SOCIAL MARKETING PLAN

MEDDiET4Campus Project (2023-2026)

MEDDiET

- MENUS 4 CAMPUS -

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Index

Conteúdo

1 FRAMEWORK

MEDDIET
- MENUS 4 CAMPUS -

1. FRAMEWORK

1.1. Introduction

The Mediterranean diet (MD) is increasingly recognized not only for its significant health benefits but also for its potential to support long-term sustainability goals, contributing positively to the achievement of the Sustainable Development Goals (Medori et al., 2023). Understanding the key determinants of adherence to the MD in the 21st century has thus become critical, particularly in the context of economic instability, where targeted public health strategies are essential to address the growing burden of chronic disease (Ruggiero et al., 2019) . Although fiscal policies, regulatory measures, and awareness campaigns, including the influence of social media on perceptions of diet, health, and climate change, may shape MD adherence, empirical evidence on the impact of such contextual factors remains limited (Alves & Perelman, 2022). Moreover, consumer choices also affect sustainability through preferences for locally sourced and sustainably produced food (Grosso, 2018). However, adherence to the MD is declining, especially among younger populations, despite its well-documented benefits, a trend that poses a serious public health concern (Kyriacou et al., 2015).

1.2. Mediterranean Diet in HEIs' Food Offerings

The importance of stronger food environments in HEIs becomes particularly evident when considering the scale of European food services, which produce an estimated 165 million meals daily (Food Service Europe, 2022). Therefore, this sector constitutes an important setting for public health interventions, potentially educating consumers and modulating behaviours through the meals provided. The few studies found regarding food service offers in canteens from HEIs (Aires et al., 2021; Food Service Europe, 2022) have characterized these meals as unbalanced, high in calories, fat, saturated fat, salt, sugars, meat and processed meat, supplying low quantities of vegetables, whole-grains, fruit, nuts, pulses and olive oil, presenting a pattern drifting away from the Mediterranean diet (Šatalić et al., 2004; Tayhan & Helvacı, 2025).

Moreover, university students, in their transition to adulthood, experience lifestyle

changes influenced by several factors that shape decision-making: distance from family, shifts in routines and schedules, new environments, and greater independence and autonomy, particularly in eating behaviours. In the first year of higher education, there is a tendency to gain weight (the freshman five phenomenon) and increased prevalence of overweight and obesity, which are related to increased risk of chronic noncommunicable diseases (Vadeboncoeur et al., 2015). As with the general population (Baydemir et al., 2018), college students' adherence to Mediterranean Diet is far from ideal. For instance, a cross-sectional study including over 6200 students in eight countries, found that the highest Mediterranean diet score was recorded in Spain, followed by Italy, whereas the lowest was found in Turkey, followed by Croatia (Cena et al., 2021).

A recent study including nutrition and dietetic students in a Turkish university (Madencioğlu & Yücecan, 2022) found that adherence was poor for 31% and moderate for 69% of the students, and it tended to decrease towards their final year at university. A similar pattern was found for Portuguese students with only 12.5% showing high adherence to the Mediterranean Diet (Ferreira-Pêgo et al., 2019). Another aspect of prior research about eating habits on campus is that it has mainly focused on a single stakeholder, typically the students, and on a narrow set of outcome variables, such as satisfaction with or gender (Colić Barić et al., 2003). These studies provide important clues about the determinants of adherence to canteen food offer, namely, lack of time as a main barrier to healthy eating habits, or lack of cooking skills (Vélez-Toral et al., 2020). Still, to the best of our knowledge, research has yet to address this issue using an integrative approach of multiple stakeholders (e.g., the students, the food providers, deciders) across a set of individual and contextual variables. One of the strategies, empirically verified, designed to promote change behavior, within such an integrative approach, is Social Marketing. Its contributions to the health and well-being of citizens are positively recognized by many entities in the health system (Carvalho & Mazzon, 2015; Lefebvre, 2013; Sturzaker, 2023; Vélez-Toral et al., 2020).

1.3. The Social Marketing framework and the Stakeholder Engagement Model

The social marketing offers a strategic framework for understanding how to promote behavioral change to advance public health (Azzari et al., 2024). It is concerned with the preferences and needs of a given target audience to better design interventions aligned with the satisfaction of such needs. In the specific context of public health interventions towards healthier dietary habits, this framework has been particularly useful (Alsharairi & Li, 2024; Carins & Rundle-Thiele, 2023; Doustmohammadian & Bazhan, 2021). It also seeks to develop and integrate marketing concepts with other approaches to influence behaviors that benefit individuals and communities for the greater social good. Social Marketing practice, in particular, integrates research, best practice, theory, audience and partnership insights, to inform the delivery of competition-sensitive and segmented social change programs that are effective, efficient, equitable and sustainable (Domegan, 2021; European Social Marketing Association, 2024).

According to Domegan (2021), social marketing strategists recognize that engaging 'with' individuals, rather than acting 'for' them or 'on their behalf', to stimulate long-lasting behavioral changes, demands a deeper appreciation of the behavioral, cultural, and social and infrastructural issues that shape decisions around consumption and production. This approach does not expect mass behavioral change from the targeted population in a "one-size-fits-all" manner, as if one social marketing campaign could serve all purposes.

There are seven key considerations for social marketing programs in public health (Donovan, 2011, French, 2017): (i) fit the social marketing model to the program objectives and country context; (ii) ensure coordination among key players for effective market segmentation; (iii) conduct research to ensure appropriate social marketing program design and implementation; (iv) use the power of social marketing to introduce and scale up access to the product (benefits); (v) invest in behavior change communication; and (vi) plan for sustainability since the beginning. Therefore, a well-planned social marketing campaign requires studies around the outside and inside environments, market research, behavior change goals, and an integrated marketing mix to encourage the target audience to change their behaviour in favour of health and well-being.

Establishing and managing long-term partnerships that include different groups of stakeholders, namely consumers, governments, non-governmental organizations, retailers and

other players, are key elements in the application of mid and upstream social marketing to complex issues, particularly in the implementation and evaluation stages. On one hand, engaging stakeholders during the goal-setting stage can expand measures of program efficiency, value creation, sustainability, policy implementation and awareness. On the other hand, feedback from stakeholder groups with differing levels and types of investment in the project communicates a valuable understanding of the program and offers a "behind-the-scenes" perspective on the program's impact and effectiveness during pilot implementation, with areas identified for future expansion (Hodgkins et al., 2019).

Hence, stakeholder engagement reminds social marketing practitioners and researchers about the importance of involving different actors, beyond consumers, who are also affected by the behavior. When not involved at the outset of the design and planning process, some stakeholders may serve as a barrier to designed offerings. Hence, a successful program identifies which stakeholders to prioritize and how to manage complex relationships between multiple stakeholders involved in the delivery of social marketing interventions (Hodgkins et al., 2019). It is also important to note that previous literature is limited in systematically identifying and encouraging stakeholder participation in social marketing systems (McHugh et al., 2018). A wide range of stakeholders is essential to achieving a collaborative social marketing systems change agenda, particularly when addressing wicked, common, or sustainability-related problems. As the authors clearly state "research is interactive; it is 'with' and not 'on' priority groups and audiences" (McHugh et al., 2018). Hence, an in-depth understanding of which stakeholders need to be involved and at what stage of the social marketing process may yield insights into why some interventions change behavior and why others do not. Limited stakeholder involvement in the design of social marketing interventions reduces the potential of the program, while intense engagement leads to high-quality decision-making (Buyucek et al., 2016). Building on these conceptual foundations and research goals, the next section describes the methodological design employed to collect and analyze data across the three HEI contexts.

1.4. Strategic goals of the program

From a Social Marketing perspective, the ultimate aim of the programme is to achieve measurable behaviour change among key stakeholders within the university food environment. Accordingly, two complementary strategic objectives were defined, each aligned with a specific target audience and corresponding behavioural outcome (Table 1). This dual approach reflects the recognition that sustainable dietary change requires both supportive food environments and motivated consumers, ensuring alignment between supply and demand within the campus setting.

Objectives	Target audiences
Increase of offer and availability of Mediterranean Diet (MD) menus within university canteens, targeting food service providers as key agents of environmental change	Canteens
Increase the consumption of MD options, namely canteen meals and student meal solutions, among higher education students, addressing individual-level behaviour	HE students

Table 1: Strategic goals of the programme

1.5. Social Marketing Framework

The Social Marketing Plan project followed a structured, evidence-based approach grounded in Social Marketing principles and informed by both behavioural and contextual determinants of food choice. The overall framework illustrated reflects a sequential and iterative process comprising stakeholder engagement, situational diagnosis, and the implementation phase. Operationally, it was organised into three main phases (Figure 1).

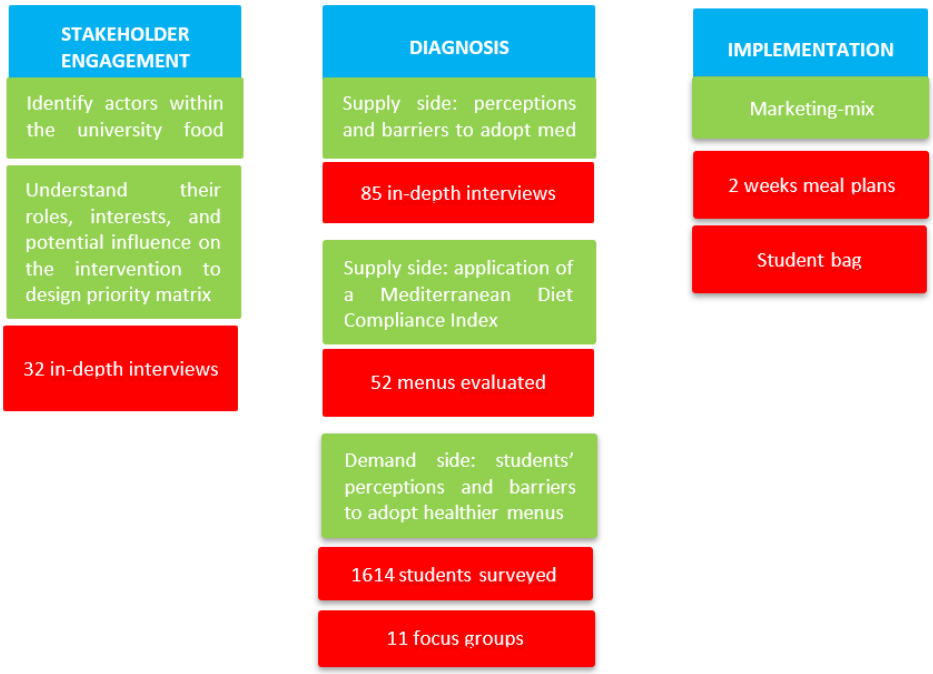


Figure 2: Social Marketing Plan Framework

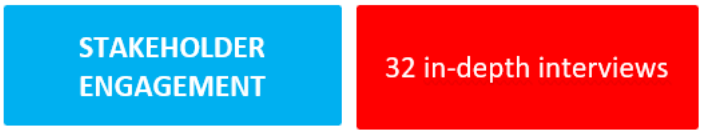
2 METHODOLOGY

MEDDIET
- MENUS 4 CAMPUS -

2.METHODOLOGY

Primary and secondary data were collected in each country, with different but complementary goals. Firstly, a large set of secondary data was retrieved to provide a national characterization of the food/nutrition policies in higher education in Portugal, Turkey and Croatia. This stage enabled the collection of data concerning the main characteristics of national policies, the identification of the responsible bodies, and their respective targets. Additionally, it was also necessary to collect data to retrieve information about: the number of universities under intervention, the number of students, food services in canteens and other facilities such as cafes, restaurants, vending machines inside campus, as well as other offers outside campus but closely distant (daily offers, prices, menus). Secondary data were analyzed using structured document review procedures. Policy documents and institutional information were examined to extract relevant information aligned with the study objectives, including regulatory frameworks, responsible bodies, policy targets, and characteristics of the higher education food environment. Findings were synthesized narratively to produce a national characterization for each country.

