suggest: (i) integrated placement performs better for uptake than segregated placement across both contexts; (ii) sensory framing is valued, but its impact depends on whether diners actually notice it; (iii) staff-led recommendation can matter, but only where it is feasible and actively executed; and (iv) once trial occurs, acceptance is high—meaning the “leverage point” is improving first-step conversion within real dining routines.

Exchanges with restaurant staff and management (food service actors)

Across the $n = 6$ semi-structured interviews that were conducted with staff and management across both pilot restaurants (front-of-house, kitchen, and managerial roles), the purpose was to assess operational feasibility, economic implications, and scalability conditions for integrating AP dishes into real-world restaurant settings.

Across interviews, there was strong convergence on one central pattern: operational feasibility was largely established, but economic uncertainty and demand risk remain the main constraints to scaling.

Operational feasibility: technically straightforward integration

Both restaurants reported that implementation was highly feasible once the recipe had been established. Kitchen teams described preparing AP ingredients as technically comparable to handling meat or fish within scratch-cooking routines. No major workflow disruptions were reported after the initial integration phase.

Staff highlighted minor practical considerations rather than structural barriers. In particular, they suggested:

- smaller batch packaging of AP ingredients to better match variable service demand,
- improved portion flexibility to reduce waste risk, and
- supplier consistency to ensure stable product quality.

Importantly, operational friction did not emerge as a limiting factor. From a culinary and logistical perspective, AP dishes were described as manageable within existing restaurant systems.

Front-of-house dynamics: context-dependent social influence

The role of staff recommendation differed markedly between settings.

At LABe (Spain), staff perceived verbal recommendations and informal storytelling as feasible and well aligned with the restaurant’s service style.

At Bar Amelia (Belgium), verbal recommendations were less prominent and social endorsement was mainly provided through written cues on menu boards and brief counter communication.

The same behavioural intervention may require different implementation strategies depending on the restaurant concept and service style.

These differences indicated that social influence mechanisms are highly context-dependent. The effectiveness of recommendation cues depends not only on consumer receptivity but on whether such cues can be embedded naturally within staff routines, confidence levels, and time constraints.

Economic constraints and the business case

Across interviews, the main barrier to scaling AP dishes was not ingredient cost but uncertain demand and food-waste risk. While AP ingredient prices were described as increasingly competitive with animal proteins, managers emphasised that:

- low or unpredictable turnover makes expansion risky,
- established meat-based dishes provide more stable revenue streams, and
- expanding AP offerings without sustained demand could undermine profitability.

Staff also noted that explicit “vegan” or “alternative” labelling may deter some mainstream diners. Several interviewees recommended a sensory-led positioning strategy, emphasising flavour, texture, and culinary identity rather than protein source or dietary label.

A recurring theme was that AP dishes must move beyond being framed as substitutes. For broader integration, they need to establish a distinct gastronomic identity, positioned as attractive dishes in their own right rather than as replacements for conventional options.

Scalability and sector transformation

Overall, staff described the gastronomy sector as being in a transitional phase regarding AP integration. There was cautious optimism about future growth, but expectations of rapid transformation were limited. Scaling was seen as conditional on:

- sustained and visible consumer demand,
- continued product quality improvement,
- staff training and familiarity, and
- alignment between AP dishes and restaurant concept.

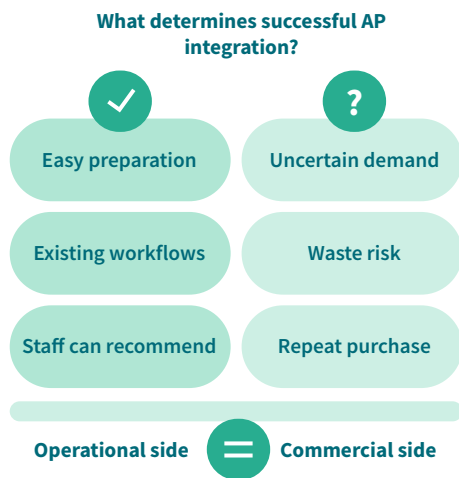
In summary, the interviews reinforce a key interpretation of the pilot results: choice-environment adjustments can support trial and visibility, and operational barriers are manageable, but durable expansion of AP dishes in food service depends primarily on strengthening the business case through consistent demand and credible culinary positioning.

Outlook

This pilot provides a real-world test of whether redesigning restaurant choice environments can support uptake and normalisation of AP dishes in out-of-home settings. By triangulating sales data, consumer surveys (N = 319), and staff interviews (n = 6), the findings offer insight into both behavioural response and implementation feasibility.

Choice environment effects: visibility supports trial, but habits constrain conversion

Across both restaurants, introducing an AP dish within a structured choice-environment intervention was associated with increased vegetarian-category sales and measurable AP uptake. Integrated placement consistently generated higher AP dish volumes than segregated placement, aligning with the behavioural logic of normalisation: when AP dishes appear within the mainstream menu, they are encountered as standard options rather than niche alternatives.



At the same time, effects on ordering remained modest and context-dependent. Survey findings indicate that while many customers noticed highlighted dishes and expressed a strong preference for sensory, emotionally engaging descriptions, a substantial share defaulted to habitual choices, particularly, in the Belgian setting. This reinforces a key behavioural constraint in restaurant environments: routine-driven decision-making can limit the conversion of attention into action.

Importantly, once trial occurred, product satisfaction was high across both countries. Taste, presentation, and overall experience were rated positively, suggesting that product quality is not the primary bottleneck. The critical leverage point lies in increasing conversion from consideration to first trial, particularly within routine dining contexts.

Implementation feasibility and economic realities

Insights from staff interviews converge with the behavioural data. From an operational perspective, integrating an AP dish was described as technically feasible and compatible with existing kitchen workflows. No major structural barriers were identified once recipes were established.

However, scalability is shaped less by operational feasibility and more by economic viability. Staff consistently identified uncertain demand and food-waste risk as the principal constraints to expanding AP offerings. Without predictable turnover, expanding menu space for AP dishes remains commercially sensitive.

Interviewees also emphasised the importance of sensory-led positioning over explicit “vegan” or “alternative” signalling. Establishing AP dishes as attractive culinary options with their own gastronomic identity, rather than framing them primarily as substitutes, was viewed as critical for broader mainstream acceptance.

Implications for scaling restaurant-based interventions

Taken together, the combined evidence suggests that choice-environment redesign can play a meaningful but catalytic role in supporting AP integration in gastronomy. The most promising configuration emerging from this pilot includes:

- **Integrated menu placement** to support normalisation;
- **Sensory-led, emotionally engaging descriptions** to enhance appeal;
- **Context-appropriate social endorsement** (e.g., staff recommendation) aligned with service style;
- Attention to **business-case safeguards**, including portion flexibility and waste reduction.

However, behavioural design alone is unlikely to transform restaurant demand at scale. Durable expansion of AP offerings requires alignment between consumer routines, product-market fit, and economic sustainability.

Overall, the pilot indicates that restaurant choice environments can be shaped to increase visibility, legitimacy, and trial of AP dishes without restricting consumer autonomy. Yet long-term sector transformation depends on embedding these behavioural insights within viable culinary concepts and stable demand conditions across diverse European contexts.

Research limitations and conclusions

Overall, the pilot provides practice-oriented evidence that restaurant choice environments can be reshaped to support consideration and trial of AP dishes without restricting autonomy. Across both sites, integrated menu placement was associated with higher AP dish uptake than segregated placement, and the introduction of a high-quality AP dish appeared to increase attention to the vegetarian category overall. Survey findings converge on a clear design implication: sensory-led, emotionally engaging descriptions are consistently more compelling than label-heavy messaging, while logos and menu legends support noticing but rarely persuade on their own.

At the same time, the findings highlight an important boundary condition for choice-environment interventions in gastronomy. Even when AP dishes are noticeable and well liked by those who try them, habitual ordering routines and context-specific service formats can limit conversion from consideration to trial. From the staff perspective, operational feasibility is generally high once recipes are established, but scalability depends on demand stability and the ability to manage waste risk, alongside avoiding stigma linked to “alternative/vegan” positioning for some mainstream diners.

Choice environment redesign can support trial, but lasting menu transformation depends on consumer demand, culinary quality, and a sustainable business case.

These conclusions should be interpreted in light of several methodological and contextual considerations.

- **First, site and format specificity.** The pilot was implemented in two restaurants with distinct concepts, service formats, and customer profiles. Differences in implementation duration and opening schedules (Spain: weekend lunch over 6 weeks; Belgium: weekday lunch over 2 weeks) constrain direct comparability and limit generalisability beyond similar gastronomic contexts.
- **Second, short-term behavioural observation.** Sales data capture immediate ordering during the intervention periods and do not measure repeat purchasing, longer-term habit formation, or sustained shifts in menu selection over time.
- **Third, voluntary survey participation.** Survey responses were voluntary and likely overrepresent more engaged customers, limiting representativeness. Operational frictions during fieldwork (e.g., QR-code confusion; external researchers being mistaken for restaurant staff) may also have influenced participation and recall of menu elements.
- **Fourth, bundled intervention components.** Menu placement, descriptive framing, visual cues, and social endorsement were applied together as a cohesive choice-environment intervention. While this supports ecological validity and reflects realistic implementation, it limits the ability to attribute observed effects to any single component.
- **Fifth, limited qualitative sample.** Staff interviews (n = 6) provide valuable feasibility and scalability insight grounded in operational experience, but findings are not statistically generalisable across the food service sector.

Taken together, these considerations suggest that the results should be viewed as indicative rather than definitive. Nonetheless, the convergence between behavioural sales signals, consumer survey responses, and staff accounts provides a robust basis for assessing feasibility and design direction. Future restaurant-based interventions are likely to be most effective when they combine normalised placement, sensory-led framing, and feasible social endorsement, while aligning with restaurant business-case realities that support repeat demand and minimise waste.

Behavioural intervention pilot 4 focused on beyond choice



Background and context

In efforts to promote sustainability and encourage the consumption of APs, much emphasis has been placed on campaigns, marketing, and advertising. However, many initiatives tend to focus narrowly, often framing messages primarily through an environmental lens or centring on the product itself, and frequently use language, visuals, and messaging that are not consumer-oriented or culturally and locally relevant. In practice, this can limit reach and resonance across different lifestyles and food cultures [37, 40, 46].

At the same time, the overall impact of many communication efforts remains limited. One reason is that they often underestimate the complexity of human behaviour. Food decisions are shaped by a web of influences, including cultural identity, emotional comfort, taste preferences, social norms, trust, and entrenched routines. Simply raising awareness and providing information is rarely sufficient to drive meaningful change [21, 40, 43].

This creates a clear rationale for “beyond choice” approaches: interventions that target upstream determinants of behaviour, such as perceived norms, identity alignment, emotional resonance, and feasibility, so that sustainable behaviours feel relevant, achievable, and personally meaningful, not abstract or demanding. In the context of AP uptake, beyond choice interventions aim to bridge the gap between awareness, intentions, values, and action by shaping how people feel about, understand, and imagine APs in everyday life [37, 40, 42, 43, 46].

Behavioural insights from Living Labs

Feedback from the LIKE-A-PRO Living Labs highlights key opportunities and barriers in communicating about APs. Participants consistently responded best to messages that were short, clear, and emotionally engaging. Catchy language that sparked curiosity, or used sensory and imaginative phrasing, was perceived as especially effective. Emotional resonance increased memorability, particularly when linked to personal values, family memories, or community belonging. Participants

Beyond choice approaches do not only inform consumers; they shape whether alternative proteins feel relevant, normal, and achievable.

preferred positive and empowering framing that focused on benefits (e.g., health, affordability, or sustainability) rather than guilt, restriction, or moral pressure.

Messages were also more compelling when they felt realistic and achievable, for example by encouraging simple swaps or trying plant-based options once a week. Social proof, showing that “people like me” already engage, helped normalise APs and reduced the sense that AP eating is niche. Participants also valued clear, data-backed comparisons (environmental or financial), which enhanced credibility. Visual design mattered as a supporting layer: well-executed visuals improved clarity and strengthened emotional connection.

Several barriers reduced effectiveness. Some participants had negative associations with the term “plant-based,” which could trigger resistance. Messages that were vague, abstract, emotionally flat, overly technical, or unnatural (e.g., “protein source”) were less engaging. A preachy or moralising tone often provoked defensiveness. Perceived difficulty was another deterrent: if a message implied that changing routines would be complicated or demanding, people were less inclined to act. Finally, cultural references (including nostalgia) could be powerful but sometimes missed the mark when they felt irrelevant.

Design principles for the pilot

To improve the effectiveness of communication promoting APs, the pilot was guided by the following principles:

- **Keep messages short, clear, and emotionally relevant**, using relatable themes (health, family, shared impact)
- **Focus on benefits rather than guilt**, emphasising what people gain (taste, vitality, affordability, contribution)
- **Highlight real-life adoption and social proof** to normalise behaviour
- **Promote small, low-effort actions** (“try once a week,” “swap one ingredient”) to lower perceived difficulty
- **Use tangible comparisons** (clear, relevant data) to make benefits feel real
- **Avoid jargon and forced messaging; preserve autonomy** with invitational language
- **Support messages with strong visuals** that increase attention and clarity
- **Test cultural relevance and adapt** tone, references, and phrasing across contexts.

Together, these principles shaped the beyond choice intervention described below.

Methodology and intervention design

Setting and target group

The Beyond Choice pilot was implemented as a digital communication intervention using Meta Ads (Facebook and Instagram) and ran for three weeks. The pilot was conducted across three countries, the Netherlands, Denmark, and Spain, selected to represent different cultural, dietary, and communication contexts within Europe (Northern, Western, and Southern regions).

The target group comprised adult users aged 18+ reached through Meta's advertising platform. Targeting was broad (18+ only), with no gender or interest filters, to observe natural response patterns under platform delivery.

In line with a "beyond choice" approach, the intervention did not attempt to re-structure point-of-purchase environments directly. Instead, it aimed to influence upstream determinants of behaviour, such as attention, affective response, perceived norms, and feasibility, by testing how different communication frames and themes shape engagement and early behavioural activation.

Consumer-facing beyond-choice intervention

The consumer-facing component was designed as a behavioural message-framing experiment delivered through real-world social media advertising. The intervention tested three communication frames across two thematic contexts:

- **Gain framing:** emphasising positive outcomes of adopting APs
- **Loss framing:** emphasising negative consequences of not changing behaviour
- **Priming:** using subtle associative cues (e.g., healthy, green, social, enjoyable) to shape attitudes indirectly.

Each frame was applied to two themes: Health and Sustainability.

This created six frame–theme combinations per country (3 frames × 2 themes). Each advertisement included:

- **three recipe images** (mushroom pasta, tofu sandwich, chickpea curry), representing different AP types,
- a **call-to-action** linking to AP recipe downloads on the project website, and
- a **copy translated and culturally adapted** to each local language.

Ads were distributed across all available Meta placements (feed, stories, explore pages, etc.) through Facebook Business Manager (please see Figure 8 in the appendices section as an example). Users were unaware they were part of an experimental study, and engagement was measured through aggregated platform analytics, with no personal or identifiable data collected.

Table 9 and Table 10 provide an overview of the ads developed for each combination of themes and frames, along with the accompanying copy that links to the recipes on the website. All example messages are shown in English here.

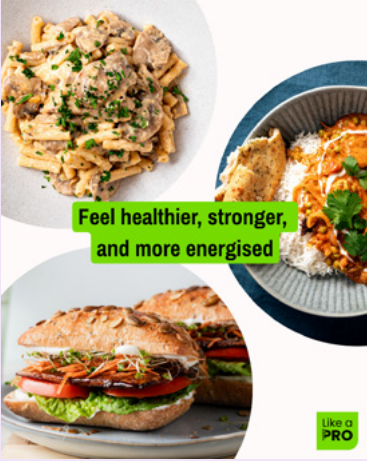
	First example	Second example	Third example
Type of message	Health theme Gain frame	Health theme Loss frame	Health theme Prime frame
Advertisement			
Copy	Just by switching to delicious alternative proteins to your meals. Try out a recipe here	Make the smart switch to alternative proteins now to protect your future well-being. Try out a recipe here	Eating well never felt this good. Try out a recipe with alternative protein here

Table 9: Overview of experimental advertisements in English (health angle)

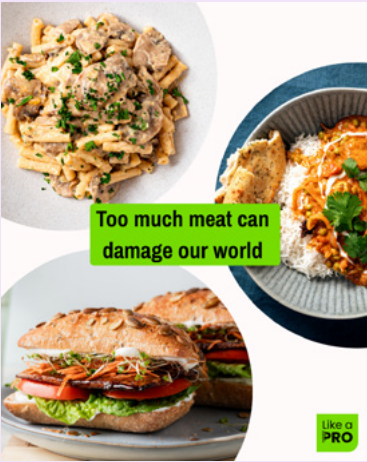
	Fourth example	Fifth example	Sixth example
Type of message	Sustainability theme Gain frame	Sustainability theme Loss frame	Sustainability theme Prime frame
Advertisement			
Copy	Every alternative protein choice you make protects our planet's resources. Try out a recipe here	If we don't change what's on our plates, we risk losing what's left of our planet. Try out a recipe with alternative protein here	Try out a recipe with alternative protein here

Table 10: Overview of experimental advertisements in English (sustainability angle)

Stakeholder interviews with campaign professionals (communication actors)

To complement the consumer-facing Meta intervention, the pilot included a qualitative stakeholder component comprising $n = 20$ in-depth interviews with campaign professionals across 11 European countries (the Netherlands, Denmark, Belgium, Germany, Greece, the UK, Spain, Slovenia, Finland, Norway, and Poland). Participants represented NGOs, communication agencies, corporate sustainability teams, and public-interest organisations involved in designing and delivering behaviour-change campaigns related to food and sustainability.

The purpose of this component was to assess implementation realism and transferability: how communication practitioners currently design and evaluate campaigns, which framing strategies they consider effective (gain, loss, priming), where resistance tends to emerge, and what constraints shape what is feasible across countries and platforms. The interviews were designed to contextualise the Meta intervention and test whether practitioner expectations converge with observed behavioural response patterns.

The overall structure of the beyond choice pilot is summarised in [Table 11](#) below.

Element	Description
Setting	Meta Ads (Facebook/Instagram), real-world delivery
Duration	3 weeks
Countries	Netherlands, Denmark, Spain
Experimental conditions	3 frames $\times$ 2 themes = 6 frame–theme combinations per country
Frames	Gain, Loss, Priming
Themes	Health, Sustainability
Stimuli	Recipe imagery + local-language copy + call-to-action to recipe downloads
Primary outcomes	Click-through rate (CTR); recipe downloads (“results”)
Secondary outcomes	Cost per click (CPC); cost per mille / one thousand (CPM); cost per result / download (CPR); results per mille (RPM)
Qualitative component	$n = 20$ interviews across 11 countries (campaign professionals)

Table 11: Structure of the beyond choice behavioural intervention pilot

Evaluation and data collection

A mixed-methods approach combined objective platform performance metrics from the Meta advertising experiment with qualitative expert interviews to assess both (i) behavioural engagement with alternative-protein (AP) communication in a real-world digital setting and (ii) perceived feasibility and best practices for campaign design and evaluation across European contexts. The primary outcomes focused on early-stage behavioural activation (engagement and follow-through), consistent with the pilot's aim to test “beyond choice” mechanisms upstream of point-of-purchase decisions.

