



## DRIVERS AND BARRIERS TOWARDS SUSTAINABLE AND HEALTH-PROMOTING NUTRITION IN HIGHER EDUCATION: WORKSHOP INTEGRATING HETEROGENEOUS PERSPECTIVES

### Results of a Changing Perspectives workshop

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# ABSTRACT

**Background:** Universities have a pivotal role in shaping future societal norms, including sustainable and health-promoting eating habits. However, the integration of these practices into university communal catering faces numerous challenges. This study aims to explore diverse barriers and drivers influencing the adoption of sustainable nutrition in university settings and to propose targeted recommendations for action.

**Methods:** A qualitative research approach was adopted, centring around a participatory workshop that included six stakeholders from various backgrounds. Participants were asked to adopt perspectives different from their own in order to identify and discuss key issues in implementing sustainable nutrition. The results of the discussions were analysed thematically to determine the primary drivers and barriers.

**Results:** The study identified a complex interplay of factors affecting sustainable nutrition in university settings. Key barriers included financial constraints, diverse dietary needs, educational gaps, and logistical challenges. Conversely, drivers encompassed the potential role of universities as pioneers in sustainable eating, the influence of social dynamics, and the importance of multifaceted stakeholder engagement. The findings suggest that a holistic approach is needed to address these issues, including educational initiatives, policy support, economic incentives, and scientific research.

**Conclusion:** This research underscores the need for a comprehensive strategy to implement sustainable and health-promoting nutrition in university communal catering. Recommendations for action are presented from political, economic, and scientific perspectives, emphasizing the importance of multi-stakeholder collaboration. The study contributes to the understanding of sustainable nutrition in educational institutions and provides a foundation for future initiatives aimed at fostering healthier and more sustainable eating habits in university communities.

**Keywords:** sustainable nutrition, university catering, health promotion, multi-stakeholder approach,

# 1. INTRODUCTION

Sustainable and health-promoting nutrition is an important topic for sustainable development (Meier, 2015). A nutrition system aligned with the Sustainable Development Goals (SDGs) should ensure access to nutritious food, considering the environmental impact of food production and health effects of food consumption. In terms of a holistic approach, the aim of a sustainable and health-promoting nutrition system is to guarantee the provision of current and future generations with needed energy and essential nutrients to ensure their physical and mental health (Avery, 2022). Koerber et. al. (2017) specify the following seven principles of a sustainable and health-promoting nutrition system (1) preference of plant-based foods, (2) organic foods, (3) regional and seasonal products, (4) preference of minimally processed food, (5) Fair Trade products, (6) resource-saving housekeeping and (7) an enjoyable eating culture. Due to the World Health Organization (WHO) sustainable nutrition should be organized so that the overall effects on our healthcare, the environment, our economy as well as our society become as positive as possible. The overarching goal of sustainable nutrition is to manage the earth in a way that is sustainable for today's as well as future generations (FAO and WHO, 2019). With regard to a design and implementation-oriented perspective, a more sustainability-oriented nutrition system can also be characterized by the fact that the food supply chain must be factored at all stages, ranging from production to processing, distribution, preparation and consumption through to disposal. Nevertheless, it can be assumed that success in terms of improving the sustainability of nutrition systems will only be achieved by combining general regulations and incentive systems with context-specific solutions and design approaches (Orme & Dooris, 2010; Patel & Schmidt, 2020). Our research focuses on those attitudes by investigating important aspects regarding sustainable and health-promoting nutrition in university canteens as part of communal catering. Communal catering is defined as a special type of gastronomy, including regular catering of groups of people in e.g. companies, healthcare, educational institutions or other community facilities (Pfefferle et al., 2021). The guidelines for the design of sustainable and health-promoting communal catering, provided by the German Society for Nutrition (DGE), comprise sustainable planning, purchasing, preparation, provision and disposal of food. The optimal selection of food products along the seven food groups (cereal products, vegetables, fruit, dairy products, meat/fish/eggs, oils/fats and drinks) is crucial. During purchasing organically produced products, Fair Trade, animal welfare and environmentally friendly packaging shall be favoured. Likewise, while preparing the meals, resource-efficient kitchen appliances and optimal cooking times should be considered. With regard to serving, the optimization of timing between kitchens and serving, allow consumers to influence portion sizes and to include nudging strategies. The disposal of the food is supposed to include potential savings, separation of waste and an environmental friendly cleaning (Renner et al., 2021).