Stage 1:



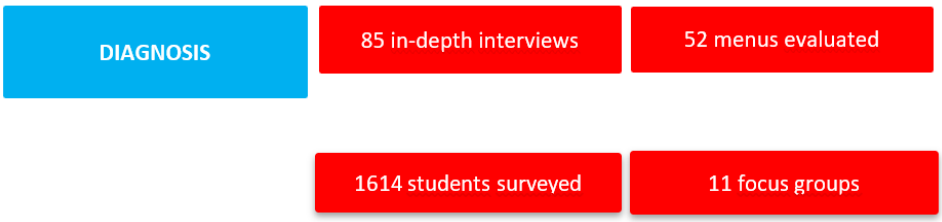
The process began with extensive stakeholder engagement activities, including exploratory interviews with different stakeholders. This phase aimed to identify key actors within the university food system and to understand their roles, interests, and potential influence on the intervention.

Primary data included a total of 32 exploratory interviews to the defined list of stakeholders (12 in Croatia, 12 in Turkey and 8 in Portugal, see interview guide in appendices), including the main topics: i) Identification of key stakeholders relevant to the research goals and assessment of their relative importance; ii) Opinion regarding higher education students' food habits in their country; iii) Opinion concerning the food offered in HEIs canteens; iv) Ranking the influence of each stakeholder on students' food habits in the university context or on the offer in canteens from 1 (low influence) to 3 (high influence). Stakeholders with higher influence can significantly impact the project operations, reputation, and long-term success; v) Ranking of the degree to which the success of achieving the goals

relies on its stakeholder from 1 (low dependence) to 3 (high dependence). It considers how much the project depends on the stakeholder's resources, support, or engagement to achieve its goals and objectives.

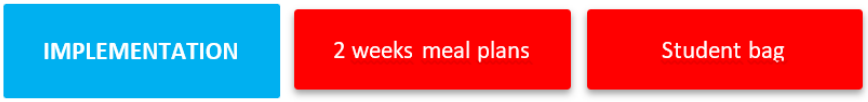
Interview notes/transcripts were reviewed and systematically summarized within these domains for each country. Rather than applying formal coding procedures, responses were organized into analytic matrices to identify recurring patterns, convergence and divergence across stakeholders, and country-specific contextual factors relevant to intervention planning. The integration of document review findings and structured interview synthesis enabled triangulation of data sources and supported the development of context-sensitive priority matrices and engagement strategies.

Stage 2:



Building on the data collection from stage 1, a comprehensive diagnosis was conducted, addressing both the supply side (canteens and food service providers) and the demand side (students). This included in-depth interviews with stakeholders, large-scale student surveys and focus groups, and the evaluation of existing menus. It also implied the development and application of a Mediterranean Diet Compliance Index to assess the alignment of university menus with MD principles, as well as the evaluation of their environmental impact, including water and carbon footprints. This phase implied stakeholder analysis and the assessment of students' perceptions, behaviours, and barriers to adopting healthier dietary patterns.

Stage 3:



The third phase focused on the development of the implementation and evaluation of the marketing-

mix strategy, translating insights from the diagnosis into concrete intervention components. This included the design of new Mediterranean Diet-compliant menu plans and the creation of innovative food solutions, such as the “Student Bag”, a convenient and portable meal aligned with MD principles.

3.DIAGNOSIS

MEDDIET

- MENUS 4 CAMPUS -

3.DIAGNOSIS

3.1. INTERNAL ANALYSIS

3.1.1. Project Overview and Internal Structure

The MedDietMenus4Campus project, implemented across Portugal, Turkey, and Croatia, uses public higher education institution (HEI) canteens as a strategic setting to promote stakeholder adherence to the Mediterranean Diet through menu interventions and social marketing strategies.

The primary objective of this social marketing plan is to promote behavioural change in relation to food provision and food choices, fostering the adoption and acceptance of the principles of the Mediterranean Diet. Public higher education canteens represent a particularly relevant setting for such interventions, as they provide a unique opportunity to shape eating behaviours among students and other key stakeholders through the daily food environment. In line with the principles of the Mediterranean Diet, the project seeks to support the gradual alignment of canteen menus by increasing the availability of plant-based, seasonal, locally sourced, and minimally processed foods, while reducing the provision of red and processed meats, foods high in added sugars, and excessive salt. To achieve these behavioural and environmental changes, the social marketing plan is structured around three complementary objectives: (1) evaluating the current food offer in participating canteens; (2) identifying the barriers, facilitators, and perceptions influencing the adoption of Mediterranean Diet principles among relevant stakeholders; and (3) co-developing evidence-based tools and strategies to improve both the nutritional and environmental quality of meals served.

Internally, the project is structured around a consortium of seven institutions from the three countries, combining expertise in nutrition and dietetics, psychology, marketing, food technology, and sustainability. The coordination is led by FCNAUP (University of Porto) and partners are involved in the work packages according to their area of specialization, ensuring that research, implementation, and evaluation are conducted with rigour and cultural sensitivity.

Figures 2–4 outline the project's mission, aim, and long-term vision. The mission focuses on promoting adherence to the Mediterranean Diet in higher education through Social Marketing (Fig

2). The broader aim centres on identifying and addressing priority areas to support healthier and more sustainable eating habits through stakeholder engagement (Fig 3). The long-term vision extends beyond the immediate context, seeking to drive systemic change in food service environments by developing a scalable and transferable model adaptable to diverse institutional and geographical settings (Fig 4).

Figure 2: MedDiet4Campus Mission

Figure 3: MedDiet4Campus Aim

Figure 4: MedDiet4Campus Vision

In addition to its health objectives, the project aligns with key Sustainable Development Goals (SDGs), namely SDG 3 (Good Health and Well-being), SDG 12 (Responsible Consumption and Production), and SDG 17 (Partnerships for the Goals), reinforcing its integrated approach to behavioural and systemic change.

The project is organised into six interrelated work packages, each addressing a specific stage of the intervention, from the development of a Mediterranean Diet Menu Index to the creation of communication materials and evaluation tools (Fig. 5).

Figure 5 Work Packages of the programme

The following sections briefly describe the objectives and activities of each work package.

3.1.2. Project Work Packages

WP1 – Menu Mediterranean Index and Characterisation

The primary objective is to develop and validate a Mediterranean Diet Menu Index (MDMI) tailored to assess the alignment of university canteen menus with Mediterranean Diet (MD) principles. Focusing on a systematic literature review and existing menu evaluation, the project team constructs a system based on food categories, preparation methods, and sustainability indicators. This WP also involves applying this index to menus from at least 30 public higher education institutions across the three participating countries and the outcomes provide a scientific diagnostic of the current food offer, and serves as the baseline for subsequent interventions.

WP2 – Stakeholder Engagement and Evaluation of Perceptions, Barriers and Determinants

This work package was focused on identifying perceptions, barriers, and determinants among key stakeholders regarding the current food offer and its alignment with the MD. The first task involves the development of a stakeholder engagement model, in the AA1000 framework. With interviews with institutional actors and service providers, the team identifies priority stakeholders and defines methodologies for their engagement in the different phases of the

project. This is followed by a evaluation of current and potential consumers perceptions and behaviours, with a self-administered surveys, complemented by in-depth interviews with food service companies and HEIs. The final task analyses the influence of individual differences, like gender, education level, interest in nutrition, attitudes, and knowledge about the MD, on perceptions and behavioural intentions. The results of this section are used in the segmentation of target groups and in the design strategies.

WP3 – New Food Service Models and Concepts

WP3 is dedicated to the design and development of new food service models based on Mediterranean Diet principles. The first task is the elaboration of a two-week menu plan based on a framework that integrates nutritional adequacy, food sustainability, cultural adaptation, budget constraints, and operational feasibility. This process includes recipe development, testing, and the elaboration of technical specifications for each dish, like their nutritional profile, allergens, environmental impact, and price. A second core component is the development of the "Student Bag", which is a convenient and portable meal aligned with MD concepts. FFTB coordinates this task through a co-creation approach involving student focus groups and consultation of experts and this task includes the definition of contents to each country, the product development, and the assessment of an industrial scale and pricing.

WP4 – Social Marketing Strategy

This WP if composed of three major tasks: Development of social marketing strategies directed to stakeholders and consumers to achieve food behaviour change; adaptation of the framework for each of the participating countries, both for food culture and ingredients accessibility; development of tools concerning the concept premises and empower the catering employees and consumers to understand the methodology and accept the change in the daily routine.

WP5 – Implementation and Evaluation

This working packaging is crucial to measure the success or unsuccess of the program, as well as the social marketing plan. Its main objective is to measure the impacts of the implemented strategies in three case studies Portugal, Turkey, and Croatia.

WP6 – Monitoring and Management

The implementation of these work packages was supported by a comprehensive management structure that ensures effective coordination across the consortium. Internal communication is maintained through regular virtual meetings and shared responsibilities among project partners, while the management plan includes progress reporting, monitoring of outputs and milestones, and guidance from an advisory committee responsible for supporting scientific and strategic decision-making.

3.2. EXTERNAL ANALYSIS

The external analysis helps identify opportunities and challenges that may affect the intervention's effectiveness and informs the development of strategies that are audience-centred, contextually relevant of achieving behavioural change.

3.2.1. Macro-environmental analysis

Portugal, Turkey, and Croatia present distinct macro-environmental profiles that can influence the implementation of the MedDietMenus4Campus project. Demographically, Portugal experienced a positive population change between 2022 and 2024 (+1.10%), reflecting short-term demographic growth likely driven by immigration flows. In 2023, the country recorded a positive net migration of 9,999 individuals (World Bank, n.d.-b). However, despite this recent growth, long-term forecasts predict a population decline, with the total population expected to decrease to 9.1 million by 2050 (Público, 2016). Also, life expectancy in Portugal is among the highest of the three countries, reaching 81.6 years in 2019 and projected to rise to 82.5 years for men and 87.4 years for women by 2050 (World Health Organization, n.d.; University of Coimbra, n.d.).

In contrast, Turkey, with its significantly larger population base of 85.37 million in 2024, shows a modest but positive population growth (+0.41%) (Turkish Statistical Institute, 2024; World Bank, n.d.-c), although this trend is accompanied by substantial negative net migration (-318,067 in 2023) (World Bank, n.d.-d). Life expectancy in Turkey was 78.6 years in 2019 and is expected to increase to 81.5 years for men and 85.8 years for women by 2050 (World Health Organization, n.d.; United Nations Economic and Social Commission for Asia and the Pacific, 2024).