Behavioural (Meta) campaign analytics

The Meta pilot was evaluated using aggregated advertising metrics extracted from Facebook Business Manager at the end of the three-week campaign period. Two behavioural indicators were treated as primary outcomes:

- **Click-through rate (CTR):** the proportion of reached users who clicked the campaign link after viewing an ad, used as a proxy for attention and immediate message appeal
- **Recipe downloads (“results”):** the number of users who downloaded a recipe after clicking through to the website, treated as the strongest available indicator of behavioural activation within Meta's tracking system

Secondary indicators were used to assess cost-efficiency and contextualise cross-country comparisons:

- **Cost per click (CPC)**
- **Cost per mille (CPM)**
- **Cost per result / download (CPR)**

To enable comparison across frames and themes, performance was analysed at the level of frame–theme combinations (gain/loss/priming × health/sustainability). Outcomes were interpreted both within-country (to identify local differences in response) and across countries (to assess overall patterns). Where relevant, metrics were normalised (e.g., downloads per thousand reached, RPM) to support comparability across audience sizes and platform dynamics.

Because the intervention was delivered through a live advertising platform, users were exposed under naturalistic conditions and were unaware of the experimental structure. No personal data were collected; all evaluation relied on aggregated outputs provided by the platform.

Qualitative interviews with campaign professionals (communication actors)

To complement behavioural platform analytics with contextual insight, the pilot conducted $n = 20$ semi-structured interviews with campaign professionals across 11 European countries. Interviews were conducted via Microsoft Teams. With participants' consent, interviews were recorded solely for transcription; transcripts were reviewed for accuracy and anonymised prior to analysis. Each interview lasted approximately 30–40 minutes and followed a semi-structured interview guide (please see [Table 33](#) in the appendices section). Participants included both international organisations and smaller national initiatives involved in sustainable food communication. The sample is listed in [Table 34](#) in the appendices section.

Qualitative analysis followed a deductive thematic approach guided by predefined domains aligned with the interview guide, enabling systematic comparison across organisations while preserving role-specific insights. The themes focused on: (i) campaign design principles and framing choices, (ii) experiences with resistance, disengagement, or fatigue, (iii) how behavioural impact is assessed in practice and which proxies are used, (iv) perceived feasibility of scaling across cultures and channels, and (v) expectations about the relative effectiveness of gain, loss, and priming approaches for promoting APs.

This qualitative evidence was used for triangulation: Meta analytics provided behavioural signals of what audiences did under different message conditions (clicks and downloads), while interviews supported interpretation of why particular approaches may be more workable, credible, or scalable in real-world campaign practice.

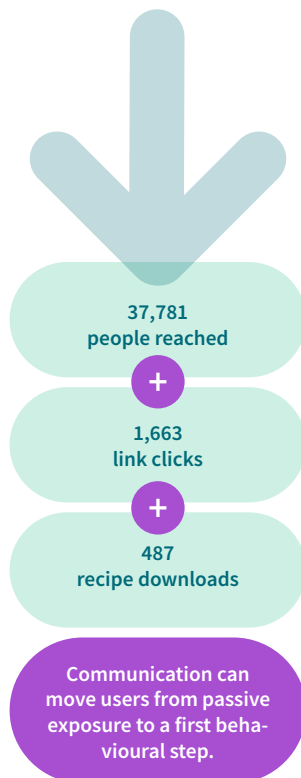
Ethics and data management

Ethical considerations focused on privacy protection and minimising potential harm in a real-world digital advertising setting. For the Meta-based behavioural component, engagement was tracked only through aggregated platform analytics (reach, impressions, clicks, downloads). No personal or identifiable user data were collected, accessed, or stored by the research team. The campaign content was limited to low-risk public-interest messaging encouraging recipe downloads and avoided sensitive targeting.

Although users were not explicitly informed that they were part of an experimental framing comparison, the intervention operated under standard advertising conditions and involved minimal risk. Visible interactions (e.g., comments) were handled cautiously to avoid amplifying polarisation or influencing other users.

For the qualitative interview component, all participants received study information and provided informed consent. Interviews were transcribed for analysis and anonymised, with identifying details removed in reporting. Data handling followed General Data Protection Regulation (GDPR) guidelines and LIKE-A-PRO consortium standards. Across both components, research activities were kept distinct from commercial marketing objectives, and messaging was designed to support autonomy rather than moral pressure.

Beyond choice reached
audiences at scale



Roles and responsibilities

The WZV led the beyond choice pilot, including campaign design, implementation via Meta Ads, and coordination of the qualitative interview study. Consortium partners supported translation and cultural adaptation for Denmark and Spain and, in some cases, assisted with recruiting interviewees and conducting interviews in local languages, which were then harmonised into English for analysis.

To support campaign evaluation and metric reporting, a market research agency (LIKELAB) was contracted to assist with extraction, structuring, and validation of Meta performance data. This division of roles ensured consistent implementation across countries and analysis aligned with consortium research standards.

Results

Consumer-oriented results

Across the three-week campaign period, the Meta-based intervention generated substantial digital exposure and measurable behavioural activation. N reached = 37,781 across the Netherlands (n = 12,313), Denmark (n = 12,458), and Spain (n = 13,010). This exceeded the projected KPI target reach of 24,430 individuals stated in the governance framework. The campaign generated n = 1,663 link clicks and n = 487 recipe downloads (“results”). Average click-through rates (CTR) were highly consistent across countries, ranging from 3.17% (Netherlands) to 3.33% (Spain), with an overall average of 3.27%.

These results indicate that the intervention successfully captured attention across diverse European contexts and produced a measurable pathway from exposure to an initial behavioural step. [Table 12](#) summarises the overall campaign performance across countries, including cost-efficiency indicators. Reach refers to the number of individual profiles/users who were shown an ad. Views indicate the total number of times ads were displayed (impressions), and may exceed reach due to repeated exposure or platform delivery dynamics.

COUNTRY	*RESULT	REACH	VEWS	CLICKS	**CTR	**CPC	**CPM	**CPR
The Netherlands	174	12.313	17.004	546	3.17%	€ 0.90	€ 28.05	€ 3.21
Denmark	165	12.458	17.258	570	3.30%	€ 0.85	€ 28.05	€ 3.30
Spain	148	13.010	16.401	547	3.33%	€ 0.42	€ 13.97	€ 1.73
Total / Average	487	37.781	50.663	1.663	3.27%	€ 0.72	€ 23.36	€ 2.75

Table 12: Meta Results – Overall results

*Results represent downloads; **CTR = Click through rate, CPC = Cost per click, CPM = Cost per mille, CPR = cost per result (download)

In behavioural terms, a recipe download is best interpreted as information seeking and planning readiness (i.e., a concrete “next step” beyond exposure), rather than confirmed consumption. Testing downstream effects would require linkage to verified cooking behaviour, purchasing, or repeat engagement over time.

Table 29 (in the appendices section) provides a more detailed view of the sample demographics.

Which framing converted best?

Strongest: Gain framing

Promising: Priming

Weakest: Loss framing

Positive and enabling messages were more effective than fear- or risk-based appeals.

Gain and priming outperform loss in conversion to action

ADVERTISEMENT	*RESULT	REACH	VIEWS	CLICKS	**CTR	**RPM
THE NETHERLANDS						
NL - Sustainability - Gain	44	2.146	3.009	103	3.42%	20.5
NL - Health - Gain	40	2.102	3.209	118	3.60%	19.0
NL - Health - Priming	30	2.182	2.939	100	3.40%	13.8
NL - Sustainability - Loss	24	1.777	2.262	70	3.09%	13.5
NL - Sustainability - Priming	24	2.260	3.053	91	2.98%	10.6
NL - Health - Loss	12	1.846	2.532	64	2.50%	6.5
NL - Total/Average	174	12.313	17.004	546	3.17%	14.0
THE NETHERLANDS						
NL - Sustainability - Gain	44	2.146	3.009	103	3.42%	20.5
NL - Health - Gain	40	2.102	3.209	118	3.60%	19.0
NL - Health - Priming	30	2.182	2.939	100	3.40%	13.8
NL - Sustainability - Loss	24	1.777	2.262	70	3.09%	13.5
NL - Sustainability - Priming	24	2.260	3.053	91	2.98%	10.6
NL - Health - Loss	12	1.846	2.532	64	2.50%	6.5
NL - Total/Average	174	12.313	17.004	546	3.17%	14.0
THE NETHERLANDS						
NL - Sustainability - Gain	44	2.146	3.009	103	3.42%	20.5
NL - Health - Gain	40	2.102	3.209	118	3.60%	19.0
NL - Health - Priming	30	2.182	2.939	100	3.40%	13.8
NL - Sustainability - Loss	24	1.777	2.262	70	3.09%	13.5
NL - Sustainability - Priming	24	2.260	3.053	91	2.98%	10.6
NL - Health - Loss	12	1.846	2.532	64	2.50%	6.5
NL - Total/Average	174	12.313	17.004	546	3.17%	14.0

Table 13: Meta Results – by country

*Results represent downloads; **CTR = Click through rate, RPM = result per thousand reached

When comparing the six frame–theme combinations, clear differences emerged in behavioural activation, particularly when measured through downloads per thousand reached (RPM). Across countries, gain-framed messages consistently generated the strongest conversion from exposure to action. Priming frames also performed well, while loss frames underperformed relative to the other approaches.

At the country level, these patterns become clearer. [Table 13](#) above presents performance by frame–theme combination within each country.

In the Netherlands, gain framing produced the highest activation rates, particularly for Sustainability–Gain and Health–Gain. Health–Loss was the weakest-performing condition, with both lower CTR and substantially lower RPM. Priming conditions produced moderate performance, suggesting that associative cues can stimulate engagement, but may depend on contextual alignment.

Denmark showed a similar but narrower pattern. Health–Gain performed best, closely followed by Health–Priming, indicating strong responsiveness to positive health-based messaging. Loss framing again performed comparatively weaker.

Spain introduced a relevant nuance. Sustainability–Priming generated the strongest behavioural activation, while Health–Loss achieved the highest CTR but did not convert proportionally into downloads. This distinction illustrates an important mechanism: negative framing can attract attention, but does not reliably translate attention into meaningful behavioural follow-through.

Taken together, the results suggest that gain framing is the most stable and cross-contextually robust strategy for encouraging early-stage behavioural activation, while priming can be effective when culturally aligned. Loss framing appears less reliable for motivating action in the context of AP communication.

To support cross-country comparison, [Table 14](#) summarises performance using RPM (downloads per thousand reached) across all conditions.

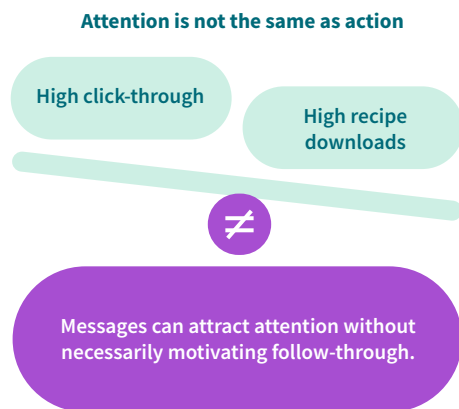
	THE NETHERLANDS	DENMARK	SPAIN	AVERAGE
Health - Gain	19.0	16.6	9.5	15.0
Health - Loss	6.5	10.2	9.8	8.83
Health - Priming	13.8	15.5	11.1	13.5
Sustainability - Gain	20.5	12.6	14.5	15.9
Sustainability - Loss	13.5	11.9	6.1	10.5
Sustainability - Priming	10.6	12.9	16.9	13.5

Table 14: Cross-country comparison – Downloads per thousand (RPM) with country winner highlighted

Theme effects: health versus sustainability

Differences between health and sustainability themes were context dependent rather than universal. In Denmark, health-oriented messages generated higher behavioural activation than sustainability-oriented ones. In contrast, sustainability-themed messages performed strongly in the Netherlands and Spain, particularly when paired with gain or priming framing.

This pattern suggests that while health is often assumed to be the most universally motivating entry point, sustainability can perform equally well when communicated through positive and relatable narratives. The findings reinforce the importance of adapting thematic emphasis to local motivations rather than assuming a single pan-European appeal structure.



Audience patterns and platform dynamics

Although the campaign used broad demographic targeting (18+ without gender or interest filters), Meta’s optimisation algorithm shifted delivery toward users most likely to engage. Engagement rates increased with age and were highest among older users, particularly women. Despite excluding the 65+ segment in the final week to reduce skew, older audiences remained overrepresented.

This pattern is behaviourally relevant. In digital environments, exposure is shaped not only by campaign design but also by platform optimisation.

As a result, “audience response” reflects an interaction between framing strategy and algorithmic delivery. For beyond choice interventions, this underscores that behavioural outcomes are partly conditioned by platform dynamics, which may amplify engagement among already receptive groups. All results presented in [Tables 12-14](#) reflect the full three-week campaign period; the 65+ segment was excluded in the final week to reduce skew, but delivery remained older-skewed overall.

Exchanges with campaign professionals (communication actors)

To complement the Meta-based behavioural experiment, twenty in-depth interviews were conducted with campaign professionals across eleven European countries, spanning NGOs, sustainability initiatives, communication agencies, corporate sustainability teams, and behaviour-change consultancies. The interviews provide context on how communication practitioners understand framing, resistance, behavioural activation, and evaluation in real-world campaign environments. While not statistically generalisable, the material shows strong thematic convergence around what enables, and constrains, effective beyond choice communication.

Platform algorithms influence who receives a message, meaning campaign outcomes reflect both message design and delivery dynamics.

What “beyond choice” means in communication practice

Across interviews, professionals implicitly framed “beyond choice” less as persuading consumers in a single moment and more as shaping the broader motivational landscape in which dietary decisions occur. Rather than trying to “convince” audiences to adopt APs directly, practitioners described communication as working up-

stream by reducing psychological resistance, normalising plant-forward eating, and making change feel easy, socially acceptable, and aligned with everyday motives. Food was repeatedly described as bound up with identity, tradition, and emotion, which positions communication less as information delivery and more as meaning-making and norm-shaping, closely matching the pilot's rationale.

Framing strategies in practice: preference for gain and feasibility

Across countries and sectors, gain-oriented framing was described as the dominant approach in practice. Campaign professionals consistently emphasised that messages anchored in benefits, taste, enjoyment, vitality, affordability, and shared well-being, are more effective and less polarising than those focused on risks or losses. Loss framing was used cautiously and often described as a trigger for defensiveness, polarisation, and message fatigue, particularly when audiences feel judged or pressured. Although not always labelled as such, many practitioners described priming-like tactics (attractive imagery, social cues, subtle association with positive identities) as useful for normalising plant-forward choices without provoking reactance. A repeated practical principle across interviews was feasibility: communication works best when it points to small, realistic steps and makes adoption feel low-effort.

Experiences with resistance and disengagement

Most interviewees reported encountering some degree of resistance in sustainability-related food communication. Resistance was commonly linked to messages perceived as moralising, politically charged, or implicitly demanding lifestyle change, as well as terminology that feels restrictive or ideological (e.g., for some audiences, “plant-based” or “alternative”). Several professionals noted that backlash can signal social relevance rather than campaign failure, but they also stressed that tone is critical: approaches that feel inclusive, voluntary, and positive were seen as more resilient and better able to keep mainstream audiences engaged. A core qualitative insight is that attention is not the same as behavioural follow-through—messages can attract engagement while simultaneously reducing willingness to act if they provoke defensiveness.

Messages that feel moralising may gain attention, but they can also reduce willingness to act.

Measuring behavioural change: challenges and proxies

Interviewees described substantial variation in how campaigns measure impact. NGOs and public-interest initiatives often rely on surveys, web analytics, and engagement metrics, while corporate actors more frequently use market indicators, sales signals, or broader brand and category metrics. Across contexts, a shared challenge was isolating campaign effects from wider societal trends and media narratives. Few campaigns can credibly measure sustained dietary change over time, so many use proxy indicators of activation and learning. Practitioners generally viewed evaluation as valuable for iteration even when causal attribution is limited, and several noted that collaboration with research institutions could improve credibility and comparability.

Cultural adaptation and pan-European strategy

A recurring theme was the importance of cultural tailoring. While practitioners often agreed on general “good practice” principles, positive framing, inclusive tone, practical guidance, and sensory appeal, they cautioned against one-size-fits-all European messaging. Health was frequently described as a relatively universal entry point, but many also emphasised that sustainability can motivate action when framed through hopeful, relatable narratives rather than abstract or blame-oriented appeals. The interviews therefore reinforce a key strategic implication: framing principles can be consistent across countries, but thematic emphasis and language choices should be adapted to local motivations, norms, and sensitivities.

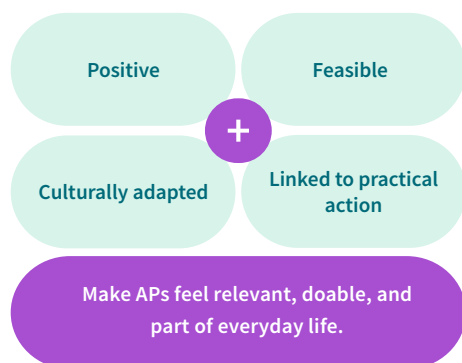
Implications for scaling beyond choice communication

Taken together, the interviews suggest that effective beyond choice communication depends on aligning four conditions. First, emotional resonance: messages should connect to enjoyment, identity, or shared values rather than abstract targets. Second, feasibility: communication should translate intent into small, realistic actions that feel manageable. Third, positive framing: gain-oriented narratives are seen as more robust across audiences and less likely to trigger reactance. Fourth, cultural fit and testing: practitioners emphasised iterative development, pre-testing, and localisation before scaling. Overall, the qualitative evidence indicates that beyond choice communication can meaningfully support early-stage behaviour change, by inviting curiosity, building trust, and normalising alternatives, but its effectiveness depends on tone, practicality, and contextual sensitivity.

Outlook

This pilot provides a real-world test of how beyond choice communication strategies influence early-stage behavioural activation toward APs across different European contexts. By combining large-scale digital behavioural data (37,781 individuals reached; 487 downloads) with qualitative insights from campaign professionals in eleven countries, the results offer insight into both what works empirically and what is considered viable in practice. Across data sources, a coherent pattern emerges: communication can meaningfully influence attention, curiosity, and first-step activation, but its effectiveness depends heavily on framing, feasibility, and cultural alignment.

Beyond choice communication works best when it is:



Beyond choice: activation through positive framing and feasibility

The Meta experiment shows that message framing shapes behavioural activation, even when exposure levels are broadly comparable. While click-through rates were stable across countries (~3.2–3.3%), conversion to recipe downloads varied systematically by frame. Across contexts, gain-framed messages consistently generated the strongest conversion from exposure to action, while loss-framed messages underperformed, particularly, in translating attention into meaningful follow-through. Priming also performed well in several settings, suggesting that associa-

tive, emotionally resonant cues can be effective when they align with local motivations and norms.