## 2. AIM

The main objective of our research is to identify drivers and barriers to sustainable and health-promoting nutrition in university canteens by incorporating the conceptualisations described in chapter 1 by considering the perspectives of students, employees of the university, university management, and service providers. The different perspectives of participants include diversity aspects such as the age, gender, educational and migration background, the field of study or research, place of residence and others. To gather the perspectives a changing perspectives workshop was performed. Overall, we aim to contribute to the development of innovative solutions

and concepts on sustainable and health-promoting nutrition in university canteens. Further, we consider the field of application of communal catering to be particularly exciting, as it also offers great potential for intergenerational exchange and learning processes.

### 3. METHODS

A changing perspective workshop was performed at the 58<sup>th</sup> Annual Conference of the Deutsche Gesellschaft für Sozialmedizin und Prävention e. V. (DGSM), by Deutsches Netzwerks Gesundheitskompetenz e. V. (DNGK) and the Nationaler Aktionsplan Gesundheitskompetenz (NAP) on 1<sup>st</sup> September 2023 in Hannover, Germany. Six people from different organisations and professional backgrounds took part in the workshop. Two researchers from the Hochschule Bielefeld, University of Applied Science and Arts (HSBI) moderated the session. At the beginning, the participants received a brief input on the topic of nutrition and nutritional system at universities as well of sustainable nutrition. Subsequently, the tasks of the workshop were explained in more detail (cf. fig. 1):

- **Step 1:** Take the perspective of your table (employees, students, university management or service providers). Collect drivers and barriers for a sustainable and health-promoting catering offer at universities and considering diverse characteristics. Write one point per moderation card, read the card aloud and place the card face down on the table (points are not commented on).
- **Step 2:** You have 5 minutes per perspective. Afterwards you change to another perspective.
- **Step 3:** Cluster the collected points in terms of content. By doing so, write headings on moderation cards and place the clustered cards on a pin board.
- **Step 4:** Present your results.
- **Step 5:** Follow the presentation, we discuss the results in the plenary session.

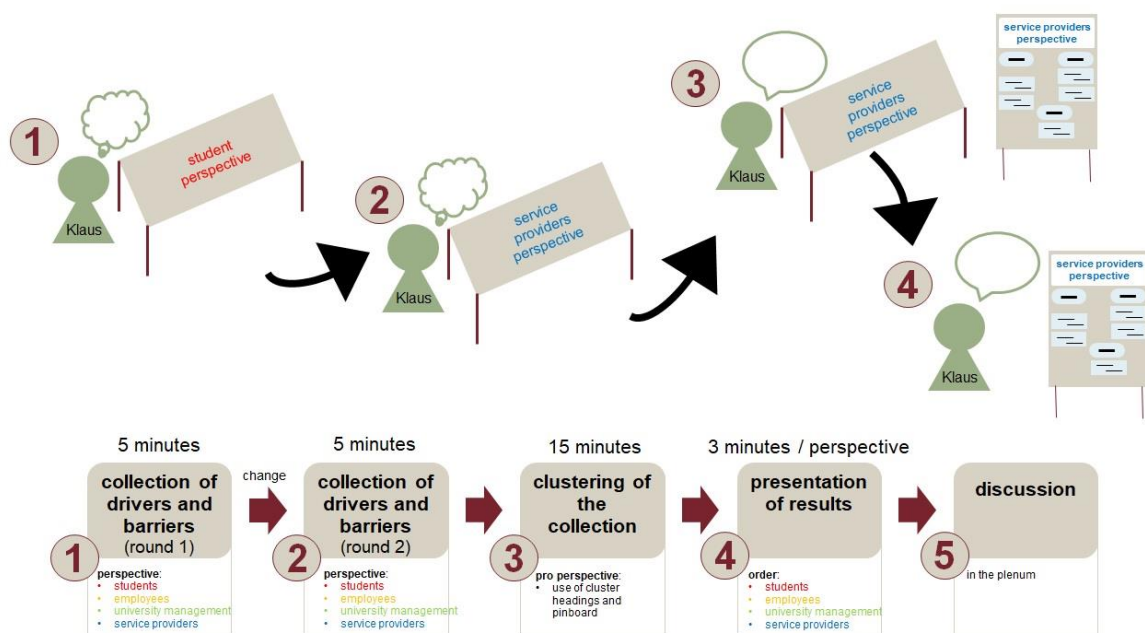


Fig 1. Procedure of the workshop tasks (own illustration)