Croatia, on the other hand, presents the most concerning demographic indicators. It had a negative population change between 2022 and 2024 (-0.06%) and a net migration of -2,000 in 2023 (World Bank, n.d.-e). Its population is also expected to decrease, reaching 3.46 million by 2050 (World Population Review, n.d.). Nonetheless, life expectancy is projected to improve, from 78.6 years in 2019 to 81.7 years for men and 85.7 years for women in 2050 (World Health Organization, n.d.; United Nations, 2024).

The economic context is equally varied. Croatia and Turkey are projected to experience stronger GDP growth in 2024 (3.3% and 3.1%, respectively) compared to Portugal (1.7%)

(European Commission, 2025a; European Commission, 2025b; International Monetary Fund, n.d.). However, Turkey faces extreme food inflation that can undermine purchasing power. While Portugal and Croatia report moderate food inflation rates, Turkey's food inflation reaches 48.57% (Trading Economics, n.d.-a). General inflation doesn't follow the same pattern: 2.3% in Portugal, 3.5% in Croatia, and 0.43% in Turkey (European Commission, 2025a; European Commission, 2025b; BBVA, 2024). In terms of average monthly salary, Turkey has an estimated 7,240 TRY (approximately 192 euros), compared to 1,361 euros in Portugal and 1,190 euros in Croatia (Mateus & Esteves, 2024; Trading Economics, n.d.-b; Trading Economics, n.d.-c).

Unemployment rates also vary, with Croatia holding the lowest rate at 5.8%, followed by Portugal at 6.5%, and Turkey at 9.1% (European Commission, 2025a; European Commission, 2025b; Turkish Statistical Institute, 2024). Public debt levels show Portugal with the highest public debt at 95.6% of GDP, followed by Croatia at 59.5%, and Turkey with the lowest at 30.9% (European Commission, 2025a; European Commission, 2025b; International Monetary Fund, n.d.).

Portugal's and Croatia's higher salary levels and moderate inflation can create a more stable environment for implementing food service strategies aligned with the Mediterranean diet. These indicators underscore the need for cost-sensitive approaches and robust subsidy frameworks to promote healthy and sustainable eating habits across different national contexts.

Sociocultural indicators further underscore relevant differences. Obesity prevalence among young adults is highest in Turkey, closely followed by Croatia, with Portugal presenting slightly lower rates (Eurostat, n.d.-a). This trend is concerning given the project's focus on university students and reinforces the need for targeted interventions. Urbanization levels and household size are highest in Turkey, which may influence consumption patterns and social eating behaviours (Trading Economics, n.d.-c; Esri, 2021). Consumption of vegetables and fruits, a core component of the Mediterranean diet, varies across the three countries. Daily vegetable consumption is highest in Croatia, with 62% of the population reporting eating vegetables at least once a day, followed by Turkey at 57%, and Portugal at 42%. In terms of fruit consumption, Portugal leads with 68% of the population consuming fruit daily, while Croatia follows with 60%, and Turkey with 48% (Eurostat, n.d.-b).

These consumption habits are mirrored by the population's self-perceptions of health. In Croatia, 16.9% of individuals consider their health to be bad or very bad, the highest among the three countries. Portugal follows with 15.2%, and Turkey reports the lowest proportion, at 10.7%

(Eurostat, n.d.-c). This contrast between actual consumption of healthy foods and health perceptions suggests the socio-cultural environment may influence how individuals assess their well-being.

The political and legal landscapes reveal varying degrees of maturity in food policy frameworks. Portugal has developed several intersectoral strategies promoting healthy eating, such as the National Programme for the Promotion of Healthy Eating (PNPAS) and the Integrated Strategy for the Promotion of Healthy Eating (EIPAS). These initiatives are supported by legislation mandating vegetarian options in public canteens and by nutritional excellence certifications for higher education food services. Croatia, on the other hand, operates under a centralized regulatory framework that defines financial support for student meals and service provider responsibilities. Turkey supports students through meal subsidies, quality control measures, and nutrition labeling regulations. The introduction of a special consumption tax on sweetened beverages demonstrates Turkey's commitment to public health through fiscal tools. While all three countries exhibit regulatory efforts, the degree of policy enforcement and cultural receptivity can affect the extent to which the Mediterranean diet can be integrated into institutions.

In sum, the macro-environmental landscape across Portugal, Turkey, and Croatia presents a heterogeneous but manageable context for the MedDietMenus4Campus project. Portugal emerges as a contextually favourable environment due to its progressive policies and economic stability. Croatia offers strong legal structures and culturally aligned dietary habits, while Turkey presents challenges rooted in inflation and socio-economic disparities but mitigated by a robust public health policies and institutional support. These contextual dynamics show the importance of tailoring intervention strategies to local realities and making full use of the project's stakeholder-centered and adaptable framework to ensure adaptability and long-term sustainability in the three countries.

3.2.2. National food and nutrition policies

One of the first tasks that proved to be decisive to kick-off the social marketing plan was the characterization of the national contexts of food and nutrition policies. Table 1 provides a summary of Portugal, Croatia and Turkey contexts.

Country	National characterization of food/nutrition policies per Country
Portugal	In the context of Portuguese higher education, specific food policy legislation is absent. However, broader regulatory recommendations, such as the *Estratégia Integrada de Promoção da Alimentação Saudável* (EIPAS), standing for Integrated Healthy Eating Promotion Strategy, are applicable. EIPAS, a collaborative effort among various ministries and the General Directorate of Health, seeks to encourage healthy eating habits and improve nutritional health, contributing to chronic disease prevention (Direção Geral da Saúde, 2020). The *Programa Nacional de Promoção da Alimentação Saudável* (PNPAS), standing for National Healthy Eating Promotion Program, partnering with EIPAS, launched the *Selo de Excelência Alimentação Saudável no Ensino Superior* initiative, that is Healthy Eating Excellence stamp in Higher Education. This initiative acknowledges universities that promote nutritional well-being by revising their food services and fostering nutritional awareness within the academic sphere (Direção Geral da Saúde, 2019). Additionally, PNPAS has set forth guidelines for university residence food services, aiming to refine dietary habits through educational efforts, infrastructure enhancement, and food service regulation. Finally, the *Federação Académica do Porto* (FAP), standing for Porto Academic Federation, and the Directorate-General of Health have partnered to promote health within universities. Their joint framework recommends the adoption of health-centric strategies, such as formulating inclusive and accessible policies within Social Action Services and creating health-supportive environments in student living spaces, dining facilities, and other areas.
Croatia	The cornerstone of Croatian student nutrition policy is the "Regulation on subsidizing the costs of student nutrition" (Pravilnik o uvjetima i načinu ostvarivanja prava na pokriće troškova prehrane studenata, NN, 120/2013; 8/2014,113/2022, 37/2023). This regulation outlines the criteria for receiving financial assistance from the Ministry, details the conditions for providing nutrition services, and stipulates the responsibilities of service providers. Central to the regulation is the establishment of the National Commission for the Control of Student Nutrition and Local Commissions for the Control of Student Nutrition, responsible for overseeing the implementation of measures and services. The National Commission, comprising five members including student representatives, draws up a list of approved dishes and products for student restaurants, restricting offerings to items on the list. Thirteen Student Centers across Croatia, including one in Zagreb, administer student meals, each forming a local commission to monitor services. Under the current regulation, students receive a subsidy of 71.24% for daily menus and 50% for other products. Despite widespread interest in updating the regulation, no changes have been made since its issuance in 2013. Efforts to revise the regulation have been ongoing, with proposals to separate norms and dishes and significantly expand the number of approved dishes, particularly with input from coastal universities advocating for more Mediterranean options.

Turkey	The Turkish government has adopted a comprehensive approach to tackling nutritional issues, encompassing legislative reforms, strategies for dietary challenges, agricultural directives, educational endeavors, and specialized programs for at-risk populations. Within the academic sphere, universities have established Health, Culture, and Sports Departments dedicated to nutritional planning and student support. Public university meals, subsidized by the government, adhere to strict quality controls and are aligned with national dietary guidelines, promoting the reduced intake of energy-dense foods and enhanced fiber consumption. The food service process is meticulously managed, with a focus on allergen information and hygiene. Menus cater to a variety of dietary needs, including vegan options, and aim to support financially disadvantaged students. The government's efforts extend to inter-ministerial collaborations, formulating holistic policies that span nutrition, agriculture, food labelling, and health education. Fiscal measures, such as taxes on sugary drinks, are implemented to curb unhealthy consumption patterns. The Dietary Guidelines for Turkey, a dynamic document reflecting the latest dietary data and studies, underpins the nationwide promotion of sound eating habits and food safety. Additionally, ongoing initiatives concentrate on risk mitigation, educational outreach, and systematic monitoring to advance public health and address nutritional issues effectively.

Table 2 Characterization of Food/Nutrition Policies in Portugal, Croatia, and Turkey

3.2.3. National food offers in HEIs

In terms of the food offers in HEIs, it was also necessary to characterize the three national settings regarding campus and off-campus food offerings. Table 3 summarizes these data.

		Portugal	Turkey	Croatia
Number of HEIs under intervention		10	2	1
Total number of students		131.808	63.373	69.000
% of the total of HEI students in the country		37% 359397 (only public)	0,9% 7 million (public/ private)	52% (151.827 public/private)
Canteens		51	2	15
Other food service on campus	**Cafes/Snack Bars**	64	28	7
	Restaurants	7	5	2
	Vending Machines	184	114	56

Food service outside campus	Most of the faculty are in the city centres, which implies a greater access to the food supply, an alternative to canteens (e.g. restaurants, fast food, supermarkets, cafes, and snack bars). A minority of faculties are located outside city centres, which means that there is less access to this type of offer

Table 3 National characterization of food offers in HEIs

In Portugal, ten public HEIs showed notable similarity in food provision despite geographical dispersion. Most offer at least three meal options (meat, fish, or vegetarian) at student-friendly prices (€2.50–€3.95). Lunch is available on weekdays, while weekend service is limited. Few canteens serve dinner, and only one offers breakfast. In Turkey, two universities were analyzed: one public and one private. The public university provides 21 meals per week (three meals daily, including breakfast) available seven days a week. The private university offers 15 meals per week, limited to weekday lunches. In Croatia, a single public university, representing 52% of national enrolment, was analysed. Meals are mainly provided through the Student Centre, typically lunch and dinner, with occasional breakfast. Some canteens close on weekends.

Within one kilometer of campuses, food service availability is similar across the three countries. Most of the campuses located in city centers are surrounded by diverse food options, including traditional and fast-food restaurants, cafés, and supermarkets with ready-to-eat meals. This competitive environment presents challenges for promoting healthy eating habits.

3.3. Stakeholders' identification and priority matrix

In the use of a stakeholder engagement methodology, it is essential to start with an exercise to identify all the stakeholders that are considered relevant. This list was, first, defined within each team of researchers from the three countries. After the interviews, other stakeholders that had not been considered at first were included. Interestingly the result was quite similar in terms of the total number of stakeholders mentioned. The division by stakeholder segments presented in table 4 was done *a posteriori*.