These quantitative patterns converge strongly with professional experience. Campaign professionals repeatedly emphasised that behaviour change communication is most effective when it is positive, inclusive, and practical, rather than moralising or fear-based. In behavioural terms, the mechanism is straightforward: benefit-focused framing helps preserve autonomy, reduces defensiveness, and lowers the psychological threshold for engagement, making the first step feel achievable rather than demanding.

Attention is not the same as sustained behaviour

At the same time, both the behavioural evidence and the interview material underline a key boundary condition: behavioural activation proxies do not equal sustained dietary change. Recipe downloads provide a credible signal of engagement and intent, but they cannot confirm cooking, repeat purchasing, or longer-term substitution. Campaign professionals echoed this constraint, noting that communication can raise awareness, shift perceived norms, and trigger exploration, but durable change typically requires reinforcement over time, practical enablement (recipes, skills, shopping routines), and supportive environments that make the behaviour easier to repeat.

In this sense, beyond choice interventions can open the door, but they are unlikely to carry change alone. Communication shapes the motivational and emotional conditions for trying alternatives; repeat uptake depends on whether people can integrate those alternatives into routines—often requiring complementary interventions in retail, catering, and product/value positioning.

Cultural tailoring and European scalability

Cross-country differences in performance indicate that while framing principles may generalise, thematic emphasis does not automatically transfer across contexts. Health-oriented positive framing performed particularly strongly in Denmark, while sustainability-oriented gain or priming approaches performed well in the Netherlands and Spain. This variation reinforces that EU-wide communication can benefit from a consistent behavioural logic, positive, feasible, non-moralising framing, while allowing thematic calibration to local motivations and cultural cues.

Campaign professionals strongly cautioned against one-size-fits-all messaging, emphasising the importance of testing tone, language, and references for local resonance. The practical implication is a two-layer approach: maintain coherence at the level of behavioural design principles, while enabling national or regional adaptation in theme, imagery, and cultural anchoring.

Platform dynamics as a behavioural constraint

For beyond choice interventions, this matters because “what works” is partly shaped by who actually receives the content. Scaling EU campaigns through commercial

platforms therefore requires active decisions about delivery constraints and evaluation design, otherwise messaging may disproportionately reach already receptive segments and under-serve harder-to-reach groups.

Implications for future EU communication strategies

The combined evidence from behavioural data and stakeholder exchanges points toward several strategic principles for future EU-level initiatives:

- Prioritise gain framing that highlights enjoyment, vitality, and shared benefits
- Use priming strategically to normalise plant-forward eating through positive associations
- Use loss framing sparingly, and only when paired with constructive pathways
- Translate abstract goals into small, achievable actions that lower perceived difficulty
- Embed communication within supportive environments, rather than treating messaging as a standalone solution
- Allow thematic flexibility across countries, while maintaining consistent framing logic.

Overall, the pilot demonstrates that beyond choice communication can be behaviourally influential at scale, but that its role is catalytic rather than self-sufficient. Communication can invite exploration and reshape perceived norms, yet long-term transformation requires integration with product innovation, retail design, and structural food-environment interventions.

Research limitations and conclusions

Overall, the pilot demonstrates that beyond choice communication can be behaviourally influential at scale, generating measurable activation across diverse European contexts. Across three countries, the campaign reached 37,781 individuals, produced 1,663 clicks, and resulted in 487 recipe downloads, indicating that communication framing can meaningfully influence early-stage engagement with APs. Differences in downloads per thousand reached further show that framing is not neutral: gain-oriented messages consistently produced stronger behavioural activation than loss-based appeals, while priming approaches performed well when culturally aligned.

At the same time, the findings highlight a central distinction of beyond choice interventions. Communication can increase salience, reduce psychological resistance, and encourage exploratory first steps, yet it does not automatically translate into sustained dietary change. In contrast to structural interventions at the point of purchase, beyond choice strategies operate upstream by shaping motivational

Communication can open the door to behaviour change, but repeated action depends on supportive food environments beyond the campaign.

readiness and perceived norms. Their effectiveness therefore depends not only on message design, but also on whether the broader environment enables repeated action.

Successful scaling thus requires integrating communication with supportive contexts. Interventions that combine positive, feasible framing with practical enablement, reinforcement over time, and alignment with product credibility and retail environments appear most promising. In this sense, the path forward is not to persuade through pressure, but to invite exploration through communication that feels enabling rather than moralising.

These conclusions should be interpreted in light of several methodological and contextual considerations.

- **First, short-term behavioural proxies.** The intervention ran for three weeks, and the primary outcome measures (click-through rates and recipe downloads) capture engagement and activation rather than confirmed cooking behaviour, repeat purchasing, or long-term substitution. While downloads represent a meaningful behavioural step beyond passive exposure, they remain indirect indicators of sustained dietary change.
- **Second, algorithmic delivery constraints.** Although broad demographic targeting (18+) was applied, Meta's optimisation algorithm dynamically shaped ad distribution, prioritising users most likely to engage. This resulted in an overrepresentation of older and more responsive audiences. Exposure was therefore influenced by platform optimisation rather than strict random allocation, limiting experimental control.
- **Third, platform-level structural limitations.** The Meta environment is designed to maximise advertising performance rather than research precision. Full randomisation was not possible because ad versions were delivered via separate audience segments rather than within the same group. Delivery was influenced by commercial optimisation processes, and limited transparency over budget allocation and delivery decisions constrained experimental control. The design should therefore be interpreted as quasi-experimental.
- **Fourth, reliance on digital engagement metrics.** Secondary interaction measures (likes, comments, shares) were limited in volume and not suitable for systematic sentiment analysis (please see Table 30, Table 31, Table 32 in the appendices section), and visible interactions were removed to maintain neutrality. The analysis therefore relied primarily on CTR and downloads as more robust behavioural indicators, while acknowledging that these remain proxy measures.
- **Fifth, practitioner sample scope.** The qualitative interviews reflect the perspectives of twenty campaign professionals across eleven countries who are already active in sustainability communication. While thematic convergence was strong, the findings represent expert insights rather than general population views.

Taken together, these considerations suggest that the results should be viewed as indicative rather than definitive. The pilot does not claim to demonstrate long-term dietary transformation, nor to isolate communication effects from wider societal influences.

Nonetheless, the convergence between behavioural data and practitioner experience provides a robust basis for assessing feasibility and strategic direction. Across contexts, both datasets point to the same pattern: positive, benefit-oriented, and culturally sensitive communication is more likely to convert attention into action than fear-based or moralising appeals.

Overall, the pilot indicates that beyond choice communication can play a meaningful catalytic role in supporting dietary transition by lowering psychological barriers and increasing early-stage engagement at scale. However, durable change is most likely when communication is embedded within broader structural interventions that support repetition, trust, and everyday usability.

4. What does this all mean for the future?



Taken together, the four LIKE-A-PRO behavioural pilots provide consistent and complementary insights into how AP uptake can be supported across different food environments. While each pilot targeted a different context, institutional catering (choice editing), retail (choice expansion), gastronomy (choice environment), and digital communication (beyond choice), the findings converge on a shared conclusion: Behaviour changes most reliably when the food environment reduces friction, preserves autonomy, and presents AP options as attractive, normal, and easy to integrate into routine decisions.

At the same time, the pilots highlight a critical boundary condition: trial is not the same as sustained change. Structural and communicative interventions can activate short-term uptake and first-time engagement, but longer-term integration depends on repeat purchase, trust in product quality, economic feasibility for providers, and alignment with habitual routines.

Across contexts, the most robust levers were linked to:

- Opportunity (availability, salience, parity placement, integrated menus)
- Motivation (sensory appeal, gain framing, non-moralising positioning), while
- Capability was most effective when embedded directly in the environment (e.g., tastings, staff interaction), rather than requiring additional effort.

Opportunity mattered because it directly changed what was available and salient at the point of choice (e.g., reduced meat availability in catering; high-salience placement and discounts in retail; integrated menu placement in restaurants). Motivation mattered when APs were presented in appetitive, non-moralising ways: the pilots repeatedly point to the value of sensory and emotionally engaging framing (menus) and gain framing (digital communication) over loss-based or label-heavy messaging.

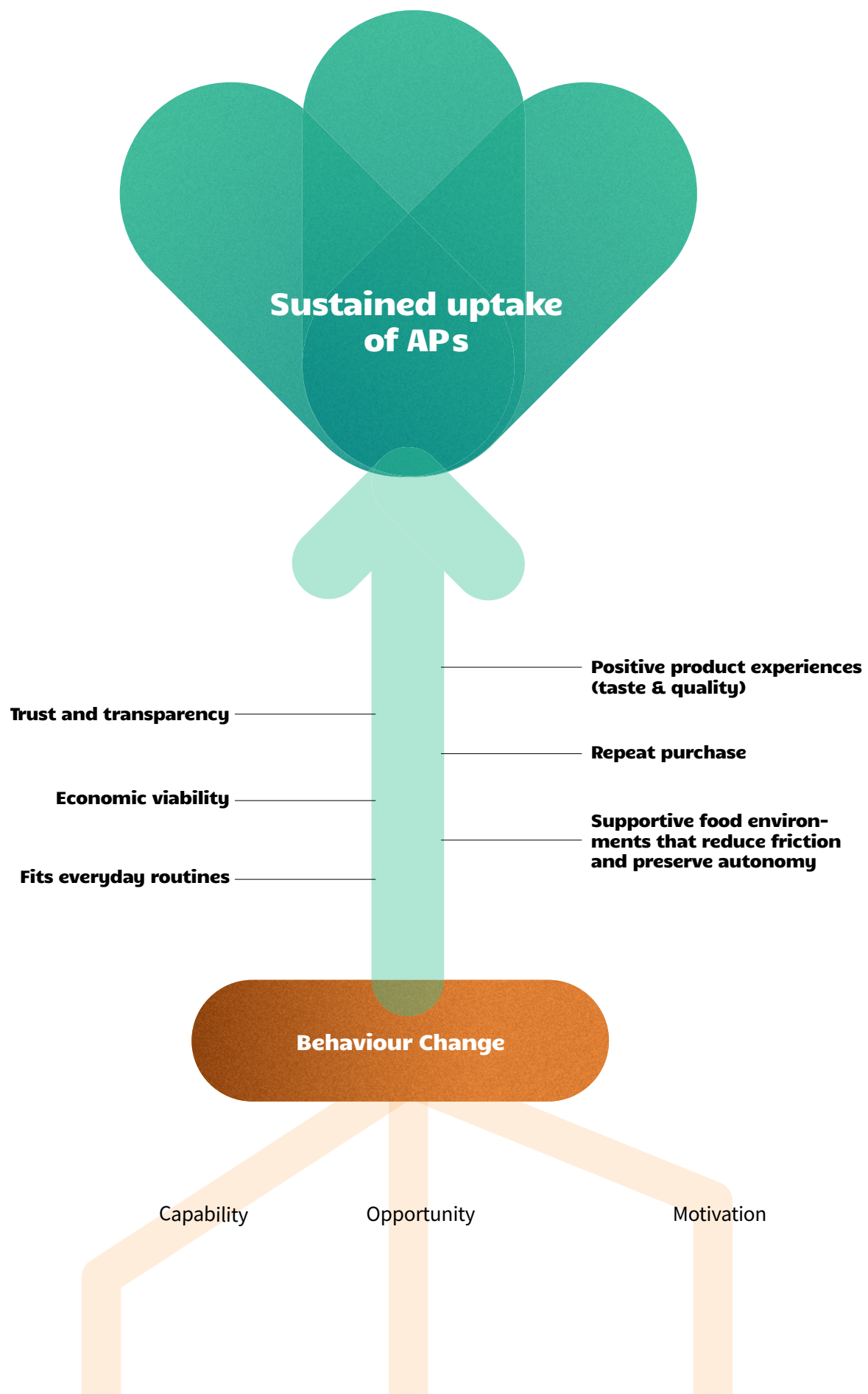
Capability played a role, but it worked best when delivered in the moment (e.g., tastings, staff interaction, simple interpretive cues). Supports that required extra effort (e.g., QR recipes) were less consistently noticed or used, suggesting capability-building is most effective when it is embedded directly into the choice environment.



A boundary condition: trial is not sustained change

A key cross-pilot insight is that trial ≠ sustained uptake. Choice architecture and framing can increase first-time engagement, but long-term integration depends on repeat purchase/repeat ordering, which is shaped by habitual routines, trust and ingredient perceptions, and the economic realities of food providers (turnover, waste risk, and menu/shelf competition).

Summary of findings through the COM-B lens



Pilot 1: Choice editing

Capability

Opportunity

Motivation

Enablers

- **Decision simplification:** fewer competing meat choices reduced decision friction at lunch.
- **Familiarity-building:** repeated exposure to plant-forward dishes within routine meals may reduce “unknown” barrier (short-term).
- **Operational capability:** catering staff could deliver the revised menu without added technical burden.
- **Physical opportunity shift:** stepwise reduction of meat options increased relative availability of plant-forward meals at the point of choice.
- **Low-friction access:** plant-forward meals became the “easy available” option during routine purchase moments.
- **Institutional setting:** centralised service environment enabled consistent implementation.
- **Automatic adaptation:** many diners adjusted behaviour without needing intention change.
- **Reflective acceptance conditionally** improved when change felt gradual and explainable.

Barriers

- **Taste/quality expectations remained** limiting for some (capability to “know what I’ll like” not fully solved).
- **Weak preference formation:** attitudes/intentions shifted minimally in short timeframe.
- **Displacement route remained available:** some consumers ate elsewhere when preferred meat options reduced.
- **Perceived restriction** functioned as a “social opportunity” barrier (complaints/negative talk can amplify).
- **Reactance signal:** a substantial minority felt restricted, triggering avoidance.
- **Habit persistence:** broader diet frequency largely unchanged beyond the canteen context.

Pilot 2: Choice expansion

Capability

Opportunity

Motivation

Enablers

- **Reduced uncertainty via tasting:** immediate sensory information lowered “will I like it?” barrier (where tastings ran).
- **Practical know-how support (potential):** recipe/quick-use prompts can build capability when noticed (though limited uptake).
- **Physical opportunity increase:** end-of-aisle campaign coolers boosted discoverability at the protein decision point.
- **Parity exposure:** side-by-side placement near conventional proteins enabled comparison without forcing it.
- **Financial opportunity:** discounts reduced perceived trial risk.
- **Social opportunity at demo stand:** Q&A and social interaction supported trial confidence
- **Automatic trial trigger:** salience + discount prompted impulse/low-effort trial.
- **Reflective reassurance:** tastings converted curiosity into purchase by reducing risk perceptions.
- **“Value plausibility”:** discount improved perceived fairness/value.

Barriers

- **Decision-support underuse:** QR recipe sticker and some informational tools were low-noticed/low-used (capability supports not reaching many).
- **Clarity risk:** naming (e.g., “burger”) can create interpretability issues if not unmistakably AP.
- **Retail commercial constraints:** shelf space, turnover, shrink/waste are binding (opportunity depends on business case).
- **Placement trade-offs:** integration can create navigation frictions (vegetarians avoiding meat aisle; meat eaters irritation/confusion).
- **Trust/ultra-processing concerns** suppress repeat purchase and category credibility.
- **Trial ≠ repeat:** satisfaction/value must be strong enough for routine repurchase; otherwise demand decays

Pilot 3: Choice environment

Capability

Opportunity

Motivation

Enablers

- **High product acceptance among triers:** taste/presentation/overall experience strong, reducing capability barrier after first trial.
- **Lower interpretation effort:** vegan/vegetarian logos helped diners quickly understand dish type (where noticed).
- **Physical opportunity via menu architecture:** integrated placement increased encounters as a “mainstream” option.
- **Category spillover:** adding an AP dish increased attention to vegetarian category overall (possible halo).
- **Social opportunity (Spain):** staff recommendations/storytelling created a trust bridge and legitimacy cue.
- **Motivational alignment:** strong preference for sensory/emotional descriptions supports appetitive motivation.
- **Normalisation effect:** integrated placement supports “this is a normal choice here.”
- **perceived fairness/value.**

Barriers

- **Salience/attention gap:** a large share of Belgian respondents did not notice/recall descriptions, weakening the intended framing effect.
- **Limited segmentation:** low neophobia overall limited differentiation by neophobia; other drivers still matter (price/naturalness, etc.).
- **Context dependence of social cues:** in some service formats, verbal recommendation is less feasible.
- **Label stigma risk:** explicit “vegan/alternative” signalling can deter some mainstream diners (staff insight).
- **Habitual ordering dominates:** many diners default to “usual choice,” limiting conversion from consideration to trial.
- **Visibility ≠ persuasion:** logos/legends increase noticing but may not create desire on their own.

Pilot 4: Beyond choice

Capability

Opportunity

Motivation

Enablers

- **Low-effort comprehension:** short, clear, benefit-oriented messaging supports easy processing (capability for “what do I do next?”).
- **Action pathway:** recipe download provides concrete “how-to” step (planning readiness proxy).
- **Scale opportunity:** broad reach under naturalistic platform delivery.
- **Feasibility:** campaign deployment is relatively fast and replicable across contexts.
- **Professional practice alignment:** practitioners already favour positive/feasible framing.
- **Gain framing reliably supported follow-through** (downloads per reach).
- **Priming can work when culturally aligned** (association-based motivation).
- **Loss framing may capture attention but less reliably drives action.**

Barriers

- **Proxy limitation: downloads** do not confirm cooking/purchasing; capability to execute behaviour remains unmeasured.
- **Terminology comprehension risk:** jargon (“alternative protein”) can reduce clarity for some audiences.
- **Algorithmic delivery skew:** platform optimisation can over-serve receptive groups and under-serve harder-to-reach segments.
- **Limited control:** live ad platform reduces experimental precision.
- **Moralising/pressure triggers defensiveness** (barrier to motivation).
- **Identity/label resistance:** “plant-based/vegan/alternative” language can cue avoidance for some groups.

Table 15 clusters the main findings from all four pilots using the COM-B framework, distinguishing enabling and inhibiting factors and indicating what was activated in practice.

Scaling requires alignment across actors

The pilots also underline that different stakeholders can leverage different COM-B levers (Table 16), so scaling depends on alignment. Retailers shape physical opportunity and commercial viability; food service operators shape menu architecture and social normalisation; manufacturers determine whether trial converts into repeat behaviour through taste, value, and trust; communication actors shape motivation at scale (especially when messages are positive and timed with real availability); policy and procurement can create system alignment and risk-sharing; and academia/educators strengthen capability and legitimacy over the longer term by training professionals and translating evidence into practice. Overall, the pilots point to a realistic pathway where environment design triggers trial, product and operational conditions secure repeatability, and communication and policy reduce resistance and risk, together making AP choices easier to start and easier to sustain.

Retailers and category managers

Primary lever:

Physical opportunity + commercial viability

Why they matter

Retailers determine what is visible, where it is placed, and at what price. The retail pilot shows that salience and price incentives can sharply increase trial, but sustained expansion depends on turnover and waste management.