## 4. FINDINGS

In the description of the results, a distinction is made between the results of the different perspectives adopted by the participants. Furthermore, the results were categorized according to the participants' statements. In addition, a distinction is made between negative and positive aspects, providing a nuanced understanding of the complexities involved. An overview of the results with the corresponding perspectives are illustrated in tab 1.

### **Perspective I: Service providers**

The findings regarding the perspective „service providers“, revealed insights on five categories: political framework, structure, education, conflicts, and funding.

#### *Category I.a: Political Framework*

- Positive Aspects: The absence of stringent governmental policies allows flexibility and innovation at university level, providing an opportunity for institutions to develop unique, tailored approaches for sustainable nutrition.
- Negative Aspects: However, a notable lack of government incentives and subsidies was identified, which hinders the implementation of sustainable practices in university catering services. This gap in political support might create a challenging environment for initiating and maintaining sustainable nutrition programs.

#### *Category I.b: Structure*

- Positive Aspects: On one hand, universities might become pioneers in adopting and showcasing new sustainable business models that may influence conventional food producers.
- Negative Aspects: On the other hand, the study highlighted resistance for changing well-established business models among conventional food producers. This resistance might be a significant barrier for integrating more sustainable food options into university catering.

#### *Category I.c: Education*

- Positive Aspects: The presence of sustainability managers and advocates within universities indicates a growing awareness and dedication to sustainability issues, suggesting a fertile ground for educational campaigns and initiatives.
- Negative Aspects: A general lack of awareness and ignorance on sustainable nutrition was observed among some stakeholders, indicating a need for more focused educational efforts.

#### *Category I.d: Conflicts*

- Positive Aspects: The identified conflicts (as can be see below) can serve as catalysts for dialogue and engagement, fostering a deeper understanding of the complexities involved in sustainable nutrition and leading to more holistic solutions.
- Negative Aspects: Conflicts were observed regarding student values and the need for interventions in politically sensitive areas. The challenge lies in balancing diverse needs and perspectives while promoting sustainable nutrition.

#### *Category I.e: Funding*

- Positive Aspects: A challenge between maintaining quality and managing costs/pricing (as can be seen below) opens avenues for innovative funding models and partnerships that can support the financial feasibility of sustainable nutrition initiatives.
- Negative Aspects: A significant tension was noted between maintaining quality and managing costs/pricing. This tension poses a challenge in providing affordable, yet sustainable and healthy food options in university catering.

In summary, while several barriers of the implementation of sustainable and health-promoting nutrition in university communal catering have been identified, the results within the perspective of service providers also uncovered potential drivers and opportunities for positive change. The engagement of diverse stakeholders revealed a complex interplay of factors, underscoring the need for comprehensive, multi-faceted approaches to effectively address these challenges.

## **Perspective II: Students**

The findings derived from the students' perspective, are categorized into environmental factors, social culture, individual needs, and education.

### *Category II.a: Environmental Factors*

- Positive Aspects: The availability of food options within the university setting, facilitates students' ability to access meals despite tight schedules, such as eating between lectures.
- Negative Aspects: However, limited time resources and financial constraints often lead students to opt for quicker, less healthy and sustainable, food choices. The affordability of healthier options remains a significant concern.

### *Category II.b: Social Culture*

- Positive Aspects: Social interactions, like dining with fellow students, foster a communal culture around food, potentially encouraging diverse food experiences.
- Negative Aspects: Yet, these social outings can reinforce culturally influenced eating behaviours that may not align with health-promoting nutrition, highlighting a tension between social conformity and individual dietary goals.