	Portugal	Turkey	Croatia
Number by segments			
Upper level	4	8	7
HEI	8	4	5
Students	6	4	4
Canteens	2	4	4
Nutritionists/Dietitians	2	3	3
Other	7	4	7
Total number of stakeholders	*29*	*26*	*29*

Table 4 Stakeholders by segments in different countries

Upper-level stakeholders include those responsible for European/national/local policies. HEIs, the students and the canteens were deemed the main targets. The segment of nutritionists/dietitians was autonomous because there were several references to them in different contexts. Finally, the other stakeholders considered are quite fragmented between parents, media, vending machines, for example. The biggest difference we can highlight from this phase was the higher number of stakeholders referred to at the upper level in Turkey and Croatia when compared to Portugal. In Portugal, there is a greater reference to several different stakeholders within the HEIs.

A characterization table of stakeholders was first created, considering the two chosen criteria: dependence and influence. After this task, it was possible to develop the prioritization matrices for stakeholders in each of the countries (Figure 6). This exercise allowed the identification of four different levels of prioritization. The most critical stakeholders are positioned in the upper-right quadrant of the matrix. Accordingly, closer forms of engagement should be established throughout the various phases of the social marketing plan to ensure the achievement of the defined objectives.

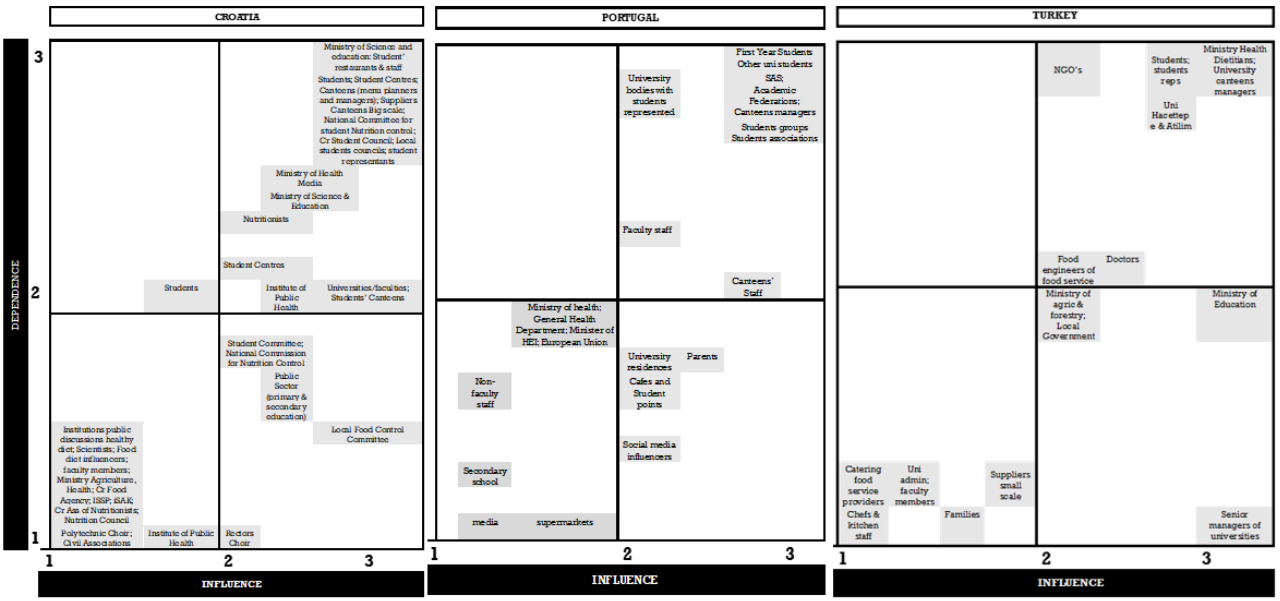


Figure 6 Stakeholders prioritization matrices

Drawing on stakeholder prioritization, a corresponding engagement model was developed. Stronger engagement is required for top-priority stakeholders in each country. Aligning both tools is vital for effective social marketing - a link previously overlooked in efforts to promote healthy eating within HEIs. For the sake of clarification, Table 5 presents the labels and dimensions used in the stakeholder engagement model presented in Table 6.

Type of engagement	Phase of Social Marketing Plan		Engagement Tools
1- Inform/Communicate	1. Diagnostic	4. Implementation	Emails, Surveys, interviews, Consultant panel/Advisory Committee; Conference/Seminar, Press Releases, Partnership, Social media, ...
2- Consultant	2. Objectives	5. Final evaluation	
3- Dialogue (Consultation panel)	3. Preparation	6. Dissemination	
4. Partnership			

Table 5 Types for Stakeholder Engagement Model

Type of engagement				Phase of social marketing plan			
	PT	Turkey	Croatia		PT	Turkey	Croatia
1-Inform	15	14	14	1-Diagnosis	20	11	14
2-Consultant	9	0	8	2-Objectives	17	7	8
3-Dialogue	5	2	3	3-Preparation	17	12	13
4-Partnership	7	9	2	4- Implementation	17	13	9
				5-Final evaluation	17	8	12
				6-Dissemination	26	22	21

Table 6 Stakeholder Engagement Model: Frequencies per Country

To clarify the information structured within the three engagement models of the social marketing plan, we present the overall results by engagement type and by the corresponding phases of the plan. The figures indicate how frequently each stakeholder was mentioned across countries. Across all three countries, Level 1 (Inform) was the predominant form of engagement. Higher levels of engagement (Dialogue and Partnership) were less frequent.

Regarding where this engagement takes place, the highest incidence was observed during Phase 6 – Dissemination. However, the most significant disparity arises in the Objective Definition phase, where Portugal identified a need to engage with more stakeholders than the other two countries. Following the development of stakeholder engagement models for each national context by individual teams, it becomes crucial to convene a larger meeting. This meeting aims to align strategies and address any differences that may have emerged during the model development process.

3.4. Survey and interview results

3.4.1. Students' socio-demographic profile

The survey gathered responses from 1,614 participants across Portugal, Turkey, and Croatia, providing a comprehensive overview of the socio-demographic characteristics of the target audience. Understanding these characteristics is essential for identifying potential segmentation variables and contextual factors that may influence dietary behaviours, canteen use, and responsiveness to social marketing interventions. Figure 7 summarises the composition of the

sample and highlights cross-country differences in education level, gender, study location, habitation status, student status, and field of study.

The sample was predominantly composed of undergraduate students (85.1%), reflecting the primary users of university food services. Women represented more than two-thirds of respondents (71.2%), while most participants were full-time students (76.7%). In terms of living arrangements, almost half lived with their families (47.7%), whereas a substantial proportion lived in university residences (25.2%) or shared accommodation (15.4%).

Significant differences emerged across countries. Turkish students were more likely to be full-time students and to live in university residences, Portuguese students were more likely to live with their families and combine study with work, and Croatian students showed the highest proportion of undergraduate students.

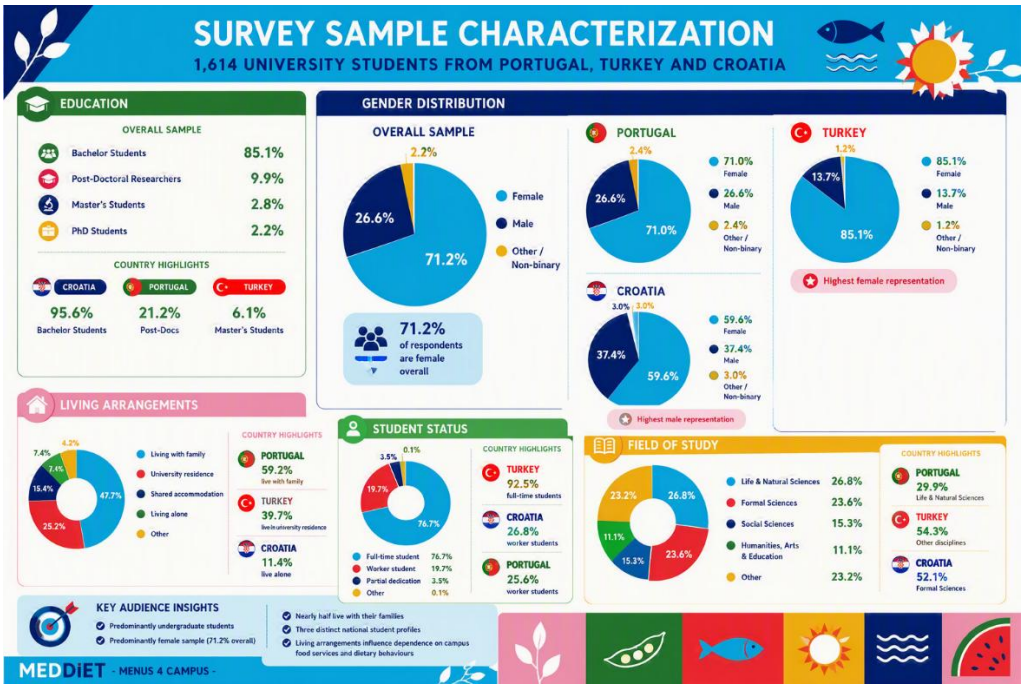


Figure 7 Socio-Demographic Characteristics for the Overall Sample and per Country

From a social marketing perspective, these findings indicate that the target audience is heterogeneous and that socio-demographic characteristics are likely to influence food-related behaviours, access to university canteens, and exposure to intervention strategies. Differences in residence status, study commitment, and disciplinary background may affect students' dependence on campus food services and their motivations for adopting healthier dietary

practices. Consequently, these characteristics should be considered during audience segmentation and the tailoring of communication and behavioural change strategies.

3.4.2. Food Acquisition Behaviour on Campus

The results suggest that university canteens are not the dominant source of food on campus. Students frequently rely on multiple food acquisition strategies, including cafeterias, home-prepared meals and alternative food sources. Across the sample, canteens represented only one element within a broader and highly competitive food environment.

Important differences were observed between countries. Turkish students reported the highest frequency of use of canteens and cafeterias, Portuguese students demonstrated moderate levels of canteen use, while Croatian students showed the lowest dependence on campus food services.

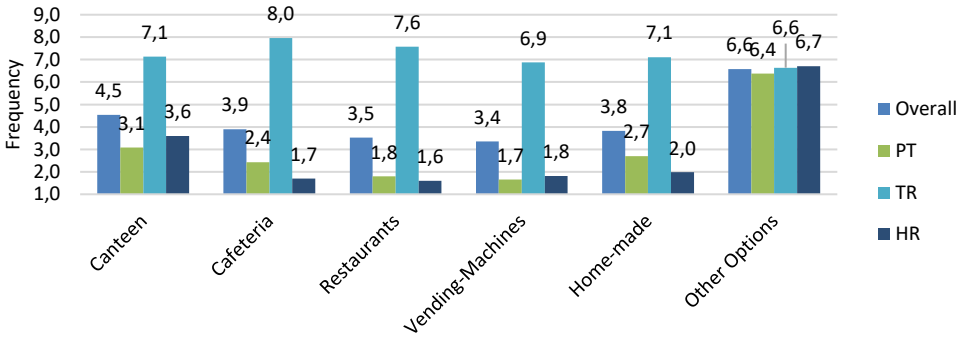


Figure 8 Dietary practices on campus: Overall and per Country

3.4.3. Students' perceptions about food offer and food service in campus canteens

Students expressed a clearly negative evaluation of the food provided by campus canteens. The overall assessment of food offer was significantly below the scale midpoint (M = 2.59), while service quality received a more favorable assessment (M = 3.22).