How this could look in practice

- Adopt parity placement strategies: Position selected AP products in high-traffic protein zones (e.g., near conventional meat) rather than isolating them
- Bundle expansion with low-risk trial: Combine price promotions with tasting events during campaign weeks to reduce both financial and sensory uncertainty
- Monitor repeat signals: Track repeat purchase rates before expanding shelf space permanently
- Improve clarity without stigma: Use clear labelling that prevents confusion while avoiding niche positioning
- Reduce operational risk: Collaborate with suppliers on smaller batch sizes and flexible replenishment cycles.

Food service operators (restaurants, institutional caterers)

Primary lever:

Menu architecture + social normalisation

Why they matter

Canteens and restaurants influence routine meal decisions. The pilots show that menu structure (integrated vs segregated) and staff interaction significantly shape exposure and legitimacy.

How this could look in practice

- Integrate rather than isolate: Embed AP dishes within mainstream menus when the aim is normalisation
- Lead with sensory appeal: Describe dishes through flavour, texture, and experience rather than dietary labels
- Train staff for light-touch recommendation: Short, confident storytelling improves legitimacy where service style allows
- Implement gradual editing in institutional contexts: Phase reductions in meat availability to minimise reactance
- Align portioning and procurement: Adjust supply formats to manage waste risk when demand fluctuates

Manufacturers and product developers

Primary lever:

Product quality + trust formation

Why they matter

Repeat purchase, the core barrier across pilots, depends on taste, value perception, and trust in ingredients.

How this could look in practice

- Prioritise taste parity and texture quality: Satisfaction among triers was high in restaurant contexts — this must translate to retail formats
- Address ultra-processing concerns: Simplify ingredient lists where possible and improve transparency
- Support operators with flexible packaging: Smaller units reduce waste risk in food service and retail
- Develop distinct culinary identity: Position AP products as desirable dishes in their own right, not merely substitutes

Communication actors and public campaigns

Primary lever:

Motivation + cultural framing

Why they matter

Digital and campaign-based interventions can shape perceptions at scale and prime readiness for trial.

How this could look in practice

- Use gain framing consistently: Emphasise benefits (taste, enjoyment, ease) rather than loss or moral obligation
- Link communication to environments: Ensure campaigns coincide with retail or food service visibility windows
- Avoid moralising tone: Frame APs as attractive options rather than corrective behaviour
- Segment culturally: Adapt themes (health vs sustainability) to local motivational profiles

Policy-makers and public procurement bodies

Primary lever:

Structural opportunity + system alignment

Why they matter

They influence institutional food provision, incentives, and long-term norms.

How this could look in practice

- Encourage phased choice editing in public catering
- Provide risk-sharing instruments (e.g., waste-reduction guarantees) to reduce retailer hesitation
- Support training and knowledge exchange platforms across sectors
- Align sustainability criteria with taste and satisfaction metrics, not solely emissions targets

Academia and educators	
Primary lever: Capability + knowledge legitimisation + long-term norm formation Why they matter They shape skills, evidence, and legitimacy for AP uptake over the long term—by training future professionals (chefs, food-service managers, retailers, communicators, policy analysts), producing the research base that guides what “works,” and influencing which food practices become normal, credible, and teachable across Europe.	How this could look in practice • Integrate behavioural food-environment design (menu architecture, framing, salience, defaults, social proof) into hospitality, nutrition, marketing, and business curricula • Build culinary and sensory training around taste-first AP cooking, recipe development, and “clean label” considerations that address ultra-processing concerns • Establish university-based living labs with restaurants/canteens/retail partners to test interventions and track behaviour + feasibility + waste risk together • Produce practitioner-facing toolkits and short courses translating pilot insights into applied templates (menu copy, layout rules, retail placement playbooks, campaign framing guides) • Run interdisciplinary research programmes linking behavioural science, food technology, sustainability, and economics to identify repeat purchase / repeat ordering drivers • Create open case repositories and teaching materials (including null results and boundary conditions) to accelerate diffusion and avoid repeating mistakes

Table 16: Which actors can act on these insights and how

5. What's next and how to engage with us?





The insights gained from the behavioural intervention pilots will be combined with findings from the LIKE-A-PRO Living Labs. Together, they will feed into the development of key governance mechanisms aimed at supporting the transition toward healthier and more sustainable food systems, with APs as a central lever. These mechanisms will be structured around the CCF and include:

- Modalities for policy action to limit unsustainable and unhealthy food products, as well as promote sustainable public procurement processes;
- Guidelines for marketing AP products in food environments, including considerations related to choice architecture;
- A proposed labelling format informed by consumer preferences and behaviour;
- Recommendations for communication campaigns, highlighting the most effective messaging frames, language, and consumer-driven narratives;
- A framework for integrating sustainability and health principles into school schemes and curricula, positioning APs as enablers of change.



We believe that collaboration and partnership are essential for developing holistic and systemic solutions, and for increasing the chances of outcomes that deliver win–wins across stakeholder groups. If the pilots, expected learnings, or solutions resonate with your work, we warmly invite you to get in touch and explore ways to collaborate.

6. Appendices

Choice editing

Consent

Q0 Consent (CONS)

Text for the consent form.

- ☐ 1 = Yes, I agree to participate
- ☐ 0 = No – take me out of here

AFP Background

Q1 Awareness (AWR_AFP)

In this survey, we will ask you questions in relation to **Alternative Food Proteins**.

Have you heard the term “**Alternative Food Proteins**” before today?

- ☐ 1. No ☐ 2. Yes

TEXT1

Please read the following definition about **Alternative Food Proteins** carefully:

“**Alternative Food Proteins** are protein sources that are not derived from conventional animal livestock like beef, pork, poultry, or fish. They include a wide range of options such as plant-based ingredients, fungi, algae, insects, and cultured meat grown from animal cells. These proteins are often developed to provide sustainable alternatives to conventional animal products, aiming to reduce environmental impact and improve food security.”

Note: Add timer [5 seconds before allowing to proceed]

Q2 Attitude Toward AFPs (ATT_AFP)

Adapted from [49, 50]

Based on your understanding of alternative food proteins, how much do you think these are

Unhealthy	☐	☐	☐	☐	☐	Healthy
Not tasty	☐	☐	☐	☐	☐	Tasty
Unappealing	☐	☐	☐	☐	☐	Appealing
Unsustainable	☐	☐	☐	☐	☐	Sustainable
Bad for the environment	☐	☐	☐	☐	☐	Good for the environment
Low quality	☐	☐	☐	☐	☐	High quality
Unnatural	☐	☐	☐	☐	☐	Natural
Unpleasant	☐	☐	☐	☐	☐	Pleasant

Range: 5-point bipolar

Q3 Food Frequency (FF)

Adapted from FFQ and [51]

Please indicate how often did you eat each of the following food items during the past month.

	1 Never / <1×mo	2 1–3× month	3 Once a week	4 2–4× week	5 5–6× week	6 Once a day	7 >1× day
Beef	☐	☐	☐	☐	☐	☐	☐
Pork	☐	☐	☐	☐	☐	☐	☐
Chicken	☐	☐	☐	☐	☐	☐	☐
Fish/seafood	☐	☐	☐	☐	☐	☐	☐
Processed meats (sausages, cold cuts, etc.)	☐	☐	☐	☐	☐	☐	☐
Plant-based meat alternatives	☐	☐	☐	☐	☐	☐	☐
Legumes (beans, lentils, chickpeas)	☐	☐	☐	☐	☐	☐	☐
Tofu/tempeh	☐	☐	☐	☐	☐	☐	☐
Eggs	☐	☐	☐	☐	☐	☐	☐
Dairy alternatives	☐	☐	☐	☐	☐	☐	☐

Range: 1 = Never or less than once per month · 2 = 1–3 times per month · 3 = Once per week · 4 = 2–4 times per week · 5 = 5–6 times per week · 6 = Once per day · 7 = More than once per day

Q4 Diet (DIET)

How would you describe your usual diet?

- ☐ 1. Omnivorous (someone who eats a variety of food of both plant and animal origin)
- ☐ 2. Flexitarian (someone who primarily eats a plant-based diet but occasionally includes meat and other animal products)
- ☐ 3. Pescatarian
- ☐ 4. Vegetarian
- ☐ 5. Vegan

Note: **IF Q4 = 4/5** then **SKIP** Sections: “Meat Intentions and Behaviour”, “Past Behaviour (Meat)” and question “CN_MEAT” (i.e., Q5, Q6, Q9). **IF Q4 = 3** then **SKIP** Q5, Q6.

Meat Intentions and Behaviour

Q5 Behavioural Intention (BI)

Adapted from [52–54]

How willing are you to do the each of the following in the next month?

	1 Not willing at all	2	3	4	5 Definitely will
Reduce the amount of meat I consume	☐	☐	☐	☐	☐
Replace meat with alternative protein sources (e.g., plant-based or other meat substitutes)	☐	☐	☐	☐	☐
Consume plant-based products more frequently	☐	☐	☐	☐	☐

Range: 5-point Likert (1 = Not willing at all, 5 = Definitely will)

Past Behaviour (Meat)

Q6 Intention to Reduce Meat Last Year (RM_MT)

Have you reduced your meat consumption in the past year?

- ☐ 1. No
- ☐ 2. Yes

Q7 Main reason (RM_RS)

If yes, what is the main reason?

- ☐ 1. Health
- ☐ 2. Environment
- ☐ 3. Animal welfare
- ☐ 4. Cost
- ☐ 5. Other (allow text entry)

Note: Display **IF Q6=2**

Past Behaviour (Canteen)

Q8 Eating at Canteen (CN_EAT)

During a normal week, how often do you eat at the university canteen?

- ☐ 1. Never ☐ 2. 1-2 times a week ☐ 3. 3-4 times a week ☐ 4. Every day

Q9 Eating Meat (CN_MEAT)

When eating at the canteen, how often do you choose meat-based dishes (including poultry and fish)?

- ☐ 1. Never
☐ 2. Occasionally (about 1 out of 4 visits)
☐ 3. About half of the time
☐ 4. Most of the time (about 3 out of 4 visits)
☐ 5. Always or almost always

General Response to Interventions on AFP

Q10 Interventions (INTERV)

Source: Authors

Below are several initiatives that could be used to promote plant-based food choices in different food environments. Please indicate how much you support or oppose each initiative.

	1 Strongly oppose	2	3	4	5 Strongly support
Increasing the number of plant-based dishes offered	☐	☐	☐	☐	☐
Making plant-based meals the <i>default</i> option (meat available on request)	☐	☐	☐	☐	☐
Providing information about the environmental impact of each dish	☐	☐	☐	☐	☐
Placing plant-based products next to meat products	☐	☐	☐	☐	☐
Offering price discounts on plant-based products	☐	☐	☐	☐	☐
Using “green choice” labels or icons to indicate sustainable options	☐	☐	☐	☐	☐
Adding more plant-based dishes to menus	☐	☐	☐	☐	☐
Highlighting plant-based dishes as “chef’s specials” or “recommended”	☐	☐	☐	☐	☐
Providing information about taste and protein content of plant-based dishes	☐	☐	☐	☐	☐

Range: 1 = Strongly oppose, 5 = Strongly support

Q11 Acceptance of interventions (ACC_INT)

Source: Authors

Overall, how acceptable do you find initiatives that promote plant-based food choices in public and commercial food settings?

1 2 3 4 5

○ ○ ○ ○ ○

Not acceptable at all Very acceptable

Range: 1 = Not acceptable at all, 5 = Very acceptable

Q12 Effectiveness of interventions (EFF_INT)

In your opinion, how effective are such interventions likely to be in encouraging people to reduce their meat consumption?

1 2 3 4 5

○ ○ ○ ○ ○

Not effective at all Very effective

Range: 1 = Not effective at all, 5 = Very effective

Socio-Demographic Background

Q13 Gender (GEN)

Please state your gender:

- ☐ 1. Female ☐ 2. Male ☐ 3. Non-binary ☐ 4. Prefer not to say

Q14 Age (AGE)

Please state your age (enter number with no spaces):

[Open ended]

Q15 Education (EDU)

What is the highest level of education you have completed?

- ☐ 1. Primary education or less
- ☐ 2. Secondary education
- ☐ 3. Post-secondary, non-tertiary education
- ☐ 4. Undergraduate degree
- ☐ 5. Postgraduate degree

Table 17: Baseline Questionnaire (Pre-Intervention) for choice editing

Consent

Q0 Consent (CONS)

Text for the consent form.

- ☐ 1 = Yes, I agree to participate
- ☐ 0 = No – take me out of here

Intervention Intro

INTRO

“This week, Dipnosofistirion is taking part in a campaign aimed at offering more plant-based food options. These dishes feature a variety of alternative protein sources, such as legumes and other meat substitutes.

Throughout the week, you will notice that more plant-based options are available each day, giving you the opportunity to try different meals and explore new protein sources.

We are interested in learning about your choices and experiences during this week, so your feedback is valuable.”

WEEK1 / WEEK2

Participation in Week1 and Week2

Source: Authors

Did you participate in the previous survey during the October campaign at Dipnosofistirion?

Week1 ☐ Yes ☐ No

Week2 ☐ Yes ☐ No

Q1 Eating at the Canteen (CANT_EAT)

During this week, did you eat at the canteen?

- ☐ 1. No ☐ 2. Yes

Q2 Choice of PB (CANT_PB)

If yes, did you choose any of the plant-based meal options that were available?

- ☐ 1. No ☐ 2. Yes

Note: Display IF Q1=2

Q3 Evaluation of Intervention (CANT_OFF)

How would you rate the idea of Dipnosofistirion offering more plant-based meals?

1	2	3	4	5
☐	☐	☐	☐	☐
Very negative	Negative	Neutral	Positive	Very positive

Message Evaluation

TEXT

The campaign is introduced with information displayed in roll-ups (see below) and various communication materials.



Q4 Notice (NOTICE)

Did you notice these roll-ups?

- ☐ 1. No ☐ 2. Yes

Q5 State Reactance (FT; CA)

[55], who adapted from [56]

We would like to ask you a few questions in relation to the message of the roll-ups. To remind you the message reads:

“Delicious, satisfying plant-based meals. Better for you, better for the environment – Discover the taste!”.

Please respond to the following statements.

Freedom Threat (FT) [55]

	1 Strongly disagree	2	3	4	5 Strongly agree
The message threatened my freedom to choose.	☐	☐	☐	☐	☐
The message tried to make a decision for me.	☐	☐	☐	☐	☐
The message tried to manipulate me.	☐	☐	☐	☐	☐
The message tried to pressure me.	☐	☐	☐	☐	☐

Counterarguing (CA) [55]

	1 Strongly disagree	2	3	4	5 Strongly agree
The thoughts I had about the message were negative.	☐	☐	☐	☐	☐
While reading the message, I was criticizing it.	☐	☐	☐	☐	☐
While reading the message on the poster, I was thinking of points that went against the arguments it made.	☐	☐	☐	☐	☐
While reading the message on the poster, I was feeling sceptical about the arguments it made.	☐	☐	☐	☐	☐

Range: 1 = "strongly disagree" to 5 = "strongly agree"

Q6 Anger (ANG)

[57]

Please respond to the following statements.

	1 Strongly disagree	2	3	4	5 Strongly agree
The message made me mad	☐	☐	☐	☐	☐
The message made me angry	☐	☐	☐	☐	☐
The message irritated me	☐	☐	☐	☐	☐
The message made me annoyed	☐	☐	☐	☐	☐

Range: 1 = "strongly disagree" to 5 = "strongly agree"

Q7 Negative Cognitions (NC)

[57, 58]

Please respond to the following statements.

	1 Strongly disagree	2	3	4	5 Strongly agree
I agree with the message	☐	☐	☐	☐	☐
I have positive thoughts toward the message	☐	☐	☐	☐	☐
I intend to comply with the message	☐	☐	☐	☐	☐

Range: 1 = "strongly disagree" to 5 = "strongly agree"

Q8 Perceived Effectiveness of Persuasive Message (PMSG)

Adapted from [59], who based it on [60]

The message is...

not persuasive	☐	☐	☐	☐	☐	persuasive
not effective	☐	☐	☐	☐	☐	effective
not convincing	☐	☐	☐	☐	☐	convincing
not compelling	☐	☐	☐	☐	☐	compelling

Range: 5-point bipolar

AFP Background

B1 Awareness (AWR_AFP)

Have you heard the term "Alternative Food Proteins" before today?

- ☐ 1. No ☐ 2. Yes

TEXT1

Please read the following definition about Alternative Food Proteins carefully:

"**Alternative Food Proteins** are protein sources that are not derived from conventional animal livestock like beef, pork, poultry, or fish. They include a wide range of options such as plant-based ingredients, fungi, algae, insects, and cultured meat grown from animal cells. These proteins are often developed to provide sustainable alternatives to conventional animal products, aiming to reduce environmental impact and improve food security."

Note: Add timer [5 seconds before allowing to proceed]

B2 Attitude Toward AFPs (ATT_AFP)

Adapted from [49, 50]

Based on your understanding of alternative food proteins, how much do you think these are

Unhealthy	☐	☐	☐	☐	☐	Healthy
Not tasty	☐	☐	☐	☐	☐	Tasty
Unappealing	☐	☐	☐	☐	☐	Appealing
Unsustainable	☐	☐	☐	☐	☐	Sustainable
Bad for the environment	☐	☐	☐	☐	☐	Good for the environment
Low quality	☐	☐	☐	☐	☐	High quality
Unnatural	☐	☐	☐	☐	☐	Natural
Unpleasant	☐	☐	☐	☐	☐	Pleasant

Range: 5-point bipolar

B3 Food Frequency (FF)

Adapted from FFQ and [51]

Please indicate how often did you eat each of the following food items during the past month.

	1 Never / <1×mo	2 1–3× month	3 Once a week	4 2–4× week	5 5–6× week	6 Once a day	7 >1× day
Beef	☐	☐	☐	☐	☐	☐	☐
Pork	☐	☐	☐	☐	☐	☐	☐
Chicken	☐	☐	☐	☐	☐	☐	☐
Fish/seafood	☐	☐	☐	☐	☐	☐	☐
Processed meats (sausages, cold cuts, etc.)	☐	☐	☐	☐	☐	☐	☐
Plant-based meat alternatives	☐	☐	☐	☐	☐	☐	☐
Legumes (beans, lentils, chickpeas)	☐	☐	☐	☐	☐	☐	☐
Tofu/tempeh	☐	☐	☐	☐	☐	☐	☐
Eggs	☐	☐	☐	☐	☐	☐	☐
Dairy alternatives	☐	☐	☐	☐	☐	☐	☐

Range: 1 = Never or less than once per month · 2 = 1–3 times per month · 3 = Once per week · 4 = 2–4 times per week · 5 = 5–6 times per week · 6 = Once per day · 7 = More than once per day

B4 Diet (DIET)

How would you describe your usual diet?