### *Category II.c: Individual Needs*

- Positive Aspects: A growing preference for plant-based nutrition among students reflects a shift towards more sustainable eating habits.
- Negative Aspects: Though, frustration arises due to monotonous food choices, indicating a gap in catering to diverse taste preferences and the need for more varied, appealing food options.

### *Category II.d: Individual needs*

- Positive Aspects: The recognition of individual dietary requirements, such as allergies, is a step towards inclusive catering that accommodates diverse student needs.
- Negative Aspects: There is an implicit challenge in balancing these individual requirements with broader catering strategies, ensuring that such specific needs do not compromise the overall quality and variety of food offerings.

### *Category II.e: Education*

- Positive Aspects: Students' general candour to new experiences presents an opportunity for educational initiatives to promote health-promoting nutrition and food preparation knowledge.
- Negative Aspects: In contrast, a prevalent ignorance of health-promoting nutrition and food preparation among students, underscores the necessity for targeted educational programs.

Overall, the findings from the students' perspective reveal a complex interplay of factors influencing students' dietary choices in the university context. While there are evident barriers, such as financial constraints and limited variety in food options, there are likewise significant opportunities, particularly in leveraging students' candour to change and the social aspects of eating. Addressing these challenges requires a multifaceted approach, including enhancing food variety, tailoring educational programs to student needs, and considering the social dimensions of eating in university settings.

### **Perspective III: Employees**

The following results offer insights into the complex dynamics influencing employee engagement with communal catering.

#### *Category III.a: Status Group*

- Positive Aspects: Employees, depending on their status group, generally have better financial opportunities compared to students. This financial advantage results into a more diverse, potentially healthier, and more sustainable food choices within or outside the university catering system.
- Negative Aspects: However, this disparity in financial resources may create a divide in access to nutritious food options between employees and students, potentially affecting the overall campus food culture.

#### *Category III.b: Educational Argument*

- Positive Aspects: There is potential for targeted educational initiatives to address gaps in knowledge and correct misconceptions about sustainable nutrition.
- Negative Aspects: Ignorance, incorrect knowledge, and prejudices of sustainable nutrition are prevalent. Additionally, there is a lack of interest in the topic during everyday work, in particular among certain status groups, hindering the integration of these concepts into daily routines.

#### *Category III.c: Ethical Argument*

- Positive Aspects: Teaching staff has the potential to act as role models or multipliers in promoting sustainable nutrition practices.
- Negative Aspects: The perception of nutrition as a highly individual topic, influenced by personal habits and diversity, poses a challenge in establishing a uniform approach to promoting sustainable nutrition on campus.

#### *Category III.d: Social Argument*

- Positive Aspects: Eating together in the canteen with colleagues fosters a sense of community and provides opportunities for sharing and promoting healthy eating habits.
- Negative Aspects: Despite the communal aspect, such gatherings might not always focus on or encourage discussions about sustainable nutrition, missing an opportunity for collective awareness raising.

#### *Category III.e: Logistic Argument*

- Positive Aspects: The presence of communal catering offers provides a convenient option for employees to access food during work hours.
- Negative Aspects: Certainly, some employees not use the communal catering facilities, which might be due to perceived inadequacies in the canteen's offerings. This concerns either variety, healthiness, or alignment with personal dietary preferences.

In summary, while university employees have certain advantages, like financial resources and the potential to influence as role models, there are clear challenges in integrating sustainable and health-promoting nutrition into the communal catering system. These challenges include varying levels of knowledge and interest in the topic, individualized views on nutrition, and underutilization of communal catering facilities. Addressing these issues requires a multifaceted approach, including educational initiatives, role modelling by influential staff, enhancing the appeal of communal catering, and fostering a campus-wide culture of healthy and sustainable eating.

## Perspective IV: University management

The findings addressing the university management are categorized into public relations, general challenges, and individual needs, with each category indicating both positive and negative aspects, influencing the implementation and perception of such initiatives.

### *Category IV.a: Public Relations*

- Positive Aspects: The visibility of the university as a proponent of health-promoting initiatives can significantly enhance its reputation. Interventions by the chairperson, especially concerning political themes, can effectively elevate the university's profile as a leader in health and sustainability.
- Negative Aspects: However, such high-profile interventions include the risk of rendering the chairperson vulnerable, especially if outcomes are controversial or not well received. Balancing the university's image with realistic and achievable health, as well as sustainability promotion goals, is a delicate task.