Country comparisons revealed that Portuguese students reported the most favorable perceptions of university canteens, while Turkish students consistently reported the lowest evaluations of both food and services.

A critical finding is that across all three countries, food was evaluated substantially more negatively than service. The primary challenge appears to be the food itself rather than operational service delivery. Improving perceptions of taste, variety, quality, attractiveness and relevance of meals is likely to generate greater behavioural impact than focusing exclusively on service improvements.

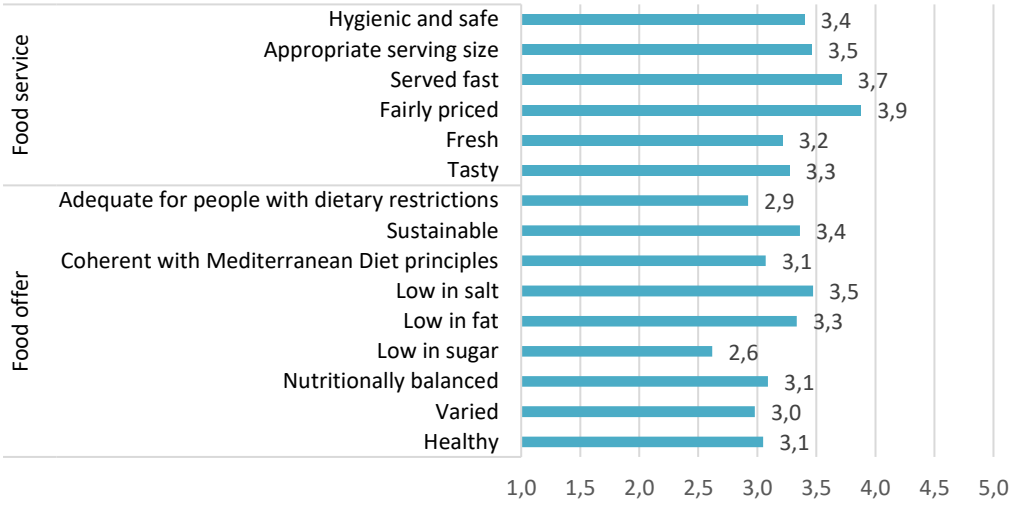


Figure 9 Canteen Appraisal: Items-based means for the Overall Sample

3.4.4. Students' promotion of canteens

Despite moderate average recommendation scores, the Net Promoter Score (NPS) analysis reveals substantial dissatisfaction with university canteens. These results place all canteen systems within a negative recommendation zone, indicating that detractors significantly outnumber promoters. The situation is particularly concerning in Turkey, where very few students can be classified as active promoters of the canteen experience (less than 3%).

As a result it may be concluded that students are unlikely to become ambassadors for healthy eating initiatives unless their overall experience with campus food improves substantially. Also it could be concluded that word-of-mouth promotion currently represents a significant weakness rather than a strength.

Figure 10 Net Promoter Score: Overall and per Country

3.4.5. Willingness to Pay for Improvement

One particularly encouraging finding concerns students' willingness to pay more for better food and services. Overall, 59% of respondents indicated willingness to accept a higher price if meaningful quality improvements were introduced. The proportion was especially high in Croatia (80%), while approximately half of Portuguese and Turkish students expressed similar willingness.

3.4.6. Conclusions from survey

The survey produces five central conclusions:

1. Low canteen engagement: Students regularly use alternative food sources, indicating that university canteens operate within a highly competitive food environment.

2. Food is perceived as a critical problem: Food offer receives consistently lower evaluations than service quality.

3. Heavy users are dissatisfied: Students who rely most on the canteen are often its strongest critics.

4. Advocacy is weak: Negative NPS scores indicate substantial dissatisfaction and limited peer recommendation.

5. Students value quality: Many students are willing to pay more if improvements are tangible and meaningful.

3.4.7. Qualitative and Contextual Diagnosis

Main Barriers to Mediterranean Diet Adoption

The qualitative findings reveal that students' choices are shaped less by nutritional knowledge and more by everyday practical considerations. Across interviews, focus groups and open-ended survey responses, students repeatedly identified slow service, lack of variety, poor food quality and inflexible menus as reasons for avoiding university canteens.

Convenience emerged as a particularly influential factor. Students often described university life as pressured and time-constrained, making quick and accessible alternatives more appealing than waiting in queues for canteen meals. At the same time, students frequently portrayed canteen food as impersonal, repetitive and lacking emotional appeal. Personal preference was consistently cited as a reason for choosing alternative food options. A further challenge concerns perceptions of meat reduction strategies. Stakeholders reported that students often interpret meals containing less meat or fish as lower-quality options rather than healthier or more sustainable alternatives. This misperception could create resistance to Mediterranean Diet implementation if not addressed through appropriate communication.

Motivators and Opportunities

Despite these barriers, several opportunities emerged. Affordability remains the strongest motivation for canteen use, confirming the role of university canteens as an important resource for budget-conscious students. Students also associate canteen food with healthiness, even when health is not their primary decision criterion. The appearance of words such as "healthy", "quality" and "diverse" among spontaneous associations suggests that positive perceptions already exist and can be strengthened. Another important opportunity lies in cultural familiarity. Traditional Mediterranean-inspired foods such as soups, stews and home-style dishes evoke feelings of comfort and familiarity among Portuguese students.

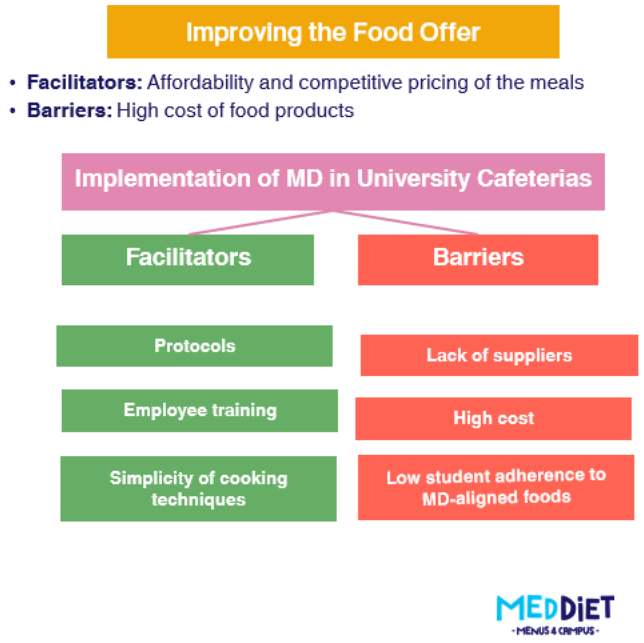


Figure 11 Facilitators and barriers for improving food offer

3.5. Diagnosis main conclusions figures

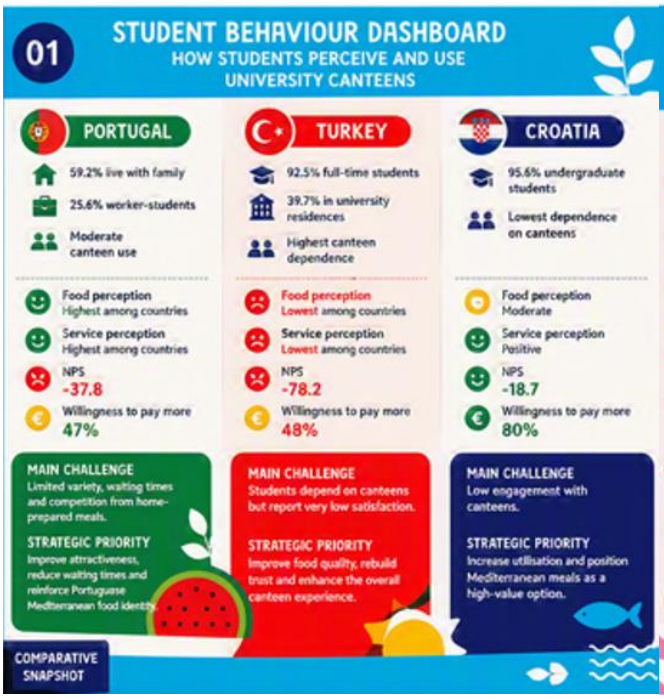


Figure 12 Student Behaviour Dashboard

Figure 13 Barriers and opportunities for changing behaviour

4. SWOT ANALYSIS

MEDDIET
- MENUS 4 CAMPUS -

4. SWOT ANALYSIS

While the diagnostic phase played a central role in informing the development of the Social Marketing programme, its full scope and detailed findings are not presented here. The SWOT analysis (Figure 5) that follows represents a synthesis of an extensive and in-depth diagnostic process, which involved the comprehensive collection and analysis of the data described in the previous section. As such, it should be understood not as a standalone tool, but as the outcome of a rigorous evidence-based assessment of the context. This analysis captures the key internal and external factors shaping the intervention and served as a critical foundation for the design of the marketing mix.

Strengths - Multidisciplinary and international project: The project is developed by institutions across three countries, with professionals in nutrition, psychology, marketing and food technology -The robust diagnosis has qualitative and quantitative research, including stakeholder interviews, focus groups and a survey -Good institutional relationship with key stakeholders - Visual communication of the project	**Weaknesses** - Dependence on institutional engagement: Success only comes from cooperation from HEIs and food service providers - Resource-Intensive Coordination: Managing seven institutions across three countries requires intensive coordination, time, and clear communication - Complexity of measuring behavioural change in the timeline of the project (3 years)
Opportunities -Cultural affinity with the Mediterranean Diet: The Mediterranean Diet (MD) aligns with some local culinary traditions, allowing for easier integration, -Supportive policy environment: The existence of public health policies promoting healthy eating, and laws for vegetarian options in public canteens, offers a favourable framework for the project - Concern for sustainability: The environmental sustainability aspect of this project can resonate with younger people	**Threats** -Negative perceptions of university canteens: Students associate them with low food quality, limited variety, poor service, and unappealing environments, reducing their potential as health-promoting spaces. -While the objective is for institutions to promote long-term health benefits, student's choices are more driven by short-term factors such as cost, convenience, and taste

- Repetitiveness of existing meals in canteens create an opening for introducing MD dishes	-Barriers in food services: Limited financial resources, bureaucracy, and lack of staff training limits the implementation of menu changes -Competition: Fast food, vending machines, home-prepared meals, and irregular eating habits compete with canteen services and better align with students' routines - Economic situation: High food inflation and low purchasing power may limit the affordability of MD-aligned meals -Demographic situation: Long-term population decline and aging population, particularly in Portugal may reduce the student base -Risk of Misinterpretation: Menu changes, such as reducing meat, may be perceived as cost-cutting rather than health or sustainability measures

Figure 14: The SWOT analysis

5.TARGET AUDIENCE

MEDDIET
- MENUS 4 CAMPUS -

5. TARGET AUDIENCE

Based on the programme's objectives and the insights generated during the diagnostic phase, two primary target groups were identified: (1) university students, both displaced and non-displaced, across different years of study; and (2) canteen managers and food service staff, including both private providers and higher education institutions. This segmentation reflects the dual focus of the intervention, addressing both demand-side (students' behaviours and preferences) and supply-side (food provision and service practices) determinants of dietary behaviour within university settings.