- ☐ 1. Omnivorous (someone who eats a variety of food of both plant and animal origin)
- ☐ 2. Flexitarian (someone who primarily eats a plant-based diet but occasionally includes meat and other animal products)
- ☐ 3. Pescatarian
- ☐ 4. Vegetarian
- ☐ 5. Vegan

Note: **IF B4 = 4/5** then **SKIP** Sections: "Meat Intentions and Behaviour", "Past Behaviour (Meat)" and question "CN_MEAT" (i.e., B5, B6, B9). **IF B4 = 3** then **SKIP** B5, B6.

Meat Intentions and Behaviour

B5 Behavioural Intention (BI)

Adapted from [52–54]

How willing are you to do the each of the following in the next month?

	1 Not willing at all	2	3	4	5 Definitely will
Reduce the amount of meat I consume	☐	☐	☐	☐	☐
Replace meat with alternative protein sources (e.g., plant-based or other meat substitutes)	☐	☐	☐	☐	☐
Consume plant-based products more frequently	☐	☐	☐	☐	☐

Range: 5-point Likert (1 = Not willing at all, 5 = Definitely will)

Past Behaviour (Meat)

B6 Intention to Reduce Meat Last Year (RM_MT)

Have you reduced your meat consumption in the past year?

- ☐ 1. No
- ☐ 2. Yes

B7 Main reason (RM_RS)

If yes, what is the main reason?

- ☐ 1. Health
- ☐ 2. Environment
- ☐ 3. Animal welfare
- ☐ 4. Cost
- ☐ 5. Other

Note: Display IF B6=2

Past Behaviour (Canteen)

B8 Eating at Canteen (CN_EAT)

During a normal week, how often do you eat at the university canteen?

- ☐ 1. Never ☐ 2. 1-2 times a week ☐ 3. 3-4 times a week ☐ 4. Every day

B9 Eating Meat (CN_MEAT)

When eating at the canteen, how often do you choose meat-based dishes (including poultry and fish)?

- ☐ 1. Never
☐ 2. Occasionally (about 1 out of 4 visits)
☐ 3. About half of the time
☐ 4. Most of the time (about 3 out of 4 visits)
☐ 5. Always or almost always

General Response to Interventions on AFP

B10 Interventions (INTERV)

Source: Authors

Below are several initiatives that could be used to promote plant-based food choices in different food environments. Please indicate how much you support or oppose each initiative.

	1 Strongly oppose	2	3	4	5 Strongly support
Increasing the number of plant-based dishes offered	☐	☐	☐	☐	☐
Making plant-based meals the <i>default</i> option (meat available on request)	☐	☐	☐	☐	☐
Providing information about the environmental impact of each dish	☐	☐	☐	☐	☐
Placing plant-based products next to meat products	☐	☐	☐	☐	☐
Offering price discounts on plant-based products	☐	☐	☐	☐	☐
Using “green choice” labels or icons to indicate sustainable options	☐	☐	☐	☐	☐
Adding more plant-based dishes to menus	☐	☐	☐	☐	☐
Highlighting plant-based dishes as “chef’s specials” or “recommended”	☐	☐	☐	☐	☐
Providing information about taste and protein content of plant-based dishes	☐	☐	☐	☐	☐

Range: 1 = Strongly oppose, 5 = Strongly support

B11 Acceptance of interventions (ACC_INT)

Source: Authors

Overall, how acceptable do you find initiatives that promote plant-based food choices in public and commercial food settings?

1	2	3	4	5
☐	☐	☐	☐	☐
Not acceptable at all		Very acceptable		

Range: 1 = Not acceptable at all, 5 = Very acceptable

B12 Effectiveness of interventions (EFF_INT)

Source: Authors

In your opinion, how effective are such interventions in encouraging people to reduce their meat consumption?

1	2	3	4	5
☐	☐	☐	☐	☐
Not effective at all		Very effective		

Range: 1 = Not effective at all, 5 = Very effective

Additional Questions on Intervention Effectiveness (Week 2)

N1 Intervention backfire (BF_INT)

Source: Authors

During this week, did you choose to eat elsewhere due to the campaign?

☐ 1 = No ☐ 2 = Yes

N2 Perception of freedom of choice limitation (FR_INT)

Source: Authors

To what extent did you feel that your food choices were limited during these weeks that the campaign took place?

☐ 1 = Not at all ☐ 2 = Slightly ☐ 3 = Moderately ☐ 4 = Very much

N3 Attitude towards intervention (ATT_INT)

Source: Authors

To what extent would you support a more permanent increase in AP options at Dipnosofistirion?

☐ 1 = Strongly support

☐ 2 = Support

☐ 3 = Neutral

☐ 4 = Oppose

☐ 5 = Strongly oppose

N4

Intervention impact assessment (IMP_INT)

Source: Authors

How much do you agree with the following statements? Initiatives promoting alternative food proteins can...

	1 Strongly disagree	2	3	4	5 Strongly agree
help reduce the environmental footprint of the food system.	☐	☐	☐	☐	☐
support healthier eating patterns.	☐	☐	☐	☐	☐
increase public acceptance of sustainable food choices.	☐	☐	☐	☐	☐
stimulate economic growth and innovation in the food sector.	☐	☐	☐	☐	☐

Range: 1 = "strongly disagree" to 5 = "strongly agree"

N5

Factors to increase effectiveness (IEFF_INT)

Source: Authors

What could make initiatives promoting alternative food proteins more effective? (Select 3)

- | | |
|--|--|
| ☐ Better taste and product quality | ☐ Lower prices or financial incentives |
| ☐ Clearer information and labeling about benefits | ☐ Greater variety and availability in the canteen |
| ☐ Use of familiar ingredients or dishes | ☐ Social endorsement (e.g., peers, influencers) |
| ☐ Emphasis on health benefits | ☐ Emphasis on environmental benefits |

Socio-Demographic Background

B13

Gender (GEN)

Please state your gender:

- ☐ 1. Female ☐ 2. Male ☐ 3. Non-binary ☐ 4. Prefer not to say

B14

Age (AGE)

Please state your age (enter number with **no spaces**):

[Open ended]

B15

Education (EDU)

What is the highest level of education you have completed?

- ☐ 1. Primary education or less
- ☐ 2. Secondary education
- ☐ 3. Post-secondary, non-tertiary education
- ☐ 4. Undergraduate degree
- ☐ 5. Postgraduate degree

B16 Draw (DRAW)

Thank you for your participation. You are welcome to participate in the draw for a chance to win one out of five €50 Dipnosofistirion vouchers. If you want to participate, enter your email below. If not, please click next to complete the survey.

[email] · Note: no forced response

Table 18: Intervention Questionnaire administered during weeks 1 and 2 of choice editing intervention

	Baseline (N=171)	Week #1 (N=307)	Week #2 (N=206)	Total (N=684)
Beef (%)	Chi-square =9.65; p = 0.647			
Never	8.8	13.7	9.2	11.1
1–3 times per month	18.1	16.6	18.4	17.5
Once per week	26.3	25.4	26.2	25.9
2–4 times per week	32.2	32.9	35.0	33.3
5–6 times per week	9.9	5.9	5.3	6.7
Once a day	2.3	2.3	3.9	2.8
More than once per day	2.3	3.3	1.9	2.6
Pork (%)	Chi-square =8.21; p = 0.768			
Never	21.6	25.1	24.3	24.0
1–3 times per month	26.3	21.5	17.5	21.5
Once per week	24.0	23.8	30.1	25.7
2–4 times per week	22.8	23.5	21.4	22.7
5–6 times per week	3.5	3.9	3.9	3.8
Once a day	0.6	1.6	1.5	1.3
More than once per day	1.2	0.7	1.5	1.0
Chicken (%)	Chi-square =10.36; p = 0.585			
Never	5.3	9.4	6.8	7.6
1–3 times per month	7.6	7.2	9.2	7.9
Once per week	17.5	21.2	19.9	19.9
2–4 times per week	42.1	43.0	42.7	42.7
5–6 times per week	18.7	11.1	14.1	13.9
Once a day	5.8	4.6	5.3	5.1
More than once per day	2.9	3.6	1.9	2.9

	Baseline (N=171)	Week #1 (N=307)	Week #2 (N=206)	Total (N=684)
Fish/ Seafood	Chi-square =11.00; p = 0.529			
Never	15.2	20.2	12.6	16.7
1–3 times per month	35.7	33.6	33.0	33.9
Once per week	26.9	25.7	33.0	28.2
2–4 times per week	15.8	14.7	16.5	15.5
5–6 times per week	5.3	3.3	3.4	3.8
Once a day	0.6	1.6	0.5	1.0
More than once per day	0.6	1.0	1.0	0.9
Processed meats (sausages, cold cuts, etc.)	Chi-square =2.78; p = 0.997			
Never	32.2	33.9	31.6	32.7
1–3 times per month	26.9	28.0	29.6	28.2
Once per week	19.3	16.3	18.4	17.7
2–4 times per week	14.6	15.0	13.1	14.3
5–6 times per week	2.9	3.9	3.4	3.4
Once a day	2.3	2.0	1.9	2.0
More than once per day	1.8	1.0	1.9	1.5
Plant-based meat alternatives	Chi-square =25.52; p = 0.013			
Never	60.8	51.5	50.0	53.4
1–3 times per month	12.9	17.6	25.2	18.7
Once per week	14.0	11.1	14.1	12.7
2–4 times per week	6.4	10.7	5.8	8.2
5–6 times per week	3.5	3.3	0.5	2.5
Once a day	1.8	3.3	3.4	2.9
More than once per day	0.6	2.6	1.0	1.6
Legumes (beans, lentils, chickpeas)	Chi-square =5.08; p = 0.955			
Never	9.9	14.7	14.6	13.5
1–3 times per month	22.2	22.8	23.8	23.0
Once per week	31.0	26.4	28.6	28.2
2–4 times per week	24.6	25.1	22.8	24.3
5–6 times per week	7.6	6.2	5.3	6.3
Once a day	2.9	3.9	3.9	3.7
More than once per day	1.8	1.0	1.0	1.2

	Baseline (N=171)	Week #1 (N=307)	Week #2 (N=206)	Total (N=684)
Tofu/tempeh	Chi-square =8.94; p = 0.708			
Never	70.2	71.7	71.8	71.3
1–3 times per month	14	14.3	11.7	13.5
Once per week	4.1	3.6	6.8	4.7
2–4 times per week	4.1	5.5	4.9	5.0
5–6 times per week	3.5	2.3	2.9	2.8
Once a day	4.1	2.0	1.5	2.3
More than once per day	0.2	0.7	0.5	0.4
Eggs	Chi-square =22.69; p = 0.030			
Never	4.7	10.1	6.3	7.6
1–3 times per month	11.1	13.4	18.0	14.2
Once per week	15.2	13.7	15.0	14.5
2–4 times per week	27.5	34.2	30.1	31.3
5–6 times per week	25.7	12.4	15	16.5
Once a day	10.5	11.4	10.2	10.8
More than once per day	5.3	4.9	5.3	5.1
Dairy alternatives	Chi-square =11.41; p = 0.495			
Never	31.6	34.9	32.0	33.2
1–3 times per month	14.6	12.1	17.5	14.3
Once per week	14.6	12.7	12.1	13.0
2–4 times per week	12.3	16.9	13.1	14.6
5–6 times per week	11.1	7.8	7.8	8.6
Once a day	8.2	10.7	13.1	10.8
More than once per day	7.6	4.9	4.4	5.4

Table 19: Food consumption frequency by product category across study waves (Food Frequency Questionnaire)

	Baseline (N=171)	Week #1 (N=307)	Week #2 (N=206)	Total (N=684)	F / Chisquare (p value)
Support of Interventions					
Using “green choice” labels or icons to indicate sustainable options	3.7	3.8	3.5	3.7	5.19 (0.006)
Providing information about taste and protein content of plant-based dishes	3.7	3.7	3.5	3.7	2.06 (0.129)
Offering price discounts on plant-based products	3.7	3.6	3.3	3.5	4.67 (0.010)
Adding more plant-based dishes to menus	3.6	3.6	3.3	3.5	3.84 (0.022)
Placing plant-based products next to meat products	3.4	3.5	3.4	3.4	1.30 (0.273)
Providing information about the environmental impact of each dish	3.4	3.4	3.2	3.3	1.44 (0.238)
Increasing the number of plant-based dishes offered	3.4	3.4	3.0	3.3	5.37 (0.005)
Highlighting plant-based dishes as “chef’s specials” or “recommended”	3.1	3.2	2.9	3.1	3.41 (0.033)
Making plant-based meals the default option (meat available on request)	2.6	2.6	2.3	2.5	5.03 (0.007)
Acceptance of interventions					
Overall, how acceptable do you find initiatives that promote plant-based food choices in public and commercial food settings?	3.4	3.6	3.2	3.4	4.5 (0.011)
Effectiveness of interventions					
In your opinion, how effective are such interventions likely to be in encouraging people to reduce their meat consumption?	2.7	2.8	2.5	2.7	3.5 (0.031)

Table 20: Support, acceptability, and perceived effectiveness of intervention strategies across study waves

Note: The final column reports omnibus tests across Baseline, Week 1, and Week 2. Significant p-values indicate an overall difference across waves, but do not identify which specific pairwise comparisons are statistically different.

	Baseline (N=171)	Week #1 (N=307)	Week #2 (N=206)	Total (N=684)
Gender (%)				
Male	55.0	59.3	55.8	57.2
Female	43.9	37.5	40.8	40.1
Non-binary / Prefer not to say	1.2	3.3	3.4	2.8
Mean age (%)	24.6 (9.8)	23.4 (7.8)	24.2 (9.1)	23.9 (8.7)
Education (%)				
Primary education or less	2.9	2.6	2.9	2.8
Secondary education	18.7	22.5	26.7	22.8
Post-secondary education, non-tertiary education	17.0	19.5	19.9	19.0
Undergraduate degree	45.0	45.3	38.8	43.3
Post graduate degree	16.4	10.1	11.7	12.1
Diet (%)				
Omnivorous	79.5	76.9	83.5	79.5
Flexitarian	12.3	12.7	11.7	12.3
Pescatarian	3.5	4.6	3.4	3.9
Vegetarian	2.9	4.6	1.0	3.1
Vegan	1.9	1.3	0.5	1.2

Table 21: Socio-demographic background of the choice editing participant sample

Choice expansion



Ingredients:

Green peas, soaked yellow peas, onion, gluten-free oats, rapeseed oil, parsley, nutritional yeast, salt, cumin, potato starch, vinegar, lemon zest, coriander, black



Ingredients:

Fava bean protein, pea protein, water, rapeseed oil, starch, flavouring, onion, salt, natural colours (beetroot concentrate, safflower extract), vinegar, **stabiliser (methylcellulose), thickener (sodium alginate), vitamin B12.**

Figure 2: Veggie Falafel ('clean label') vs. Veggie burger ('dirty label') (products used in the pilot)

Section 1: Diet Profile

1 Which description fits you best?

- ☐ I eat meat regularly
- ☐ I limit my meat consumption ("flexitarian")
- ☐ I do not eat meat but eat other animal products (vegetarian)
- ☐ I do not eat any animal derived products (vegan)

Section 2: Motivation and Behaviour

	1 Strongly disagree	2	3	4	5 Strongly agree
2a Last month, I ate alternative proteins several times	☐	☐	☐	☐	☐
2b Next month, I will eat alternative proteins several times	☐	☐	☐	☐	☐
2c I am motivated to eat alternative proteins more often	☐	☐	☐	☐	☐

Section 3: Attitudes Towards Alternative Proteins

	1 Strongly disagree	2	3	4	5 Strongly agree
3a It is GOOD to eat alternative proteins	☐	☐	☐	☐	☐
3b It is NEGATIVE to eat alternative proteins	☐	☐	☐	☐	☐
3c It is UNCOMFORTABLE to eat alternative proteins	☐	☐	☐	☐	☐

Section 4: Food Choices

	1 Strongly disagree	2	3	4	5 Strongly agree
4a I try to maintain or improve my health through the food I eat.	☐	☐	☐	☐	☐
4b I care about the environmental impact of the food I eat.	☐	☐	☐	☐	☐
4c I consider myself a regular consumer of alternative protein products.	☐	☐	☐	☐	☐

Section 5: Marketing Elements

	1 Strongly disagree	2	3	4	5 Strongly agree
5a Placing a campaign product on a separate campaign display/shelf makes the products more visible and appealing.	☐	☐	☐	☐	☐
5b Visual material (e.g., advertising poster, slogan) captures my attention.	☐	☐	☐	☐	☐
5c Advertising helps increase the likelihood that I try new products.	☐	☐	☐	☐	☐
5d Products with a recipe suggestion on the packaging make me more interested in trying the product.	☐	☐	☐	☐	☐
5e Discounted prices make it more attractive to buy new products.	☐	☐	☐	☐	☐
5f In-store tastings increase the likelihood that I will buy new products.	☐	☐	☐	☐	☐

Section 6: Product Evaluation

	1 Strongly disagree	2	3	4	5 Strongly agree
6a You get a lot for the money compared with meat alternatives.	☐	☐	☐	☐	☐
6b The burger looks appealing and gives the impression of being high quality.	☐	☐	☐	☐	☐
6c I can imagine buying the product in the near future.	☐	☐	☐	☐	☐
6d The burger looks as good as a comparable meat product.	☐	☐	☐	☐	☐
6e You get a lot for the money compared with meat alternatives.	☐	☐	☐	☐	☐
6f The falafel looks appealing and gives the impression of being high quality.	☐	☐	☐	☐	☐
6g I can imagine buying the product in the near future.	☐	☐	☐	☐	☐
6h The falafel looks as good as a comparable meat product.	☐	☐	☐	☐	☐

Section 7: Campaign Exposure and Impact

7a

Have you seen the latest *retailers name* campaign with Veggie falafel and veggie burger through advertising (in the app, online, or in printed ads)?

☐ Yes ☐ No ☐ I do not know

7b

The *retailers name* campaign made me more interested in these products.

1	2	3	4	5
☐	☐	☐	☐	☐
Strongly disagree				Strongly agree

7c

The *retailers name* campaign made me more positive towards alternative proteins in general.

1	2	3	4	5
☐	☐	☐	☐	☐
Strongly disagree				Strongly agree

Section 8: Demographics

8 What is your age?

Open text

9 What is your gender?

- ☐ Woman
- ☐ Man
- ☐ Non-binary
- ☐ Prefer not to say
- ☐ Other (specify) _____

Table 22: Consumer survey / questionnaire

Variable	N	%
Gender (n=201)		
Male	130	65%
Female	69	34%
Non-binary	2	1%
Age (n=188)		
18-30 years	41	22%
31-44 years	46	24%
45-64 years	72	38%
65 years or more	29	15%
Diet (n=203)		
Omnivorous	107	53%
Flexitarian	47	23%
Vegetarian	22	11%
Vegan	27	13%

Table 23: Socio-demographic background of the choice expansion pilot participant sample

Interview guide for retail representatives regarding the implementation of the pilot

1. Can you briefly describe your role in the company, and how long you have held this role?
2. What is your experience with alternative protein products?
3. What is your experience with alternative protein products?
4. Which alternative protein products are available in [the chain's] stores? Can you give some examples?