### *Category IV.b: General Challenges*

- Positive Aspects: Addressing the diverse needs of all university members, including students and employees, could potentially make the university a more attractive and inclusive environment.
- Negative Aspects: It has been noted, that the disagreement between key figures in the university management (for example between the chairperson and vice-chairperson) can hinder the decision-making process. Additionally, meeting everyone's needs is a significant challenge, given the diverse preferences and dietary requirements within the university community.

### *Category IV.c: Individual Needs*

- Positive Aspects: Acknowledging individual needs and interests, including those of the university management, can foster a more personalized and user-oriented approach to communal catering.
- Negative Aspects: However, the personal preferences and needs of the university management can sometimes contradict the broader goals of the university's nutrition programs, creating a conflict of interest that may influence the effectiveness and acceptance of these initiatives.

To sum up, while the university management's perspective demonstrates a potential for enhancing the university's reputation and attractiveness through health- and sustainability promoting initiatives, this perspective also uncovers significant challenges. These include navigating public relations, managing internal disagreements, and balancing individual needs with collective goals. Addressing these issues requires a nuanced approach that considers the diverse needs and viewpoints within the university community, as well as the strategic implications of public-facing initiatives.



Tab. 1. Overview of the results of the workshop

I. Service Providers	II. Students	III. Employees of the university	IV. University management
<p><b>I.a political framework</b></p> <ul style="list-style-type: none"> <li>• lack of government incentives</li> <li>• subsidy</li> </ul> <p><b>I.b structure:</b></p> <ul style="list-style-type: none"> <li>• wholesale: Change of a good business model</li> <li>• conventional food producers</li> <li>• change of a well running business model</li> </ul> <p><b>I.c education</b></p> <ul style="list-style-type: none"> <li>• sustainability Manager</li> <li>• ignorance</li> </ul> <p><b>I.d conflict</b></p> <ul style="list-style-type: none"> <li>• student values</li> <li>• barriers: intervention on strongest political theme</li> <li>• Satisfy different needs</li> </ul> <p><b>I.e funding</b></p> <ul style="list-style-type: none"> <li>• Student services (Studierendenwerk): quality / costs</li> <li>• costs / purchase prices (wholesale)</li> </ul>	<p><b>II.a environmental factors</b></p> <ul style="list-style-type: none"> <li>• time resources (eat between lectures)</li> <li>• financial resources, availability</li> </ul> <p><b>II.b social culture</b></p> <ul style="list-style-type: none"> <li>• eat with fellow students</li> <li>• culturally influenced eating behaviour</li> </ul> <p><b>II.c individual needs</b></p> <ul style="list-style-type: none"> <li>• preference for plant-based nutrition</li> <li>• taste</li> <li>• frustration due to monotonous choices</li> </ul> <p><b>II.d individual requirements</b></p> <ul style="list-style-type: none"> <li>• allergies</li> </ul> <p><b>II.e education</b></p> <ul style="list-style-type: none"> <li>• general candour to new things</li> <li>• ignorance about health-promoting nutrition / food preparation</li> </ul>	<p><b>III.a status group</b></p> <ul style="list-style-type: none"> <li>• depending on status group</li> <li>• tend to have better financial opportunities (compared to students)</li> </ul> <p><b>III.b educational argument</b></p> <ul style="list-style-type: none"> <li>• ignorance, false knowledge of the topic, prejudices</li> <li>• depending on status group: no interest in the topic in everyday work</li> </ul> <p><b>III.c ethical argument</b></p> <ul style="list-style-type: none"> <li>• role model / multiplier role of employees of the university (e.g. professors)</li> <li>• nutrition as an individual topic + habits (diversity)</li> </ul> <p><b>III.d social argument</b></p> <ul style="list-style-type: none"> <li>• eating together with colleagues</li> </ul> <p><b>III.e logistic argument</b></p> <ul style="list-style-type: none"> <li>• no use of communal catering</li> <li>• offer of the canteen</li> </ul>	<p><b>IV.a public relation</b></p> <ul style="list-style-type: none"> <li>• Visibility of the university</li> <li>• chairperson: intervention on strongest political theme</li> <li>• chairperson: risk of making yourself vulnerable</li> <li>• reputation: health-promoting university</li> </ul> <p><b>IV.b general challenges</b></p> <ul style="list-style-type: none"> <li>• meet everyone's needs (students - employees of the university)</li> <li>• disagreement (chairperson – vice-chairperson)</li> <li>• draw card in the university</li> </ul> <p><b>IV.c individual needs</b></p> <ul style="list-style-type: none"> <li>• own interest</li> <li>• University management is contrary to own needs</li> </ul>