To operationalise this segmentation and ensure a user-centred approach, four evidence-based personas were developed. These personas are grounded in the extensive diagnostic research previously described and serve as a bridge between data and practice. By synthesising key behavioural patterns, motivations, and barriers, they supported the briefing process for the design team and guided the development of a tailored communication strategy aligned with the needs and realities of each priority segment.

PERSONA 1: PEDRO Student 1st year displaced 	**Age:** 18 years old **Course:** Engineering (1st year) **Origin:** Bragança (used to live with his parents, now a displaced student) **Residence:** Student dorm near the university **Context:** Goes back to Bragança only on weekends, misses his family and especially his grandmother's food. **Motivations**: Building independence, making new friends, managing his time well. **Challenges**: Adapting to living away from home, learning to cook/manage meals, dealing with homesickness. **Digital behaviour:** Instagram, TikTok, Discord. **Preferred communication channels**: Quick messages, visual/short content, WhatsApp
Persona 2: MARIA Student 2nd year 	**Age**: 19 years old **Course:** Medicine (2nd year) **Origin:** Lisbon **Residence**: Lives with her parents and sister **Context:** Has an organized life, strong family support, high academic performance. **Motivations:** Academic success, becoming a doctor, helping others, making her family proud. She wants to eat healthy but has no time to prepare the meals. Usually, study in university for long hours **Challenges**: Time management (intense study vs. personal life), academic pressure, limited autonomy regarding food/independence. **Digital behavior:** Instagram, early use of LinkedIn, YouTube for study support. **Preferred communication channels**: University email, study groups, academic workshops.
Persona 3: JOÃO	**Age:** 45 years old **Background:** Management degree, 20 years of experience in the food service industry, including previous roles in catering and hospital canteens before transitioning to

Cafeteria Manager 	higher education. **Responsibilities**: Overseeing operations, ensuring compliance with hygiene and nutrition standards, managing budgets, negotiating suppliers, and responding to university administration. **Goals:** Maintain high-quality, cost-effective meals. Improve student satisfaction and increase meal attendance. Integrate healthier and sustainable options (e.g., Mediterranean diet). **Challenges:** Balancing cost efficiency with nutrition and taste. Managing high demand during peak hours. Recruiting and training reliable staff. Adapting to changing student preferences. **Motivations:** Reputation of the service, financial sustainability, positive feedback from students and administration. **Digital behavior:** Uses professional platforms like LinkedIn, WhatsApp **Preferred communication channels:** Reports, email, in-person meetings with staff and university officials
Persona 4: SOFIA Cafeteria staff direct contact with students daily 	**Age**: 38 years old **Position:** Food service assistant (canteen staff, serving students daily) **Background:** High school education, 15 years of experience in food preparation and serving. Known by students for being friendly and approachable. **Responsibilities:** Serving meals at the counter, assisting students with dietary needs, maintaining cleanliness, and ensuring portions follow guidelines. **Goals:** Provide quick and friendly service. Ensure students feel welcome. Support colleagues in busy hours. **Challenges**: High workload during peak times (long queues). Lack of recognition for her work. Sometimes facing complaints about food, she doesn't control (quality, menu). **Motivations:** Positive interactions with students, stable job, being part of a team. **Digital behavior**: Uses Facebook and WhatsApp, not very active on professional platforms. **Preferred communication channels**: Face-to-face communication, direct instructions from supervisors.

6.MARKETING-MIX

MEDDIET

- MENUS 4 CAMPUS -

6. MARKETING MIX

The development of the marketing mix is central to the effectiveness of Social Marketing programmes. This section outlines its core components, with particular emphasis on Product, Price, Place, and Partnership. Given its critical role in this case study, the communication strategy (Promotion) is examined in greater detail in the following section.

6.1. Product

In this programme, the product is conceptualised across three levels:

1. Core product (value exchange)

The core product reflects the benefits offered to the target audiences, namely:

(a) improved health and well-being among university students; and

(b) enhanced availability of healthy and sustainable food options within university canteens.

2. Actual product (target behaviour)

In Social Marketing, the product is the behaviour itself. A dual-track approach was adopted:

(a) Institutional change: increasing the availability and supply of Mediterranean Diet (MD) menus in university canteens (environmental restructuring). This approach is consistent with Ecological Models of Health (Story et al., 2008; Fenta, Tiruneh, & Anagaw, 023), which emphasise the influence of environmental factors on individual behaviour.

(b) Individual change: increasing students' consumption of MD menus, supported by canteen staff acting as behavioural change ambassadors within the food environment.

3. Augmented product (tangible elements)

The augmented product includes supporting tools such as MD menu guidelines, including structured two-week menu plans to facilitate implementation.

6.2. Price

Price encompasses both monetary and non-monetary costs associated with behaviour change.

(a) For students, perceived costs include trying unfamiliar foods, the price of MD menu options, and practical constraints such as time pressure and convenience.

(b) For canteens, costs relate to menu adaptation, potential changes in operational procedures, and increased demands on service delivery.

6.3. Place

Place, in social marketing programs, refers to the context in which the behaviour occurs and where barriers to access can be reduced, effectively enabling "the healthy choice to become the easy choice" (World Health Organization, 1986). In this programme, Place extends beyond the physical setting of food provision to include how choices are presented and experienced. University canteens function as central hubs for behavioural exchange, where MD menus are made available and promoted. Canteen staff play a key role as frontline ambassadors, consistent with principles of choice architecture (Thaler, Sunstein, & Balz, 2013). Additionally, the placement of MD-related signage across campus environments, including classrooms, vending machine areas, and student residences, creates continuous visual cues that reinforce social norms and encourage healthier choices.

6.4. Partnership

Partnerships are fundamental to co-creation and long-term sustainability. The programme relies on collaboration with higher education institutions, where both the diagnostic phase and implementation took place; with food service providers and canteen managers; and with student associations and representative groups. These partnerships ensure that the intervention remains contextually relevant, operationally feasible, and centred on the needs of its target audiences.
Finally, we turn to the strategic dimension of Promotion. Given the centrality of communication in this Social Marketing Plan, the following section provides more detailed of the programme's communication strategy.

6.5. Communication

The communication strategy developed for the MedDiet4Campus Social Marketing Programme adopts a life-cycle perspective, recognising communication as a strategic process that evolves alongside the intervention itself. Consistent with social marketing principles, communication

extends beyond awareness-raising activities to encompass stakeholder engagement, behavioural reinforcement, evaluation, and the long-term sustainability of programme outcomes. As presented in Figure 15, communication operates across the entire intervention framework, connecting diagnosis, implementation, monitoring, and future scaling through continuous interaction and feedback among stakeholders.

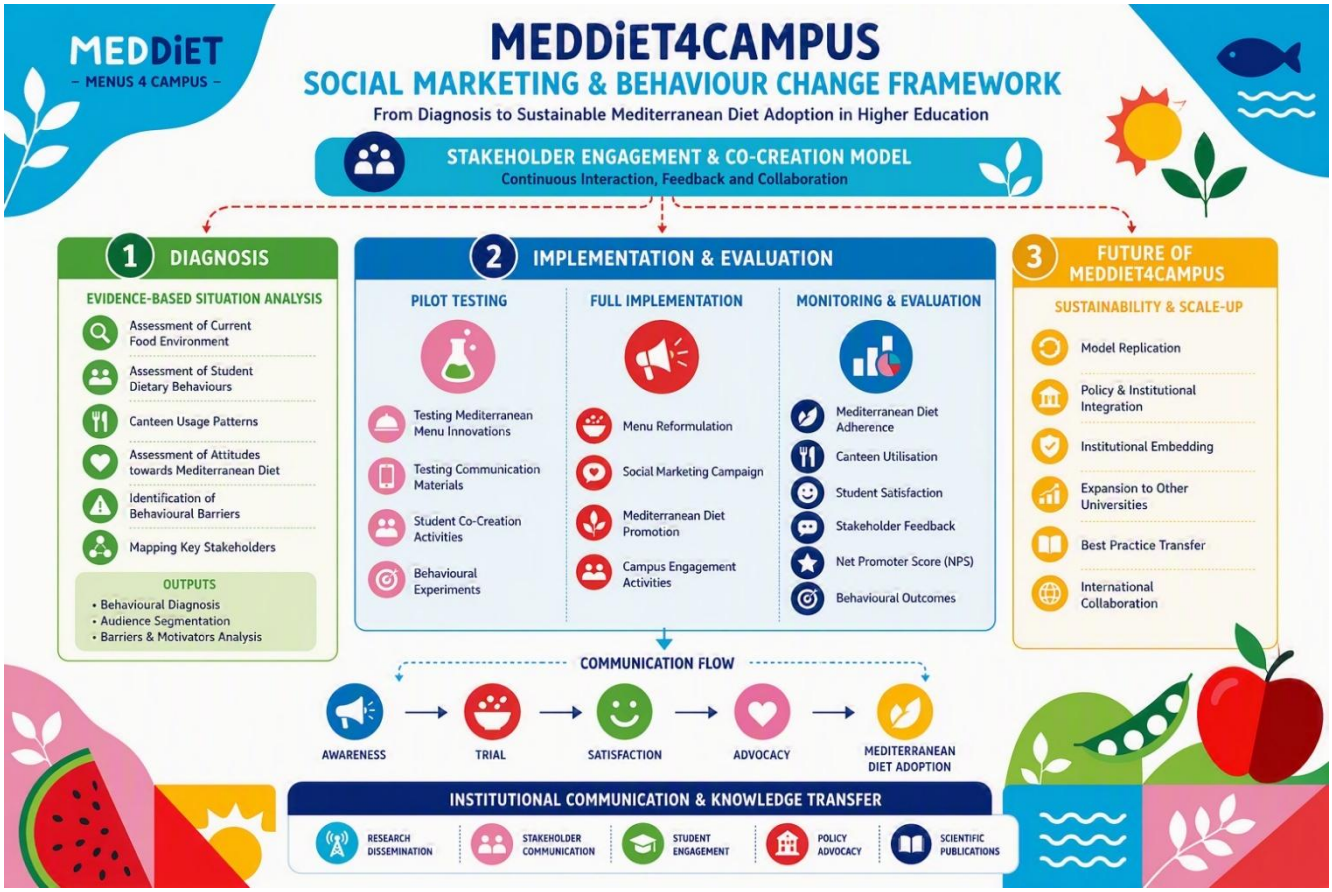


Figure 15 Communication Strategy

Accordingly, the communication strategy is structured around three interrelated axes:

(1) **Program/Institutional Communication**, designed to build awareness, credibility, and institutional commitment;

(2) **Communication during Pilot Testing and Implementation**, aimed at facilitating participation, supporting behaviour change, and maintaining stakeholder engagement throughout the intervention;

(3) **Communication after Implementation**, which focuses on sustaining project impact beyond the funding period through dissemination, institutional integration, policy engagement, and replication in other university settings.

The visual identity of the intervention, including merchandising materials and communication resources, was professionally developed following a design brief commissioned to FoodLabDesign, ensuring consistency across all communication channels and intervention settings.

Axe 1. Program/Institutional Communication

The first communication axis spans the entire duration of the MedDiet4Campus programme and focuses on ensuring the visibility of the initiative beyond the project consortium, while simultaneously supporting effective communication among project partners. Given the multinational nature of the consortium, the establishment of robust internal communication mechanisms was considered essential to facilitate coordination, knowledge sharing, and consistent implementation across the participating countries.