Definition: Alternative proteins are protein sources that can replace animal protein and that come from plants, microorganisms, or other non-animal sources. Examples: chickpeas, fava beans, insects. Products can include both raw ingredients (e.g., canned chickpeas) and more processed products (e.g., veggie burgers, meat substitutes)

Market Development and Experience

5. In the period 2016–2021, sales of alternative proteins increased. Did you experience the same growth as the market overall?
6. What do you think were the reasons for this growth?
7. From 2022 to today, sales of alternative proteins have decreased. Did you experience the same decline as the market overall?
8. What do you think were the reasons for the decline?
9. Which types of products (raw ingredients vs. processed products) have contributed most to the growth and the decline?
10. How has this development affected [the chain/store]? (First increased demand, then reduced demand.)
11. Have you made changes to the assortment, marketing, or shelf placement?

Current Situation

12. How do you assess today's demand for alternative proteins in Norway?
13. Does this apply to both raw ingredients and processed products?
14. Which alternative proteins are most in demand now?
15. How do you assess profitability?
16. Does this apply to both raw ingredients and processed products?
17. Who buys these products?
18. Do you see any typical characteristics (age, geography, gender, lifestyle)?
19. What share of customers does this group represent?

Future Strategy

20. How do you think the market for alternative proteins will develop... in the next 5 years? In the next 10-15 years?
21. Do you have concrete plans for the "alternative proteins" category going forward?
22. What opportunities and barriers do you see for growth?

23. What is needed for alternative proteins to become “mainstream” in Norway?
24. What criteria must be met to list more products in this category?
25. (Assuming you expand the category) What consequences—positive and negative—would increased focus have? A) operational (storage, logistics, food waste)? B) Economic (margins, profitability)?

Store Campaign

26. Did implementing the campaign have any practical consequences for Coop (beyond ordinary campaigns)? A) Additional work in store/ in the warehouse? B) Purchasing/ logistics?
27. What about economic consequences? Positive? Negative? Which?
28. What opportunities and barriers do you see in increasing the supply of alternative protein products in your company?
29. Could such campaigns be carried out more often, or on a larger scale (more products)?
30. And can such campaigns help increase demand for alternative proteins in the longer term?
31. Can you tell me about the *product line name* product line?
 - When did it start?
 - Experiences?
 - Continuation/ plans going forward?

Closing

32. What role should grocery retail play in increasing demand for alternative proteins?
33. To what extent are you willing to promote healthier products, even if it comes at the expense of profitability?
34. To what extent are you willing to promote more sustainable products, even if it comes at the expense of profitability?
35. If you could give one piece of advice to actors who want to succeed with alternative proteins in Norwegian grocery retail, what would it be?
36. We would also like to speak with one of your stores about how this development has played out. Do you have any suggestions for whom we could talk to?
37. Is it okay if we contact you if we have additional questions after we have processed the interview?

Interviewee roles

- Interviewee 1** Category Manager for red dinner meat, including meat substitutes within the dinner category. 18 years of experience.
- Interviewee 2** Head of Communications with 17 years of experience.
- Interviewee 3** Category and Purchasing Director for fresh, frozen, and dairy products. In the role for about 3 years.
- Interviewee 4** Concept and Category Leader for bread, dairy, and cheese. In the role for about 1.5 years.
- Interviewee 5** Category Manager for groceries with 15 years of experience.
- Interviewee 6** Category and Marketing Manager with 8 years of experience.

Table 24: Interview guide and interviewee roles (choice expansion)

Choice environment

Veggie “Meat” Bourguignonne with ginger butternut puree and confit mushrooms

YIELD: 10 PORTIONS

TYPE: MAIN DISH

SEASONALITY: AUTUMN

INGREDIENTS

METHOD

Pickled onion

- 70 g onion, julienned
- 40 g apple vinegar
- 15 g sugar
- 2 g salt

- Dissolve sugar and salt in vinegar (cold).
- Add onion and brine to a vacuum bag and seal.
- Marinate sous-vide in the fridge 12 h.
- Keep refrigerated and serve cold.

Pumpkin and ginger purée

- 340 g butternut pumpkin, peeled and halved
- 15 g extra virgin olive oil
- 2 g fresh ginger
- 1 g salt

- Steam at 100 °C for 25 min.
- Let rest to release moisture.
- Blend with ginger, oil and salt in Thermomix at Speed 10 for 10 minutes until smooth and velvety.

Confit mushrooms

- 335 g frozen porcini
- 335 g fresh champignon
- 100 g rehydrated morels
- 100 g rehydrated dried porcini
- 65 g rehydrated black trumpet
- 1 L total oil (½ seed + ½ olive)

- Lightly salt mushrooms; rest 30 min. Drain.
- Confit at 110–120 °C in the oil blend for a few minutes, until tender but still springy.
- Remove from oil and drain well on kitchen paper.

Mushroom glaze

- 750 g red wine
- 85 g leek, halved
- 300 g red bell pepper, halved
- 200 g fresh beetroot, cut into wedges
- 25 g garlic (with skin)
- 85 g carrot, sliced
- 125 g celery, sliced
- 300 g champignon, sliced
- 85 g frozen porcini, sliced
- 40 g black trumpet (rehydrated)
- 1.8 L water
- 3 sprigs thyme
- 2 bay leaves
- 2,5 g five-pepper mix
- 0.5 g juniper
- Sugar
- 1,5 g yeast extract
- Kuzu – dissolved in water
- Salt

- Reduce the red wine by half and set aside.
- Roast the leek, red bell pepper, beetroot, and garlic on a tray in the oven at 230 °C for 15 + 15 minutes, turning halfway, until semi-blackened.
- Roughly cut the roasted vegetables.
- In a large pot, combine the roasted vegetables with the fresh carrot, celery, mushrooms, spices, reduced wine, and water.
- Cook over medium heat for 2 hours.
- Strain and press the solids well to extract flavor, yielding about 600–700 ml of fond.
- Add 4 % sugar and 3 % kuzu (dissolved in cold water) and the yeast extract.
- Cook briefly while stirring until the sauce thickens slightly and becomes glossy.
- Season with salt to taste.

INGREDIENTS	METHOD
Toasted pumpkin seeds • 50 g pumpkin seeds	• Roast in a single layer at 180 °C for 10 min (5 + 5), stir halfway. • Cool completely.
Veggie “Meat” • 400 g faba “meat” • 400 g pea “meat”	• Sauté very quickly in a little oil over high heat until browned. • Glaze in some of the finished sauce before plating. • (Portion: 80 g cooked weight per person.)
PLATING • Add 30 g of pumpkin and ginger purée in the middle of the plate • Add 90 g confit mushrooms around the purée • Add 80 g Veggie “meat” pieces coated in sauce around the mushrooms. • Garnish with 5 g toasted pumpkin seeds and 5 g pickled onion. • Spoon over 40 g glaze to finish.	

Table 25: Recipe developed by BCC





Figure 3: Menu from Bar Amelia (Belgian restaurant).

Meat and veggie/vegan dishes were shown in the same menu for the integrated menu (week 1)



Figure 4: Menu from Bar Amelia (Belgian restaurant).

Only veggie/vegan (plant-based) options were shown on the chalkboard for the segregated menu (week 2)

labo		
RESTAURANT		
ENTRANTES	PRINCIPALES	
Croquette de gamba et pectin	18 Guiso de seta, bacalao de proteína vegetal, calabacín especiada y reducción de vino tinto	23
Ernstalito, bonito y picadillo	19 Bono, pimientos asados y queso	26
Ernstalito, bonito y picadillo	20 Bono, pimientos asados y queso	26
Burrito Beef, queso fundido y salsa	21 Bono, pimientos asados y queso	26
Burrito Beef, queso fundido y salsa	22 Bono, pimientos asados y queso	26
Tarta de queso, calabacín y gel de mariscos	23 Bono, pimientos asados y queso	26
Ernstalito de tomate, calabacín y gel de mariscos	24 Bono, pimientos asados y queso	26
	25 Bono, pimientos asados y queso	26
	26 Bono, pimientos asados y queso	26
	27 Bono, pimientos asados y queso	26
	28 Bono, pimientos asados y queso	26
	29 Bono, pimientos asados y queso	26
	30 Bono, pimientos asados y queso	26
	31 Bono, pimientos asados y queso	26
	32 Bono, pimientos asados y queso	26
	33 Bono, pimientos asados y queso	26
	34 Bono, pimientos asados y queso	26
	35 Bono, pimientos asados y queso	26
	36 Bono, pimientos asados y queso	26
	37 Bono, pimientos asados y queso	26
	38 Bono, pimientos asados y queso	26
	39 Bono, pimientos asados y queso	26
	40 Bono, pimientos asados y queso	26
	41 Bono, pimientos asados y queso	26
	42 Bono, pimientos asados y queso	26
	43 Bono, pimientos asados y queso	26
	44 Bono, pimientos asados y queso	26
	45 Bono, pimientos asados y queso	26
	46 Bono, pimientos asados y queso	26
	47 Bono, pimientos asados y queso	26
	48 Bono, pimientos asados y queso	26
	49 Bono, pimientos asados y queso	26
	50 Bono, pimientos asados y queso	26
	51 Bono, pimientos asados y queso	26
	52 Bono, pimientos asados y queso	26
	53 Bono, pimientos asados y queso	26
	54 Bono, pimientos asados y queso	26
	55 Bono, pimientos asados y queso	26
	56 Bono, pimientos asados y queso	26
	57 Bono, pimientos asados y queso	26
	58 Bono, pimientos asados y queso	26
	59 Bono, pimientos asados y queso	26
	60 Bono, pimientos asados y queso	26
	61 Bono, pimientos asados y queso	26
	62 Bono, pimientos asados y queso	26
	63 Bono, pimientos asados y queso	26
	64 Bono, pimientos asados y queso	26
	65 Bono, pimientos asados y queso	26
	66 Bono, pimientos asados y queso	26
	67 Bono, pimientos asados y queso	26
	68 Bono, pimientos asados y queso	26
	69 Bono, pimientos asados y queso	26
	70 Bono, pimientos asados y queso	26
	71 Bono, pimientos asados y queso	26
	72 Bono, pimientos asados y queso	26
	73 Bono, pimientos asados y queso	26
	74 Bono, pimientos asados y queso	26
	75 Bono, pimientos asados y queso	26
	76 Bono, pimientos asados y queso	26
	77 Bono, pimientos asados y queso	26
	78 Bono, pimientos asados y queso	26
	79 Bono, pimientos asados y queso	26
	80 Bono, pimientos asados y queso	26
	81 Bono, pimientos asados y queso	26
	82 Bono, pimientos asados y queso	26
	83 Bono, pimientos asados y queso	26
	84 Bono, pimientos asados y queso	26
	85 Bono, pimientos asados y queso	26
	86 Bono, pimientos asados y queso	26
	87 Bono, pimientos asados y queso	26
	88 Bono, pimientos asados y queso	26
	89 Bono, pimientos asados y queso	26
	90 Bono, pimientos asados y queso	26
	91 Bono, pimientos asados y queso	26
	92 Bono, pimientos asados y queso	26
	93 Bono, pimientos asados y queso	26
	94 Bono, pimientos asados y queso	26
	95 Bono, pimientos asados y queso	26
	96 Bono, pimientos asados y queso	26
	97 Bono, pimientos asados y queso	26
	98 Bono, pimientos asados y queso	26
	99 Bono, pimientos asados y queso	26
	100 Bono, pimientos asados y queso	26
	101 Bono, pimientos asados y queso	26
	102 Bono, pimientos asados y queso	26
	103 Bono, pimientos asados y queso	26
	104 Bono, pimientos asados y queso	26
	105 Bono, pimientos asados y queso	26
	106 Bono, pimientos asados y queso	26
	107 Bono, pimientos asados y queso	26
	108 Bono, pimientos asados y queso	26
	109 Bono, pimientos asados y queso	26
	110 Bono, pimientos asados y queso	26
	111 Bono, pimientos asados y queso	26
	112 Bono, pimientos asados y queso	26
	113 Bono, pimientos asados y queso	26
	114 Bono, pimientos asados y queso	26
	115 Bono, pimientos asados y queso	26
	116 Bono, pimientos asados y queso	26
	117 Bono, pimientos asados y queso	26
	118 Bono, pimientos asados y queso	26
	119 Bono, pimientos asados y queso	26
	120 Bono, pimientos asados y queso	26
	121 Bono, pimientos asados y queso	26
	122 Bono, pimientos asados y queso	26
	123 Bono, pimientos asados y queso	26
	124 Bono, pimientos asados y queso	26
	125 Bono, pimientos asados y queso	26
	126 Bono, pimientos asados y queso	26
	127 Bono, pimientos asados y queso	26
	128 Bono, pimientos asados y queso	26
	129 Bono, pimientos asados y queso	26
	130 Bono, pimientos asados y queso	26
	131 Bono, pimientos asados y queso	26
	132 Bono, pimientos asados y queso	26
	133 Bono, pimientos asados y queso	26
	134 Bono, pimientos asados y queso	26
	135 Bono, pimientos asados y queso	26
	136 Bono, pimientos asados y queso	26
	137 Bono, pimientos asados y queso	26
	138 Bono, pimientos asados y queso	26
	139 Bono, pimientos asados y queso	26
	140 Bono, pimientos asados y queso	26
	141 Bono, pimientos asados y queso	26
	142 Bono, pimientos asados y queso	26
	143 Bono, pimientos asados y queso	26
	144 Bono, pimientos asados y queso	26
	145 Bono, pimientos asados y queso	26
	146 Bono, pimientos asados y queso	26
	147 Bono, pimientos asados y queso	26
	148 Bono, pimientos asados y queso	26
	149 Bono, pimientos asados y queso	26
	150 Bono, pimientos asados y queso	26
	151 Bono, pimientos asados y queso	26
	152 Bono, pimientos asados y queso	26
	153 Bono, pimientos asados y queso	26
	154 Bono, pimientos asados y queso	26
	155 Bono, pimientos asados y queso	26
	156 Bono, pimientos asados y queso	26
	157 Bono, pimientos asados y queso	26
	158 Bono, pimientos asados y queso	26
	159 Bono, pimientos asados y queso	26
	160 Bono, pimientos asados y queso	26
	161 Bono, pimientos asados y queso	26
	162 Bono, pimientos asados y queso	26
	163 Bono, pimientos asados y queso	26
	164 Bono, pimientos asados y queso	26
	165 Bono, pimientos asados y queso	26
	166 Bono, pimientos asados y queso	26
	167 Bono, pimientos asados y queso	26
	168 Bono, pimientos asados y queso	26
	169 Bono, pimientos asados y queso	26
	170 Bono, pimientos asados y queso	26
	171 Bono, pimientos asados y queso	26
	172 Bono, pimientos asados y queso	26
	173 Bono, pimientos asados y queso	26
	174 Bono, pimientos asados y queso	26
	175 Bono, pimientos asados y queso	26
	176 Bono, pimientos asados y queso	26
	177 Bono, pimientos asados y queso	26
	178 Bono, pimientos asados y queso	26
	179 Bono, pimientos asados y queso	26
	180 Bono, pimientos asados y queso	26
	181 Bono, pimientos asados y queso	26
	182 Bono, pimientos asados y queso	26
	183 Bono, pimientos asados y queso	26
	184 Bono, pimientos asados y queso	26
	185 Bono, pimientos asados y queso	26
	186 Bono, pimientos asados y queso	26
	187 Bono, pimientos asados y queso	26
	188 Bono, pimientos asados y queso	26
	189 Bono, pimientos asados y queso	26
	190 Bono, pimientos asados y queso	26
	191 Bono, pimientos asados y queso	26
	192 Bono, pimientos asados y queso	26
	193 Bono, pimientos asados y queso	26
	194 Bono, pimientos asados y queso	26
	195 Bono, pimientos asados y queso	26
	196 Bono, pimientos asados y queso	26
	197 Bono, pimientos asados y queso	26
	198 Bono, pimientos asados y queso	26
	199 Bono, pimientos asados y queso	26
	200 Bono, pimientos asados y queso	26
	201 Bono, pimientos asados y queso	26
	202 Bono, pimientos asados y queso	26
	203 Bono, pimientos asados y queso	26
	204 Bono, pimientos asados y queso	26
	205 Bono, pimientos asados y queso	26
	206 Bono, pimientos asados y queso	26
	207 Bono, pimientos asados y queso	26
	208 Bono, pimientos asados y queso	26
	209 Bono, pimientos asados y queso	26
	210 Bono, pimientos asados y queso	26
	211 Bono, pimientos asados y queso	26
	212 Bono, pimientos asados y queso	26
	213 Bono, pimientos asados y queso	26
	214 Bono, pimientos asados y queso	26
	215 Bono, pimientos asados y queso	26
	216 Bono, pimientos asados y queso	26
	217 Bono, pimientos asados y queso	26
	218 Bono, pimientos asados y queso	26
	219 Bono, pimientos asados y queso	26
	220 Bono, pimientos asados y queso	26
	221 Bono, pimientos asados y queso	26
	222 Bono, pimientos asados y queso	26
	223 Bono, pimientos asados y queso	26
	224 Bono, pimientos asados y queso	26
	225 Bono, pimientos asados y queso	26
	226 Bono, pimientos asados y queso	26
	227 Bono, pimientos asados y queso	26
	228 Bono, pimientos asados y queso	26
	229 Bono, pimientos asados y queso	26
	230 Bono, pimientos asados y queso	26
	231 Bono, pimientos asados y queso	26
	232 Bono, pimientos asados y queso	26
	233 Bono, pimientos asados y queso	26
	234 Bono, pimientos asados y queso	26
	235 Bono, pimientos asados y queso	26
	236 Bono, pimientos asados y queso	26
	237 Bono, pimientos asados y queso	26
	238 Bono, pimientos asados y queso	26
	239 Bono, pimientos asados y queso	26
	240 Bono, pimientos asados y queso	26
	241 Bono, pimientos asados y queso	26
	242 Bono, pimientos asados y queso	26
	243 Bono, pimientos asados y queso	26
	244 Bono, pimientos asados y queso	26
	245 Bono, pimientos asados y queso	26
	246 Bono, pimientos asados y queso	26
	247 Bono, pimientos asados y queso	26
	248 Bono, pimientos asados y queso	26
	249 Bono, pimientos asados y queso	26
	250 Bono, pimientos asados y queso	26
	251 Bono, pimientos asados y queso	26
	252 Bono, pimientos asados y queso	26
	253 Bono, pimientos asados y queso	26
	254 Bono, pimientos asados y queso	26
	255 Bono, pimientos asados y queso	26
	256 Bono, pimientos asados y queso	26
	257 Bono, pimientos asados y queso	26
	258 Bono, pimientos asados y queso	26
	259 Bono, pimientos asados y queso	26
	260 Bono, pimientos asados y queso	26
	261 Bono, pimientos asados y queso	26
	262 Bono, pimientos asados y queso	26
	263 Bono, pimientos asados y queso	26
	264 Bono, pimientos asados y queso	26
	265 Bono, pimientos asados y queso	26
	266 Bono, pimientos asados y queso	26
	267 Bono, pimientos asados y queso	26
	268 Bono, pimientos asados y queso	26
	269 Bono, pimientos asados y queso	26
	270 Bono, pimientos asados y queso	26
	271 Bono, pimientos asados y queso	26
	272 Bono, pimientos asados y queso	26
	273 Bono, pimientos asados y queso	26
	274 Bono, pimientos asados y queso	26
	275 Bono, pimientos asados y queso	26
	276 Bono, pimientos asados y queso	26
	277 Bono, pimientos asados y queso	26
	278 Bono, pimientos asados y queso	26
	279 Bono, pimientos asados y queso	26
	280 Bono, pimientos asados y queso	26
	281 Bono, pimientos asados y queso	26
	282 Bono, pimientos asados y queso	26
	283 Bono, pimientos asados y queso	26
	284 Bono, pimientos asados y queso	26
	285 Bono, pimientos asados y queso	26
	286 Bono, pimientos asados y queso	26
	287 Bono, pimientos asados y queso	26
	288 Bono, pimientos asados y queso	26
	289 Bono, pimientos asados y queso	26
	290 Bono, pimientos asados y queso	26
	291 Bono, pimientos asados y queso	26
	292 Bono, pimientos asados y queso	26
	293 Bono, pimientos asados y queso	26
	294 Bono, pimientos asados y queso	26
	295 Bono, pimientos asados y queso	26
	296 Bono, pimientos asados y queso	26
	297 Bono, pimientos asados y queso	26
	298 Bono, pimientos asados y queso	26
	299 Bono, pimientos asados y queso	26
	300 Bono, pimientos asados y queso	26
	301 Bono, pimientos asados y queso	26
	302 Bono, pimientos asados y queso	26
	303 Bono, pimientos asados y queso	26
	304 Bono, pimientos asados y queso	26
	305 Bono, pimientos asados y queso	26
	306 Bono, pimientos asados y queso	26
	307 Bono, pimientos asados y queso	26
	308 Bono, pimientos asados y queso	26
	309 Bono, pimientos asados y queso	26
	310 Bono, pimientos asados y queso	26
	311 Bono, pimientos asados y queso	26
	312 Bono, pimientos asados y queso	26
	313 Bono, pimientos asados y queso	26
	314 Bono, pimientos asados y queso	26
	315 Bono, pimientos asados y queso	26
	316 Bono, pimientos asados y queso	26