\*Originally, the moderation cards used in the workshop contained labels indicating positive and negative aspects. To provide a better overview these labels were omitted from the table. The breakdown into positive and negative aspects is to find in the text.

## 5. DISCUSSION

We were able to examine several viewpoints and opinions with regard to the drivers and barriers to sustainable and health-promoting nutrition in universities. The analysis encompasses the interplay of values and norms, political frameworks, socialization, and other relevant factors. From the perspective of management, public relations and political themes significantly shape the approach to sustainable nutrition. The visibility of the university, particularly through the chairperson's interventions, plays a crucial role in defining its stance on health-promoting initiatives. However, this may leave the chairperson vulnerable to criticism, highlighting the delicate balance between advocating for change and maintaining a positive public image. This aspect resonates with the lack of government incentives and subsidies noted by employees and students, suggesting a broader need for political engagement and support in fostering sustainable university catering.

A universal challenge, recognized across all groups, is meeting the diverse dietary needs of the university community. This includes balancing the financial accessibility for students with the different dietary preferences and the needs of employees. The noted disagreement between university management figures, such as the chairperson and vice-chairperson, further complicates this issue, reflecting a microcosm of broader societal debates about health and sustainability. Among all perspectives, individual needs and interests significantly influence the food choices. Students show a growing interest in plant-based diets, yet face challenges due to monotonous food choices and financial constraints. For employees, the balance between personal preferences and health-promoting diets emerges as a key concern. This is compounded by a general lack of knowledge and awareness about sustainable nutrition across all groups, indicating a crucial area for targeted educational initiatives.

Logistical factors, such as the use of communal catering and the offerings of the canteen, are pivotal in shaping eating habits. This is particularly evident from the employees' perspective, where personal convenience often dictates food choices. Moreover, the social aspect of dining, highlighted by the practice of eating together among students and employees, offers both a challenge and an opportunity. While it can reinforce certain dietary patterns, it also provides a platform for promoting healthier and more sustainable food choices.

In synthesizing these findings, it becomes evident that promoting sustainable and health-promoting nutrition in university communal catering requires a holistic and multifaceted approach. This approach must consider the intricate balance between public relations, individual needs, and general challenges while leveraging educational opportunities and logistical frameworks. Effective strategies could include enhancing the visibility of sustainable initiatives through management support, integrating these initiatives into the university's public image, and advocating for political support and incentives. Addressing the diverse dietary needs and preferences of the university community, both in terms of financial accessibility for students and varied options for employees, is fundamental. Furthermore, educational programs targeting misconceptions and gaps in knowledge about sustainable nutrition could play a pivotal role in shifting dietary habits.

The social aspects of dining in university settings should not be underestimated. These social interactions provide a unique opportunity to influence dietary choices and promote a culture of health and sustainability. Lastly, logistical considerations, including the appeal and accessibility of communal catering options, are critical in encouraging the use of these facilities.

Overall, the pursuit of sustainable and health-promoting nutrition in university settings is not just a matter of offering the right food options, but also about creating an environment where these choices are supported, understood, and integrated into the daily lives of all members of the university community, from students to top-level management.