In addition to the regular monthly consortium meetings, a dedicated intranet platform was developed (Figure 16) to centralise the documentation required throughout the project lifecycle. The platform served as a shared repository for protocols, methodological guidelines, project documentation, communication materials, and operational updates, thereby promoting transparency, facilitating collaboration, and ensuring consistency in programme implementation across Portugal, Croatia, and Turkey.

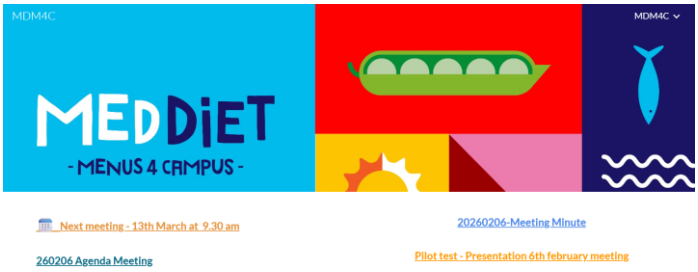


Figure16 Intranet MedDiet – Menus4Campus

To complement internal communication, an external project website was also developed (Figure

17). Structured around four main sections - *Project*, *Team*, *Publications*, and *News* - the website functions as the programme's primary public communication channel. Beyond disseminating information about the project's objectives, activities, and scientific outputs, the website contributes to increasing the visibility and credibility of the initiative among a broad range of stakeholders, including higher education institutions, policymakers, researchers, students, and the wider community. As such, it represents an important tool for fostering transparency, supporting stakeholder engagement, and facilitating the long-term dissemination and exploitation of the project's outcomes.

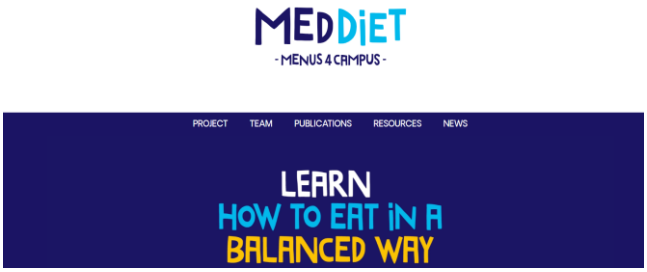


Figure17 Meddiet4 Campus Website Layout

https://www.meddiet4campus.eu/

The strategic objectives described above were translated into a structured communication action plan to guide the implementation of Axis 1. Each action was designed to address a specific communication objective and is accompanied by clearly defined communication channels, target audiences, monitoring indicators, and implementation periods. This systematic approach facilitates the evaluation of communication performance while ensuring consistency and alignment with the overall goals of the MedDiet4Campus programme.

Table 7 presents the communication action plan for Axis 1 – Program and Institutional Communication, including the planned actions, communication tools, target audiences, key performance metrics, and implementation timeline.

Actions	Communication Tools	Targets	Metrics
External stakeholder engagement and program positioning	Project's website	External stakeholders Canteens HE Students	▪ One website ▪ Website Traffic (Sessions/Unique Visitors) ▪ Average Session Duration

Internal communication: Project Team alignment and knowledge management	Intranet Meetings	Project team National and international	One Intranet Intranet Adoption Rate (%) Frequency of Resource Downloads Meeting attendance
Development of Visual identity of the project	Logo, colours	Stakeholders internal and external	Use of visual identity in all communications and dissemination
Establishing partnerships with Student Unions and Boards of Directors of Higher Education Institutions.	Email; meetings	Priority stakeholders	Number of formalized strategic partnerships

Table 7 Communication Action Plan for Axe 1

Axis 2 – Communication in Pilot and Implementation phases

The second communication axis focuses on supporting the implementation of the intervention by fostering stakeholder engagement, facilitating behaviour change, and reinforcing the adoption of Mediterranean Diet (MD) practices within higher education institutions. Unlike the institutional communication described in Axis 1, this phase places communication at the centre of the intervention itself, using strategically designed messages and activities to influence both the supply of and demand for Mediterranean Diet meals.

The communication strategy during the pilot and implementation phases was designed to achieve three complementary objectives:

(1) First, it sought to increase awareness of the Mediterranean Diet by communicating the value proposition of both the behavioural change being promoted and the tangible products introduced through the intervention. This involved highlighting the nutritional, cultural, environmental, and social benefits associated with adherence to the Mediterranean Diet, while simultaneously promoting the newly developed Mediterranean menus available in university canteens.

(2) Second, communication activities aimed to encourage higher education institutions and food service providers to increase the availability of Mediterranean Diet meals within campus food environments.

(3) Finally, the strategy sought to stimulate demand among university students by increasing the attractiveness, acceptance, and regular consumption of these healthier menu options.

Importantly, the communication messages developed for this phase were directly informed by the findings of the diagnostic research presented in the previous chapter. The stakeholder analysis revealed that students' perceptions of university canteens extended well beyond functional aspects such as price and convenience. Instead, the food environment was strongly associated with emotional and experiential attributes, including comfort, familiarity, conviviality, warmth, flavour, health, variety, locally sourced food, and the visual appeal of dishes. Consequently, communication materials were intentionally designed to emphasise these values, framing Mediterranean Diet meals not only as healthy and sustainable choices but also as enjoyable, satisfying, and socially meaningful eating experiences.

Pilot Test

Consistent with the social marketing planning process proposed by French (2017, 2019), pilot testing constituted a fundamental stage prior to full programme implementation. Rather than serving solely as a pre-test of intervention materials, the pilot provided an opportunity to evaluate the feasibility, acceptability, and effectiveness of both the communication strategy and the proposed menu changes before wider deployment.

The pilot intervention was conducted over a one-week period in one of the participating higher education institutions. During this phase, Mediterranean Diet dishes were prepared and offered to students through free tasting sessions, followed by the administration of a structured evaluation questionnaire assessing product acceptance, sensory evaluation, and overall satisfaction. The findings informed the selection of the dishes that were subsequently incorporated into the full implementation phase.

The pilot also included a dedicated training programme for canteen staff, recognising their central role as frontline stakeholders capable of influencing students' food choices. The training addressed two complementary themes: the principles and benefits of the Mediterranean Diet and the importance of food service personnel as facilitators of behavioural change within the university food environment. Beyond evaluating menu acceptance, the pilot therefore functioned as an important stakeholder engagement activity, strengthening staff commitment, building implementation capacity, and refining the communication materials before programme rollout.

Implementation

Following the pilot phase, the intervention was implemented across three higher education institutions in Portugal. The implementation lasted two consecutive weeks at Escola Superior de Enfermagem de Lisboa (ESEL) and the University of Algarve, and one week at the University of Porto. The selection of these institutions was not based solely on logistical considerations but resulted from the stakeholder prioritisation process described in the diagnosis phase. Although the initial assessment involved ten higher education institutions, the stakeholder analysis identified these three universities as offering the most favourable conditions for programme implementation. Selection criteria included institutional commitment, willingness to collaborate, operational readiness of the university canteens, and the potential to sustain Mediterranean Diet initiatives beyond the duration of the funded project.

This stakeholder-informed selection process reflects a fundamental principle of social marketing, namely that successful behavioural interventions depend on the active engagement and commitment of organisations responsible for delivering the proposed behavioural offering. By partnering with institutions demonstrating both organisational readiness and strategic interest, the programme increased the likelihood of effective implementation while laying the foundations for the long-term institutionalisation of Mediterranean Diet practices within the university food environment.

Communication Actions During Implementation

The communication strategy implemented during this phase was designed to create a supportive environment that facilitated the adoption of Mediterranean Diet (MD) behaviours within university canteens. Rather than relying on a single communication channel, the intervention combined interpersonal, environmental, institutional, and digital communication approaches, recognising that sustained behavioural change requires consistent exposure to complementary messages delivered through multiple touchpoints. This integrated communication ecosystem contributed to a food choice architecture that not only informed students about the benefits of the Mediterranean Diet but also normalised and facilitated healthier food choices within the university setting.

a) Educational Materials and Staff Training

Educational communication materials were developed to support both students and canteen staff throughout the intervention. These included short educational videos, social media reels, infographics, and training materials designed to communicate the principles and benefits of the Mediterranean Diet in an accessible and engaging manner. Particular emphasis was placed on training food service personnel, recognising their role as frontline communicators capable of influencing food choices through daily interactions with students. The training programme reinforced consistent messaging across all participating institutions and equipped staff with the knowledge required to actively promote Mediterranean menu options during service.

b) Point-of-Decision Communication

Communication at the point of food selection represented one of the central components of the intervention. Behavioural science demonstrates that food choices are frequently made under time constraints and with limited cognitive effort. Consequently, environmental cues positioned immediately before or during the decision-making process can substantially influence consumer behaviour. For this reason, a range of communication materials was strategically placed throughout the university canteens to increase the visibility and attractiveness of Mediterranean Diet options. Posters, table placemats, menu displays, and informational signage provided simple and salient prompts encouraging students to choose Mediterranean meals. Figure 18 illustrates some examples of materials implemented in the points-of-decision.

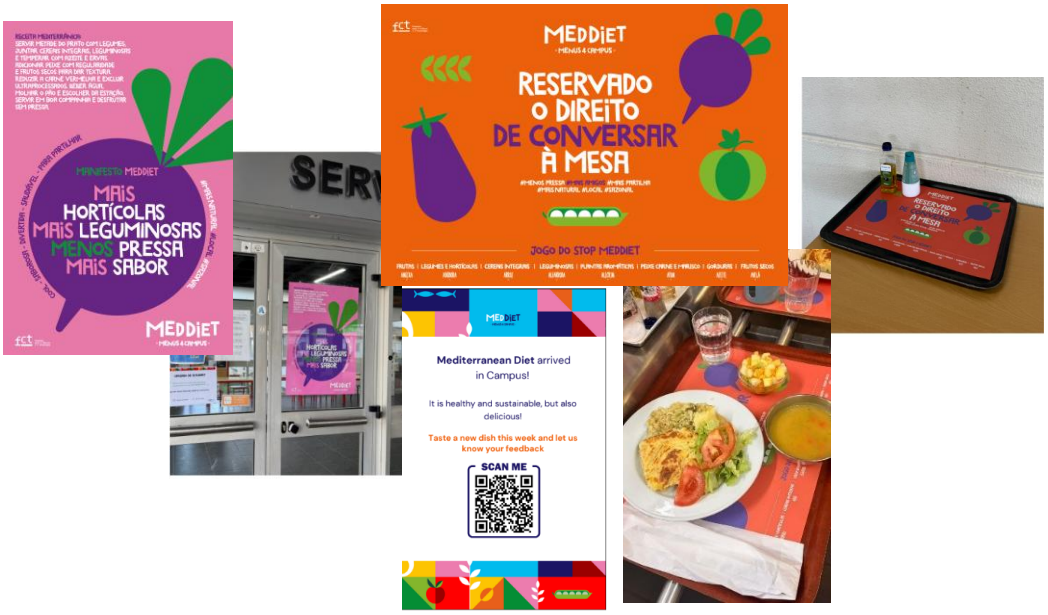


Figure18 Examples of point-of-decision communication materials

To reinforce programme visibility and create a recognizable project identity, branded T-shirts and aprons were produced for both the research team and canteen staff, as illustrated in Figure 19.