Section 1: General Demographics

1 Which of the following describes your age?

- ☐ 18 – 24 ☐ 25 – 34 ☐ 35 – 44 ☐ 45 – 54 ☐ 55 – 64 ☐ >65

2 Gender:

- ☐ Male ☐ Female ☐ Non-binary ☐ Prefer not to say

3 Please choose ONE of the following statements that best represent your dietary habits:

- ☐ I regularly eat red meat, fish and chicken
- ☐ I consciously reduce meat intake, but eating meat now and then
- ☐ I don't eat red meat, but I eat fish, chicken and other poultry
- ☐ I don't eat red meat nor chicken, but I eat fish and shellfish
- ☐ I eat organic and locally grown foods, with a great overlap with foods consumed in a vegetarian diet, yet also including some kinds of meat
- ☐ I don't eat meat or fish, but I eat eggs and dairy products
- ☐ I don't eat meat, fish or eggs, but I eat dairy products
- ☐ I don't eat meat, fish or dairy products, but I eat eggs
- ☐ I don't eat meat and I don't use products of animal origin

4

Please read the following statements carefully, and select the response that you consider best reflects your usual behavior using the scale below. It is important to me that the food I eat on a typical day is...

	1 Not at all important	2	3 Neither / nor	4	5 Very important
Healthy	☐	☐	☐	☐	☐
A way of monitoring my mood	☐	☐	☐	☐	☐
Convenient	☐	☐	☐	☐	☐
Provides me with pleasurable sensations	☐	☐	☐	☐	☐
Natural	☐	☐	☐	☐	☐
Affordable	☐	☐	☐	☐	☐
Helps me control my weight	☐	☐	☐	☐	☐
Familiar	☐	☐	☐	☐	☐
Environmentally friendly	☐	☐	☐	☐	☐
Animal friendly	☐	☐	☐	☐	☐
Fairly traded	☐	☐	☐	☐	☐

5

How much do you agree or disagree with the following statements:

	1 Strongly disagree	2	3 Neither / nor	4	5 Strongly agree
"I am constantly sampling new and different foods"	☐	☐	☐	☐	☐
"I don't trust new food"	☐	☐	☐	☐	☐
"If I don't know what is in a food, I won't try it"	☐	☐	☐	☐	☐
"I like food from different cultures"	☐	☐	☐	☐	☐
"Food from other cultures looks too weird to eat"	☐	☐	☐	☐	☐
"At social gatherings, I will try a new food"	☐	☐	☐	☐	☐
"I am afraid to eat food I have never had before"	☐	☐	☐	☐	☐
"I am very particular about the food I will eat"	☐	☐	☐	☐	☐
"I will eat almost anything"	☐	☐	☐	☐	☐
"I like going to places serving foods from cultures different to my own"	☐	☐	☐	☐	☐

Section 2: Menu Interaction and Awareness

A. Menu attention

6

Did you notice any dishes that were highlighted or appeared more prominent on the menu?

☐ Yes ☐ No

7

If yes, which dishes caught your attention?

8

Did you notice the descriptions of the AP dishes?

☐ Yes ☐ No

B. Appeal and Influence of Descriptions

9

How appealing did you find the descriptions of AP dishes?

☐ 1 – Not appealing at all ☐ 2 ☐ 3 ☐ 4 ☐ 5 – Very appealing
☐ Didn't notice / Can't recall

10

Which type of description influenced or would influence your choice more?

☐ Descriptive/emotional language (e.g., "Guiso de setas, bocados de proteína vegetal, calabaza especiada y reducción de vino tinto")
☐ Simple naming (e.g., "Guiso de setas, proteína de soja, haba y guisante, y puré de calabaza")

11 Did you order an AP dish?

☐ Yes ☐ No

12 If yes, how did the menu layout affect your ordering decision?

☐ 1 – Much less likely to order ☐ 2 ☐ 3 ☐ 4 ☐ 5 – Much more likely to order
☐ I went with my usual choice/routine

13 If no, did the menu design or description make you consider ordering an AP dish?

☐ 1 – Not at all ☐ 2 ☐ 3 ☐ 4 ☐ 5 – Very much

D. Menu Layout and Routine

14 Did you notice AP dishes being listed separately or integrated with other dishes?

☐ Separately ☐ Integrated ☐ Not sure

E. Visual Cues

15

Did you notice any cues highlighting certain dishes? (e.g.: vegan logo / “signature dish” / “chef’s favourite” / local hero / other)

☐ Yes ☐ No

If yes, which cues did you notice? _____

16 Did these cues make AP dishes seem more attractive or appealing?

☐ 1 – Not at all ☐ 2 ☐ 3 ☐ 4 ☐ 5 – Very much

Section 3: Social Cues and Staff Recommendations

17 Did a staff member recommend any dishes to you?

☐ Yes ☐ No

18 How much did the staff’s recommendation influence your choice?

☐ 1 – Not at all ☐ 2 ☐ 3 ☐ 4 ☐ 5 – Very much

19 Did you notice other diners’ plates and were your choices influenced by what you saw?

☐ Yes, influenced me
☐ Yes, but did not influence
☐ No

Section 4: Dish Experience (Only if they ordered an AP dish)

20 How satisfied were you with the taste of your plant-based protein dish?

☐ 1 – Very dissatisfied ☐ 2 ☐ 3 ☐ 4 ☐ 5 – Very satisfied

21 How would you rate the presentation/appearance of your plant-based protein dish?

☐ 1 – Very poor ☐ 2 ☐ 3 ☐ 4 ☐ 5 – Excellent

22 Overall, how satisfied were you with your plant-based dish experience?

☐ 1 – Very dissatisfied ☐ 2 ☐ 3 ☐ 4 ☐ 5 – Very satisfied

Section 5: Overall Perception of AP Dishes

23

Compared to usual restaurant visits, how noticeable were the plant-based dishes in this visit?

☐ 1 – Much less noticeable ☐ 2 ☐ 3 ☐ 4 ☐ 5 – Much more noticeable

24

Did the combination of menu design, visual cues, and staff recommendations make you more likely to try the plant-based protein dish?

☐ 1 – Not at all ☐ 2 ☐ 3 ☐ 4 ☐ 5 – Very much

25 How normalized did the plant-based protein dish feel in the overall menu?

☐ 1 – Not at all normal ☐ 2 ☐ 3 ☐ 4 ☐ 5 – Very normal

Section 6: Preference Shift and Future Intentions

26 Before this visit, how often do you choose plant-based protein dishes in restaurants?

☐ Never ☐ Rarely ☐ Occasionally ☐ Frequently

27

How likely are you to choose plant-based protein dishes in the future based on this visit or experience?

☐ 1 – Very unlikely ☐ 2 ☐ 3 ☐ 4 ☐ 5 – Very likely

Age	Spain	Belgium
18 - 24	6.7	11.0
25 - 34	30.2	46.9
35 - 44	30.9	24.8
45 - 55	18.8	13.1
56 - 66	9.4	3.4
>66	4.0	0.7
Gender	Spain	Belgium
Female	63.8	46.2
Male	34.9	52.4
Non-binary	0.7	0.0
Prefer not to disclose	0.7	1.4
Consumption frequency at the restaurant	Spain	Belgium
First time	39.6	19.8
1 or less/month	57.0	45.2
2-3 times/month	3.4	18.3
every week	0.0	16.7

Table 27: Demographic data (%) of customers responding to the questionnaire in the restaurants conducting the behavioural pilots.

Interview guide for restaurant staff regarding the implementation of the pilot

Semi-Structured Interview Guide: Alternative Proteins in food system sector

Intro / Background

- 1. Role and experience with alternative proteins:** Can you briefly describe your role and day to day responsibilities? What has been your experience so far with alternative protein products (before and during this intervention)?
- 2. Perception/ Impression of Intervention:** How would you describe your general impressions of the intervention? What stood out to you most during this period? How to do perceive balance between effort and impact?

Operational Impact (feasibility, opportunity, barriers, day-to-day)

- 3. Day-to-day changes:** Thinking about the intervention, what changed in your day-to-day operations, if anything (e.g. ordering, stocking, preparation, customer interaction)? *Optional probes:* What felt new or different? How did efforts change?
- 4. Feasibility and challenges:** How feasible did these changes feel for you and your colleagues in practice? What were the main things that made it easier or harder? *Optional probes:* Time, workload, training, internal procedures, space, IT/systems.
- 5. Operational requirements for a larger AP offer:** If your organization were to offer more AP products on a regular basis, what would need to be in place operationally to make this work smoothly? *Optional probes:* Processes, training, support from management, supplier reliability, product characteristics.

Economic Impact (costs, benefits, business case)

- 6. Perceived effects on performance:** From your perspective, did the intervention have any noticeable effects, positive or negative, on sales, costs, or other key performance indicators? *Optional probes:* Turnover of AP products, waste, margin, customer numbers, image.
- 7. Conditions for a strong business case:** What would need to be true for you/your organisation to see APs as clearly attractive from a business perspective? *Optional probes:* Price, supplier conditions, marketing support, data on performance, customer insights.
- 8. Risks and concerns:** What economic risks or concerns do you see in expanding the offer of AP products in your organisation? *Optional probes:* Low demand, cannibalising other products, price levels, uncertainty.

Scalability and Sector Transformation

- 9. Scaling up this intervention:** Based on what you observed here, under what conditions could similar interventions be scaled up to more stores/ restaurants/ organizations? *Optional probes:* What would support achieving this?
- 10. Drivers and barriers for a wider transition:** If you look 5–10 years ahead, what role do you think alternative proteins could realistically play in your segment? What do you see as the main drivers and the main barriers for a broader shift towards alternative proteins in your part of the food system?

Closing

- 11. Anything else / advice:** Is there anything important we haven't discussed that you think researchers or policymakers should know about making a larger shift towards APs workable for operators like you?

Interviewee roles

Interviewee 1 LAbE. Waiter and Sommelier. Head of the Wine Cellar.

Interviewee 2 LAbE. Front-of-House Manager, responsible for team management, service supervision, customer relations, and procurement.

Interviewee 3 LAbE. Kitchen Manager and Head Chef.

Interviewee 4 Bar Amelia. Co-manager. Responsible for the operational processes and restaurant's offering.

Interviewee 5 Bar Amelia, Manager.

Interviewee 6 De Klokkeput, Manager.

Beyond choice

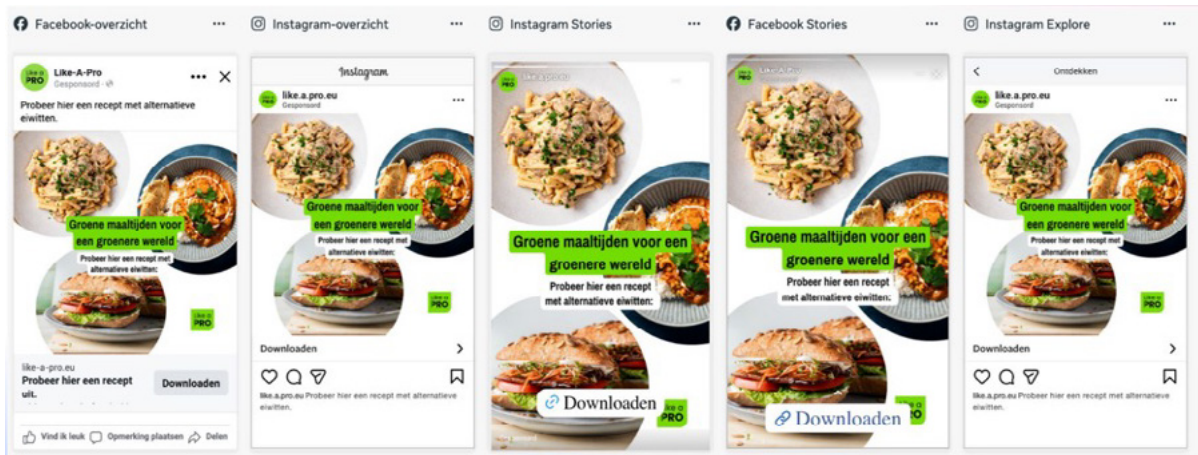


Figure 6: Example of NL 'Sustainability - Priming' frame in all Meta placements

AGE	GENDER	*RESULT	REACH	VIEWS	CLICKS	**CTR
18-24	Female	6	450	795	17	2.14%
18-24	Male	-	95	166	3	1.81%
18-24	Unknown	-	19	31	-	-
25-34	Female	6	678	1.303	14	1.07%
25-34	Male	-	229	413	7	1.69%
25-34	Unknown	-	40	78	2	2.56%
35-44	Female	15	1.036	1.897	39	2.06%
35-44	Male	2	294	555	8	1.44%
35-44	Unknown	-	36	59	-	-
45-54	Female	46	2.851	5.431	122	2.25%
45-54	Male	5	706	1.326	19	1.43%
45-54	Unknown	-	110	153	3	1.96%
55-64	Female	110	5.562	11.953	382	3.20%
55-64	Male	19	1.514	3.199	77	2.41%
55-64	Unknown	1	151	231	6	2.60%
65+	Female	227	8.615	18.575	811	4.37%
65+	Male	47	2.077	4.269	145	3.40%
65+	Unknown	4	172	339	13	3.83%
Unknown	Unknown	1				

Table 29: Meta Results – By full sample demographics (all countries)

*Results represent downloads; **CTR = Click through rate

Theme	Frame	Comment translated into English
Health	Gain	• help the planet don't eat anymore
	Loss	• Nonsense • Too many PROCESSED meat products from the supermarket, yes, not a pure, unadulterated piece of meat from animals that have had a good and proper diet. This is misleading information. Dear people, do your own research • Too much processed food can be bad! • Anything that has TO in front of it is not good. • Shhh, don't say anything about this to the carcass eaters, evil punishes itself. • Too much ultra-processed food can carry many health risks.
Sustainability	Gain	• What are alternative proteins? Never heard of them. • They can come from plant sources (such as legumes, grains, nuts, and seeds), meat substitutes (made from, for example, pea protein or soy), or other sources such as insects, algae, and microbial proteins. • Okay, it's strange to call it alternative. Perhaps the only alternative for the planet and your own health. • T-bone steak please
	Loss	• It can be shorter: Eating meat harms the whole world! • Processed meat can cause damage to our bodies because it is highly processed. • Any „meat“ harms any animal. • Too many E-numbers are harmful to my health. • Vegan for life! • Pffff, just eat what comes from the Netherlands. Otherwise, it's imported, and you have no idea what the history is behind it. Here, every stall has a camera, and in Poland or Hungary, there isn't one!

Table 30: Comment sentiments – The Netherlands

Theme	Frame	Comment translated into English
Health	Loss	• Increase health risks??? • So you become healthier, great • Yes. As you write: meat increases the „risk“ to health. That's why the state wants us to eat less.
Sustainability	Gain	• NO THANKS. You can forget it, you can. Meat is healthy, and you get B12 vitamins and amino acids from beef. It is NOT the cows' fault. • And you can NOT save the planet by avoiding eating beef. Read the Book of Revelation in the Bible. • Thank you
	Loss	• Too little meat can harm our world. • Too little meat can harm our health. • You can easily eat your fill of plant proteins • It's totally ok • I follow Strange Skov. With not eating so many carbohydrates and more meat so you feel full. • Plant-based butter and cream - that's probably a false trade name.
	Prime	• Green and Healthy • Delicious! I'll start with mushroom stroganoff

Table 31: Comment sentiments – Denmark

Theme	Frame	Comment translated into English
Health	Gain	• Many thanks
	Loss	• According to whom? What do you base your opinion on?

Table 32: Comment sentiments – Spain

Interview guide - Campaign creators

Purpose of this document

This interview plan is part of the Behavioural Intervention Pilots under the LIKE-A-PRO project. It outlines the purpose of the interviews, the target group, and the interview questions.

It also describes the support request we would like to make to you as a LIKE-A-PRO partner.

About the Behavioural Intervention Pilots

The Behavioural Intervention Pilots, as part of the LIKE-A-PRO project, explore how different behavioural strategies can stimulate the uptake of APs and contribute to a broader shift toward sustainable consumption.

The pilots primarily engage with individual consumers to understand how different intervention setups influence their behaviour. However, an essential part of these pilots is also engaging key stakeholders within the food environment to understand how the interventions impact their work. The stakeholder groups include: food service operators, retail operators, restaurant representatives and campaign creators.

This interview plan specifically focuses on interviewing campaign creators. These conversations will allow us to learn from their experience and explore how behavioural science and findings from the pilots can support and strengthen future campaigns and communication strategies.

All participants will be given the option to remain anonymous. Insights will be shared in aggregated form only. These interviews will take place during the implementation phase of the pilots, with potential follow-ups to share results, co-develop refinements, and support implementation efforts where there is interest.