The method used in this research, primarily a workshop format, presents several limitations:

- Perspective Limitation: The participants in the workshop were required to adopt a different perspective to their own (e.g., students adopting the perspective of university management, or vice versa). This methodology might not accurately capture the true sentiments and insights of each stakeholder group. Authentic perspectives are crucial for understanding the real drivers and barriers to sustainable nutrition in university settings. This limitation indicates that the findings might not fully reflect the genuine concerns and motivations of each group. The workshop should therefore be repeated with real perspectives.
- Participant Diversity: While the study aimed to include various characteristics such as age, gender, educational, and migration backgrounds, the number of the actual participants in the workshop might not have been sufficient to represent the wide range of experiences and viewpoints within a university setting. This may limit the generalizability of the findings.
- Small Sample Size: The workshop involved only six participants from different organizations and professional backgrounds. Such a small sample size may not provide a comprehensive understanding of the complex dynamics involved in university communal catering. A larger and more diverse participant pool would likely yield more robust and representative insights.
- Subjectivity and Bias: The workshop method relies heavily on subjective perceptions and interpretations. Participants' responses might be influenced by their personal biases or limited understanding of the topic, which may skew the results.
- Lack of Longitudinal Data: The workshop format provides a snapshot of opinions and perceptions at a specific point in time. It does not account for how these perceptions might evolve over time, especially as universities implement different strategies for sustainable nutrition.
- Limited Depth in Exploration: While workshops can be effective for brainstorming and gathering a range of ideas, they might not allow for in-depth exploration of each topic. Complex issues like sustainable nutrition require a more detailed analysis, which simply can not be achieved in a single workshop session.

To overcome these limitations, future research could involve a larger and more representative sample of participants, by using a longitudinal study designs to track changes over time, and employ mixed methods combining qualitative and quantitative approaches for a more comprehensive analysis. Additionally, ensuring that participants are expressing their own perspectives, rather than adopting others', may provide more authentic and valuable insights.

## 6. CONCLUSION

The article presents the complexities of implementing sustainable and health-promoting nutrition in university communal catering. It highlights the varied perspectives of stakeholders such as students, employees, university management, and service providers, emphasizing the need for a comprehensive, multifaceted approach to address these challenges.

The key conclusions of the article are as follows:

- Diverse Stakeholder needs and viewpoints: The study identifies the diverse needs and viewpoints of different university community members. This diversity requires tailored strategies to effectively promote sustainable nutrition.
- Financial Constraints and Dietary Needs: Financial limitations and diverse dietary preferences are major barriers to implement sustainable nutrition. These challenges necessitate innovative funding models and varied food options to cater to different needs.
- Educational Gaps and Awareness: A lack of awareness and knowledge about sustainable nutrition among all stakeholders is a significant barrier. Targeted educational initiatives are crucial to bridge these gaps and promote a culture of sustainable eating.
- Logistical Challenges: The study underlines the importance of logistical factors, such as the accessibility and appeal of communal catering options. Improving these aspects can greatly enhance the adoption of healthier and more sustainable eating habits.
- Social and Cultural Dimensions: The social aspect of dining in university settings is a powerful tool. Leveraging this can assist in shaping dietary habits and promoting a culture of health and sustainability.
- Integration into University Life: The ultimate goal is to create an environment where sustainable food choices are not only available but are also well-understood and an integrated part of university life, from students to top-level management.
- Public Relations and Management Support: The role of university management in enhancing the visibility and integration of sustainable initiatives into the university's public image is vital. Advocating for political support and incentives is equally essential.

Moreover, it's important to consider how other studies have addressed similar challenges in communal catering. Research often suggests that successful implementation of sustainable nutrition programs hinges on multi-stakeholder engagement, continuous education, and adapting to cultural and social dynamics. For example, previous research shows that student-led initiatives can significantly affect the adoption of sustainable practices in university settings. Additionally, research indicates that aligning sustainable nutrition programs with broader institutional goals and values can enhance their effectiveness and acceptance. (e.g. Mohammadi et al., 2022)

In the pursuit of fostering sustainable and health-promoting nutrition in university communal catering, it is further imperative to approach the challenge through a multidimensional lens. This calls for concerted actions from various sectors, each playing a pivotal role in steering the initiative towards success. The recommendations outlined below are structured to address the distinct yet interconnected realms of politics, economy, and science. Each set of recommendations is tailored to leverage the unique strengths and capabilities of these sectors, ensuring a comprehensive and synergistic approach. These recommendations aim to create a robust foundation for integrating sustainable nutrition into the fabric of university life. The goal is to not only change the available dining options but also to cultivate a culture where sustainable and healthy choices are the norm, supported by a collaborative effort from all stakeholders.