Figure 19 Examples of aprons and t-shirts provided to canteens' staff

c) Institutional and Public Communication

Institutional communication complemented the intervention by increasing the programme's visibility and strengthening its legitimacy among external stakeholders. Press releases, media coverage, and meetings with university leaders, institutional partners, and local opinion leaders were organised throughout the implementation phase. These activities aimed to reinforce

institutional commitment, raise public awareness of the initiative, and position the Mediterranean Diet as a strategic priority within higher education food environments. Public dissemination also contributed to building credibility and creating favourable conditions for the long-term continuation of the intervention beyond the project's funding period.

d) Gamification and Incentive Mechanisms

To encourage repeated trial and sustained engagement with the Mediterranean Diet menus, the intervention incorporat a gamification strategy based on positive reinforcement. Students received a personalised Mediterranean Diet Passport (Figure 20), in which stamps were collected each time they selected a Mediterranean menu option.

Figure 20 The MedDiet Passport Card

Accumulated stamps could subsequently be exchanged for project-branded rewards, including tote bags, pins, and T-shirts (Figure 21). This incentive mechanism was designed not merely as a reward system but as a behavioural tool to increase repeated exposure to Mediterranean meals, reduce uncertainty associated with trying unfamiliar dishes, and strengthen participant engagement throughout the intervention. By combining intrinsic motivations related to healthy eating with extrinsic incentives, the passport system sought to increase participation while reinforcing the formation of healthier eating habits.

Figure 21 Examples of pins, tote bags, t-shirts and lunch boxes

For each communication action, specific communication tools, target audiences and process indicators were defined to facilitate implementation monitoring and evaluate the reach and fidelity of the intervention. As recommended in social marketing evaluation frameworks, these metrics focus primarily on implementation outputs, providing evidence that the planned communication activities were delivered as intended before assessing behavioural and health outcomes. Table 8 summarizes the communication actions, tools, target audiences and corresponding process indicators included in Axis 2.

Action	Communication Tools	Targets	Metrics
Point of decision Communication	Tote bags T-shirts Aprons Place mats	HEI students Canteens	▪ Number of promotional materials produced ▪ Number of materials distributed/used
Institutional and Public Communication	Press releases Meeting with stakeholders and local opinion leaders	Local Media HEI Canteens	▪ Number of press releases sent ▪ Number of meetings held ▪ Number of media publications ▪ Number of requests for additional information about the project
Opinion Leaders: Social media campaign using local influencers, Students Groups and Higher Education Institutions	Digital influencers: 2 influencers per Higher Education Institution (HEI) HEI's Communication s office	Students HEI	▪ Number of pieces of content published (posts, Reels, Stories) ▪ Number of influencers involved ▪ Engagement rate (likes, comments, shares)
Educational Materials	Posters Videos Training	Canteens Students	▪ Number of posters placed at decision points ▪ Number of videos produced ▪ Number of training sections
Gamification to improve MD consumption	Loyalty card	Students	▪ Number of cards distributed ▪ Average number of Mediterranean meals per user ▪ Percentage of students who complete the card

Table 8 Communication Action Plan for Axe 2

Evaluation and Monitoring

A comprehensive monitoring and evaluation framework was developed to assess both the implementation process and the effectiveness of the intervention. Following social marketing evaluation principles, the framework combined process and outcome indicators, enabling the assessment of whether the planned activities were implemented as intended and whether they contributed to the adoption of Mediterranean diet (MD) meals within Higher Education Institutions (HEIs).

Process evaluation focused on monitoring the delivery of the intervention, including the implementation of communication activities, stakeholder engagement, and the production and dissemination of communication materials, as detailed in the previous implementation plan. Outcome evaluation assessed changes in consumer behaviour and perceptions through quantitative indicators, including self-reported Mediterranean menu selection, satisfaction with the intervention, and the perceived influence of the communication campaign on food choices.

To evaluate the implementation phase, a post-intervention survey was administered to students participating in the project. The questionnaire reassessed the proportion of students reporting the selection of Mediterranean menu options, allowing comparisons with the baseline assessment. In addition, it measured participants' satisfaction with the meals and included specific questions evaluating the perceived effectiveness of the communication materials in encouraging the selection of Mediterranean dishes.

In general, the findings demonstrated a high level of acceptance of the Mediterranean-inspired meals, with most sensory attributes receiving ratings between 4 and 5 on a five-point scale. Participants also reported a strong willingness to recommend both the Mediterranean dishes and the university canteens, supporting the feasibility and acceptability of implementing Mediterranean menus within university food services.

The evaluation also explored the contribution of the communication strategy to consumers' food choices. As shown in Table 9, 57.2% of respondents agreed that the communication materials influenced their decision to try the Mediterranean dishes.

These findings suggest that the communication strategy successfully supported the adoption of Mediterranean menu options by increasing the visibility and attractiveness of the intervention at the point of choice. Although communication alone cannot explain behavioural change, the results

indicate that the integrated communication approach contributed to encouraging trial among a substantial proportion of students, reinforcing the value of combining environmental, institutional, interpersonal and digital communication within a social marketing intervention.

	n	%
Strongly disagree	42	9,5
Disagree	30	6,8
Neither agree nor disagree	117	26,5
Agree	132	29,9
Strongly agree	121	27,4
Total	**442**	**100**

Table 9 Perceived influence of communication materials on students' decision to try the Mediterranean dishes

Among respondents who selected the "Other" option when identifying their main reason for choosing the Mediterranean dish, the most frequently reported motivation was related to the communication strategy (39.5%). These responses referred primarily to promotional incentives, campaign dissemination activities, and previous exposure to or trial of the dishes. Other motivations included personal taste preferences (21.1%), health and nutritional considerations (15.8%), vegetarian dietary preferences (13.2%), limited availability of alternative menu options (7.9%), and specific characteristics of the dishes themselves (2.6%). These findings provide further evidence that the communication campaign, particularly the use of promotional activities and incentives, contributed to increasing students' willingness to try the Mediterranean menu options. To complement students' perspectives and obtain a more comprehensive evaluation of the intervention, qualitative interviews were also conducted with canteen staff and managers. In line with social marketing principles, the long-term sustainability of behavioural interventions depends not only on consumer acceptance but also on the commitment and capacity of implementation partners. Consequently, the interviews explored staff perceptions regarding the feasibility of implementing the Mediterranean menus, the usability of the communication materials, students' engagement with the campaign, and the operational challenges associated with integrating the intervention into routine food service practices.

Overall, participants reported a highly positive experience with the intervention, recognising both the communication strategy and the Mediterranean menus as valuable additions to the university food service offer. Nevertheless, the interviews also highlighted the importance of adapting some of the initially planned activities to the operational realities of university canteens. For example,

the distribution of small food samples to encourage tasting proved successful during the pilot phase but was not feasible during full-scale implementation. The high volume of students served during peak meal periods made this activity impractical, as it would have increased preparation time and waiting queues. Despite these operational adjustments, canteen managers considered the intervention to be successful and expressed their intention to retain several Mediterranean menu options beyond the duration of the project. This finding represents an important indicator of organisational adoption and sustainability, suggesting that the intervention generated value not only for students but also for the institutions responsible for delivering the service.

Axe 3. Communication after implementation

The sustainability in social marketing depends on the internalization of the behavior by the system. The goal is for the Mediterranean Diet (MD) to cease being an "external project" and become in the DNA of the university. Taken in account this goal, it was created a MD Toolkit 4 Canteens that will be published not only in the project website but also in some of the partner universities websites. It includes an Ebook with menus, guidelines and also all the communication materials used. This toolkit should be presented in the final conference also and distributed by email for all the stakeholders engaged in the project.

The final conference was designed to transition the project's ownership. It's an advocacy tool to ensure that the Mediterranean Diet (MD) becomes part of the university's institutional policy. The primary goal is to ensure that the project's 'Choice Architecture' remains embedded in the university ecosystem beyond the initial funding period. By presenting the diagnostic results and the success of the pilot and implementation phases, the conference acts as a social proof mechanism, encouraging Higher Education Institutions (HEIs) and private canteen companies to formalize their commitment to the Mediterranean Diet. To maximize participation and strategic relevance, the Final Conference will be promoted through targeted email marketing campaigns addressed to potential participants. The effectiveness of this promotional activity will be assessed through the registration rate, as well as the quality of attendance, measured by the proportion of high-level decision-makers present at the event.

7. CONCLUSIONS

This MedDiet4Campus Social Marketing Plan was developed as a strategic response to the growing challenges associated with unhealthy dietary behaviours among higher education students and the declining adherence to Mediterranean Diet principles. Grounded in a strong diagnostic research conducted across Portugal, Croatia and Turkey, the programme adopts a holistic approach that recognises dietary behaviour as the result of interactions between individuals, food environments and multiple stakeholder groups.

The findings demonstrate that university canteens represent a valuable yet underutilised setting for promoting healthier and more sustainable eating habits. While students generally acknowledge the importance of healthy eating, their food choices are strongly influenced by convenience, taste, variety, affordability and the overall food experience. At the same time, canteens face operational, financial and organisational constraints that may limit their capacity to implement change without institutional support and stakeholder engagement.

In response, this plan combines food environmental transformation, stakeholder engagement and behaviour change communication to address both the supply and demand sides of the university food system. By increasing the availability of Mediterranean Diet menu options, improving their visibility, and engaging students through communication and incentive mechanisms, the programme seeks to create favourable conditions for healthier food choices while strengthening the role of canteens as health-promoting environments.

The implementation and evaluation phases provided encouraging evidence of acceptance among both students and food service providers. The positive reception of Mediterranean-inspired meals, combined with the perceived influence of communication activities on food choice, suggests that social marketing can make a meaningful contribution to improving dietary behaviours within higher education settings. Equally important, the willingness of participating institutions to retain elements of the intervention beyond the project period indicates potential for long-term organisational adoption and sustainability.

Notwithstanding these encouraging outcomes, several limitations should be acknowledged. The intervention was implemented in a limited number of higher education institutions and over

relatively short implementation periods, which may constrain the generalisability of the findings. In addition, several evaluation measures relied on self-reported data, making the results susceptible to response bias. Finally, while the project was able to assess short-term behavioural responses, longer follow-up periods would be necessary to determine whether the observed changes are maintained over time and translate into enduring dietary habits.

Despite these limitations, the programme offers strong potential for transferability. The stakeholder engagement framework, communication strategy, educational materials, implementation protocols and Mediterranean Diet Toolkit were developed to be adaptable across different institutional and cultural contexts. As a result, the MedDiet4Campus model provides a practical framework that can be replicated or adapted by other higher education institutions seeking to create healthier and more sustainable food environments. Future initiatives could expand the intervention to additional universities and incorporate longer monitoring periods.

Finaly, the success of MedDiet4Campus lies in fostering a cultural shift within higher education institutions, where healthy and sustainable eating becomes an integral part of the university experience. By providing practical tools, strengthening stakeholder partnerships, and generating transferable knowledge, the project establishes a foundation for future initiatives aimed at improving dietary behaviours, enhancing student well-being, and promoting more sustainable university food systems across Europe and other cultural contexts.

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MEDDIET

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