Interview objective and target group

Objective: To interview campaign creators from different EU countries to collect valuable insights that will inform more effective EU-wide campaigns promoting APs.

Target group: Campaign creators from various EU countries who design and implement campaigns, including representatives from advertising agencies, government bodies, universities, research centres, and NGOs, with proven experience in sustainability, food systems, and related societal topics.

This includes:

- Campaign manager or lead
- Communication strategist or advisor
- Behavioural change specialist
- Social marketing expert
- Brand managers
- Public engagement officer
- Creative director
- Sustainability communication officer
- Advocacy or outreach coordinator
- Content strategist
- Social media expert
- A colleague at your own company may be included as well!

Your assignment

We kindly ask for your support in conducting these interviews. Since not every campaign creator may feel comfortable speaking English, it would be extremely helpful if the interviews could be conducted in the local language. For that reason, we kindly ask for your assistance in conducting these interviews. Others might be completely comfortable with English. In those cases, we can also conduct the interviews ourselves.

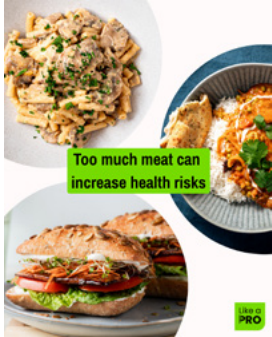
Foundation Week Without Meat will ensure that all input is harmonized and delivered in a consistent format, making comparison and analysis straightforward.

Below are the practical details:

- **Interview questions:** The interview questions are included in this document, along with a format you can use to report the results.
- **Language:** You can conduct the interview in the local language, but please submit the results in English.
- **Duration:** The interview questions are designed in such a way that one interview should take no longer than 30 minutes.
- **Approaching participants:** A suggested email template for reaching out to your network is provided after the interview questions in this document.
- **Results:** Please summarize and submit the responses in the provided format (in English). What may help is to ask the interviewee for permission to record the interview.
- **Anonymity:** All participants can remain anonymous if they want to; data will only be shared in aggregated form.
- **Sharing results with participants:** Participants can receive a summary of the results. If they are interested, please make a note of their email address.

Interview questions

1. Can you briefly describe your role and your background experience with campaigns aimed at behaviour change?
2. What is your experience with influencing behaviour through communication campaigns?
3. Do you consciously apply specific communication frames or techniques when designing your campaigns? If yes, which ones and why? If not, how do you decide on the messaging approach?
4. Have you come across campaigns that triggered resistance or disengagement? What do you think went wrong?
5. Do you assess whether a campaign has led to behaviour change? If so, how do you measure that change?
6. What is your go-to tip for designing a successful behaviour change campaign?
7. What advice would you give to the European Union (or others) when it comes to developing behaviour change campaigns on topics like sustainability and food?
8. Part of the project we are working on is testing communication frames to see if they lead to behavior change. We are doing this by testing a total of three frames (gain, loss, and priming) and two themes (sustainability and health) into a social media campaign. Please let us know what frame you think would work best to encourage behavior change toward eating APs more often and why.
 - Ø Please briefly explain and show the different communication frames when asking this question. You can find the frames below.

	First example	Second example	Third example
Type of message	Health theme Gain frame	Health theme Loss frame	Health theme Priming frame
Advertisement			
Copy	Just by switching to delicious alternative proteins to your meals. 💪 Try out a recipe here	Make the smart switch to alternative proteins now to protect your future well-being. Try out a recipe here	Eating well never felt this good. 🍽️ Try out a recipe with alternative protein here

	Fourth example	Fifth example	Sixth example
Type of message	Sustainability theme Gain frame	Sustainability theme Loss frame	Sustainability theme Priming frame
Advertisement			
Copy	Every alternative protein choice you make protects our planet's resources. 🌍 Try out a recipe here	If we don't change what's on our plates, we risk losing what's left of our planet. 🌍 Try out a recipe with alternative protein here	Try out a recipe with alternative protein here

Table 33: Semi-structured interview guide (campaign professionals)

No.	Country	Organisation	Sector	Function / role
1	Netherlands	Week Without Meat	Non-profit / Behaviour change campaign	Founder and Campaign Strategist
2	Netherlands	ProVeg	NGO / Behaviour change and advocacy	Campaign Manager (Veggie Challenge)
3	Netherlands	WWF Netherlands	NGO / Environmental sustainability	Nutrition and Sustainable Consumption Expert
4	Denmark	Dyrenes Alliance	NGO / Animal rights	Campaign Manager (Plant-based campaigns)
5	Belgium	BE Vegan	NGO / Vegan advocacy	Project Manager and Campaign Co-Creator
6	Germany	NAHhaft	NGO / Sustainable food systems	Policy and Communication Specialist
7	Greece	Boroume	Non-profit / Food waste prevention	Campaign and Education Coordinator
8	Greece	EKPIZO	Consumer association	Founding Member and Policy Advocate
9	United Kingdom	Behaviour Change UK	Social enterprise / Behavioural consultancy	Co-Founder and Operations Director
10	Germany	WWF Germany	NGO / Environmental sustainability	Behaviour Change Manager
11	Spain	Hopscotch	Marketing agency / Agrifood sector	Country Manager
12	Spain	CNTA	Advertising / FMCG	Account Manager (Behavioural Campaigns)
13	Norway	REvise / Norsk Gjenvinning	Private sector / Waste management	Project Lead (Sustainability and Behaviour Change)
14	Slovenia	Slovenian Vegan National Society	NGO / Vegan advocacy	Campaign Manager and Event Organiser
15	Slovenia	Kulinarični Atelje d.o.o. – Posestvo Monstera	Hospitality / Sustainable gastronomy	Co-owner and Sustainability Advocate
16	Slovenia	SousTWarjanje Zgodb	Tourism / Marketing	Campaign Designer and Marketing Consultant
17	Poland	Danone / Alpro	Private sector / Food industry	One Health Mission and Strategy Senior Manager
18	Finland	WWF Finland	NGO / Environmental sustainability	Communication Manager (Sustainable Diets)
19	Finland	MeEat Food Tech Oy	Private sector / Plant-based food	Category and Customer Manager
20	Norway	12Years	Consultancy / Sustainability communication	Founder and Consultant

Table 34: Overview of interview participants (Anonymised)

References

- [1] Zafer Bashi et al., Alternative proteins: The race for market share is on. McKinsey and Company, 2019.
- [2] European Commission, A European Green Deal. Striving to be the first climate-neutral continent.
- [3] European Union, “Farm to Fork Strategy. For a fair, healthy and environmentally-friendly food system,” 2020.
- [4] ING Economics Department, “The protein shift: will Europeans change their diets,” 2017.
- [5] Hartmann et al., “Consumers’ evaluation of the environmental friendliness, healthiness and naturalness of meat, meat substitutes, and other protein-rich foods,” *Food Quality and Preference*, vol. 97, p. 104486, 2021.
- [6] J. Gelski, “Eliminating the pea flavour in pea protein,” in *Food business news*, 2018.
- [7] Bechtold et al., European Consumer Survey on Plant-Based Foods. Describing the product landscape and uncovering priorities for product development and improvement. Proveg International, 2020.
- [8] A. Lockwood, Vegan meat price parity: why cost not kindness will end animal agriculture. *Plant Based News*, 2021.
- [9] World Business Council for Sustainable Development, “Plant proteins: a key lever to accelerate food system transformation,” 2020.
- [10] K. Szejda and P. James, Strategies to accelerate consumer adoption of plant-based meat. Recommendations from a comprehensive literature review. The Good Food Institute, 2020.
- [11] Specht et al., Advancing solutions for alternative proteins project report: a systemic analysis of the plant protein fermentation, and cultivated meat industries. The Good Food Institute, 2020.
- [12] R. Tso, A. J. Lim, and C. G. Forde, “A critical appraisal of the evidence supporting consumer motivations for alternative proteins,” *Foods*, vol. 9, no. 9, p. 1182, 2020.
- [13] X. Dong, Y. Wang, and S. Liu, “Consumer acceptance of alternative proteins: A systematic review,” *Trends in Food Science and Technology*, vol. 143, pp. 274–284, 2024.
- [14] B. Wansink and E. van Kleef, “Habitual eating and its implications for interventions,” *Appetite*, vol. 168, p. 105788, 2025.
- [15] J. Sobal and C. A. Bisogni, “Constructing food choice decisions,” *Annals of Behavioural Medicine*, vol. 54, no. 8, pp. 587–601, 2020.
- [16] A. Xhelili, “LIKE-A-PRO’s food environment citizen innovation living labs. Governance framework,” LIKE-A-PRO project. Wuppertal, 2024.
- [17] A. Xhelili and M. Nicolau, From intention to action: multi-stakeholder recommendations for making sustainable food consumption a reality. Wuppertal, 2021. doi: 10.5281/zenodo.5337036.
- [18] Michie et al., “The behaviour change wheel: a new method for characterizing and designing behaviour change interventions,” *Implementation Science*, vol. 6, p. 42, 2011, doi: 10.1186/1748-5908-6-42.
- [19] T. Soofi, “The effectiveness of positive reinforcement in reducing individual food waste in a high school cafeteria,” *Journal of Student Research*, vol. 11, no. 2, 2022, doi: 10.47611/jsrhs.v11i2.3383.
- [20] R. H. Thaler, *Misbehaving: The making of behavioral economics*. W. W. Norton and Company, 2016.
- [21] D. Kahneman, *Thinking, fast and slow*. Straus and Giroux: Farrar, 2011.
- [22] Z. B. Ramadan and R. Eid, “Nudging food waste reduction through digital reinforcement: An experimental approach,” *Journal of Social Marketing*, 2023, doi: 10.1108/JSOCM-02-2023-0025.
- [23] W. Young, S. V. Russell, C. A. Robinson, and R. Barkemeyer, “Can social media be a tool for reduc-

- ing consumers' food waste? A behavior change experiment by a UK retailer," *Resources, Conservation and Recycling*, vol. 117, pp. 195–203, 2017, doi: 10.1016/j.resconrec.2016.10.016.
- [24] B. Liu, C. Wang, L. Zhao, and D. Chen, "The effectiveness of behavioral interventions on household food waste reduction: A meta-analysis," *Environmental Research Letters*, vol. 17, no. 6, p. 064021, 2022, doi: 10.1088/1748-9326/ac72b6.
- [25] S. V. Russell, C. W. Young, K. L. Unsworth, and C. Robinson, "Bringing habits and emotions into food waste behavior," *Resources, Conservation and Recycling*, vol. 125, pp. 107–114, 2017.
- [26] E. J. Johnson et al., "Choice architecture: Designing the decision environment," *Journal of Consumer Psychology*, vol. 22, no. 3, pp. 398–405, 2012, doi: 10.1016/j.jcps.2011.08.002.
- [27] S. Kallbekken and H. Sælen, "Nudging hotel guests to reduce food waste as a win-win environmental measure," *Economics Letters*, vol. 119, no. 3, pp. 325–327, 2013, doi: 10.1016/j.econlet.2013.03.019.
- [28] S. Stöckli, E. Niklaus, and M. Dorn, "Call for testing interventions to reduce food waste: A systematic review and meta-analysis," *Sustainability*, vol. 13, no. 19, p. 11099, 2021, doi: 10.3390/su131911099.
- [29] R. B. Cialdini, L. J. Demaine, B. J. Sagarin, D. W. Barrett, K. Rhoads, and P. L. Winter, "Managing social norms for persuasive impact," *Social Influence*, vol. 1, no. 1, pp. 3–15, 2006, doi: 10.1080/15534510500181459.
- [30] B. Verplanken and W. Wood, "Interventions to break and create consumer habits," *Journal of Public Policy and Marketing*, vol. 25, no. 1, pp. 90–103, 2006, doi: 10.1509/jppm.25.1.90.
- [31] K. J. Whitehair, C. W. Shanklin, and L. A. Brannon, "Written messages improve edible food waste behaviors in a university dining facility," *Journal of the Academy of Nutrition and Dietetics*, vol. 113, no. 1, pp. 63–69, 2013, doi: 10.1016/j.jand.2012.09.015.
- [32] M. D. P. Floriano and J. M. Rodrigues, "The role of emotions in reducing food waste," *RAE-Revista de Administração de Empresas*, vol. 63, no. 1, pp. e2022-0123, 2023.
- [33] V. Stancu and L. Lähteenmäki, "Motivating household food waste reduction: Harnessing the power of behavioral insights," *Food Quality and Preference*, vol. 99, p. 104545, 2022, doi: 10.1016/j.foodqual.2022.104545.
- [34] V. C. S. Yeo and J. Y. Lee, "Emotional and cognitive pathways to food waste reduction: The moderating role of altruism," *Sustainability*, vol. 14, no. 22, p. 15012, 2022.
- [35] H.-T. Chen and M. DeSalvo, "The effect of message framing and focus on reducing food waste," *Journal of Environmental Psychology*, vol. 75, p. 101608, 2021, doi: 10.1016/j.jenvp.2021.101608.
- [36] A. Xhelili, J. Wiegard, and J. Schüürmann, "LIKE-A-PRO's Living Labs. Consumer Insights Dataset.," LIKE-A-PRO project., Wuppertal, 2025.
- [37] W. Willett et al., "Food in the Anthropocene: the EAT–Lancet Commission on healthy diets from sustainable food systems," *The Lancet*, vol. 393, no. 10170, pp. 447–492, 2019, doi: 10.1016/S0140-6736(18)31788-4.
- [38] T. Garnett, *Changing what we eat: A call for research and action on widespread adoption of sustainable healthy eating*. Food Climate Research Network, 2014.
- [39] S. Smetana, A. Mathys, A. Knoch, and V. Heinz, "Meat alternatives: life cycle assessment of most known meat substitutes," *The International Journal of Life Cycle Assessment*, vol. 20, pp. 1254–1267, 2015, doi: 10.1007/s11367-015-0931-6.
- [40] C. A. Roberto and I. Kawachi, *Behavioral economics and public health*. Oxford University Press, 2014.
- [41] B. A. Swinburn et al., "Strengthening of accountability systems to create healthy food environments and reduce global obesity," *The Lancet*, vol. 385, no. 9986, pp. 2534–2545, 2015, doi: 10.1016/S0140-6736(14)61747-5.
- [42] R. H. Thaler and C. R. Sunstein, *Nudge: Improving decisions about health, wealth, and happiness*. Yale University Press, 2008.

- [43] T. M. Marteau, G. J. Hollands, and P. C. Fletcher, "Changing human behavior to prevent disease: The importance of targeting automatic processes," *Science*, vol. 337, no. 6101, pp. 1492–1495, 2012, doi: 10.1126/science.1226918.
- [44] R. H. Thaler and C. R. Sunstein, "Libertarian paternalism," *American Economic Review*, vol. 93, no. 2, pp. 175–179, 2003, doi: 10.1257/000282803321947001.
- [45] G. J. Hollands et al., "The TIPPME intervention typology for changing environments to change behaviour," *Nature Human Behaviour*, vol. 1, p. 0140, 2015, doi: 10.1038/s41562-017-0140.
- [46] R. Cadario and P. Chandon, "Which healthy eating nudges work best? A meta-analysis of field experiments," *Marketing Science*, vol. 39, no. 3, pp. 465–486, 2020, doi: 10.1287/mksc.2018.1128.
- [47] F. M. Kroese, D. R. Marchiori, and D. T. de Ridder, "Nudging healthy food choices: a field experiment at the train station," *Journal of Public Health*, vol. 38, no. 2, pp. e133–e137, 2016, doi: 10.1093/pubmed/fdv096.
- [48] M. Springmann, H. C. J. Godfray, M. Rayner, and P. Scarborough, "Analysis and valuation of the health and climate change cobenefits of dietary change," *Proceedings of the National Academy of Sciences*, vol. 113, no. 15, pp. 4146–4151, 2016, doi: 10.1073/pnas.1523119113.
- [49] A. C. Hoek, P. A. Luning, P. Weijzen, W. Engels, F. J. Kok, and C. De Graaf, "Replacement of meat by meat substitutes. A survey on person-and product-related factors in consumer acceptance," *Appetite*, vol. 56, no. 3, pp. 662–673, 2011, doi: 10.1016/j.appet.2011.02.001.
- [50] M. Siegrist and C. Hartmann, "Impact of sustainability perception on consumption of organic meat and meat substitutes," *Appetite*, vol. 132, pp. 196–202, 2019, doi: 10.1016/j.appet.2018.09.016.
- [51] J. Cade, R. Thompson, V. Burley, and D. Warm, "Development, validation and utilisation of food-frequency questionnaires—a review," *Public Health Nutrition*, vol. 5, no. 4, pp. 567–587, 2002, doi: 10.1079/PHN2001318.
- [52] A. Szczybyło, E. Halicka, K. Rejman, and J. Kaczorowska, "Is eating less meat possible? Exploring the willingness to reduce meat consumption among millennials working in polish cities," *Foods*, vol. 11, no. 3, p. 358, 2022, doi: 10.3390/foods11030358.
- [53] L. Malek, W. J. Umberger, and E. Goddard, "Committed vs. uncommitted meat eaters: Understanding willingness to change protein consumption," *Appetite*, vol. 138, pp. 115–126, 2019, doi: 10.1016/j.appet.2019.03.024.
- [54] K. Henn, S. B. Olsen, H. Goddyn, and W. L. Bredie, "Willingness to replace animal-based products with pulses among consumers in different European countries," *Food Research International*, vol. 157, p. 111403, 2022, doi: 10.1016/j.foodres.2022.111403.
- [55] C. Kavvouris, P. Chrysochou, and J. Thøgersen, "'Be careful what you say': The role of psychological reactance on the impact of pro-environmental normative appeals," *Journal of Business Research*, vol. 113, pp. 257–265, 2020, doi: 10.1016/j.jbusres.2019.10.018.
- [56] J. P. Dillard and L. Shen, "On the nature of reactance and its role in persuasive health communication," *Communication Monographs*, vol. 72, no. 2, pp. 144–168, 2005, doi: 10.1080/03637750500111815.
- [57] S. Yang and J. K. Kruschke, "Reactance to persuasive messages depends on felt obligation," *Communication Research*, vol. 52, no. 5, pp. 649–682, 2025, doi: 10.1177/00936502241253302.
- [58] H. Ball and H. K. Goodboy, "An experimental investigation of the antecedents and consequences of psychological reactance in the college classroom," *Communication Education*, vol. 63, no. 3, pp. 192–209, 2014, doi: <https://doi.org/10.1080/03634523.2014.918634>.
- [59] C. Chang, "A metacognitive model of the effects of susceptibility to persuasion self-beliefs on advertising effects," *Journal of Advertising*, vol. 46, no. 4, pp. 487–502, 2017, doi: 10.1080/00913367.2017.1392911.
- [60] J. P. Dillard, K. M. Weber, and R. G. Vail, "The relationship between the perceived and actual effectiveness of persuasive messages: A meta-analysis with implications for formative campaign research," *Journal of Communication*, vol. 57, no. 4, pp. 613–631, 2007, doi: 10.1111/j.1460-2466.2007.00360.x.