#### *From a Political Perspective*

- Policy Development and Incentives: Governments should develop policies that support sustainable nutrition in educational institutions. This can include subsidies for sustainable food options, tax breaks for institutions that prioritize sustainable practices, and funding for research in this area.
- Regulatory Frameworks: Establishing regulations that mandate the inclusion of sustainable and health-promoting foods in communal catering can help drive transformation. For instance, setting minimum standards for the proportion of organic or locally sourced food in university cafeterias.

- Public Awareness Campaigns: Governments can initiate or support campaigns to raise awareness of the importance of sustainable nutrition, particularly targeting young adults in university settings.

*From an Economic Perspective*

- Investment in Sustainable Practices: Encourage investment in sustainable food production and supply chains. Universities can collaborate with local producers to create a more sustainable and economically beneficial system.
- Cost-Benefit Analysis: Universities should conduct cost-benefit analyses to understand the economic impacts of implementing sustainable nutrition practices. This may help in making a case for investment and support from various stakeholders.
- Entrepreneurial Opportunities: Promote entrepreneurial ventures in the area of sustainable catering and food technology. This can open up new markets and economic opportunities, providing a financial incentive for sustainable practices.

*From a Scientific Perspective*

- Research and Development: Increased focus on research into sustainable nutrition, food production methods, and consumer behaviour can provide valuable insights for implementing effective strategies in university settings.
- Collaborative Projects: Encourage collaborative projects between universities and research institutions to innovate in the field of sustainable food production and catering services.
- Education and Training: Integrate courses and modules on sustainable nutrition into university curriculums to educate the future workforce and leaders about the importance and practicalities of sustainable food practices.

By integrating these perspectives into the conclusion, it becomes evident that the implementation of sustainable and health-promoting nutrition in university communal catering is not just a matter of changing menus, but a comprehensive strategy that involves political support, economic investment, and scientific innovation. Each of these domains play a crucial role in creating a systemic change towards more sustainable and healthy eating practices in university communities.

Overall, we argue that achieving sustainable and health-promoting nutrition in university settings requires a holistic approach. The ultimate target is to create an environment where sustainable food choices are supported, understood, and integrated into the daily lives of the university community. The article suggests that the pursuit of this goal is not just about offering the right food options but also about fostering a culture of health and sustainability.

## 7. REFERENCES

- Avery, A. (2022). Sustainable Nutrition. *Kompass Nutrition & Dietetics*, 2(2), 53–54.  
<https://doi.org/10.1159/000526843>
- FAO and WHO. (2019). *Sustainable healthy diets: Guiding principles*. Food and Agriculture Organization of the United Nations : World Health Organization.
- Koerber, K. von, Bader, N., & Leitzmann, C. (2017). Wholesome Nutrition: An example for a sustainable diet. *Proceedings of the Nutrition Society*, 76(1), 34–41.  
<https://doi.org/10.1017/S0029665116000616>
- Meier, T. (2015). Sustainable nutrition between the poles of health and environment. Potentials of altered diets and avoidable food losses. *Ernährungs Umschau*, 60(2), 22–33.  
<https://doi.org/10.4455/eu.2015.005>
- Mohammadi, Y.; Monavvarifard, F.; Salehi, L.; Movahedi, R.; Karimi, S.; Liobikienė, G. (2022). Explaining the Sustainability of Universities through the Contribution of Students' Pro-Environmental Behavior and the Management System. *Sustainability* **2023**, 15, 1562.  
<https://doi.org/10.3390/su15021562>
- Orme, J., & Dooris, M. (2010). Integrating health and sustainability: The higher education sector as a timely catalyst. *Health Education Research*, 25(3), 425–437.  
<https://doi.org/10.1093/her/cyq020>
- Patel, A. I., & Schmidt, L. A. (2020). Healthy beverage initiatives in higher education: An untapped strategy for health promotion. *Public Health Nutrition*, 24(1), 136–138.  
<https://doi.org/10.1017/s1368980020003766>
- Pfefferle, H., Hagspihl, S., & Clausen, K. (2021). Gemeinschaftsverpflegung in Deutschland – Stellenwert und Strukturen. *Ernährungs Umschau*, 68(8), 470–483.  
<https://doi.org/10.4455/eu.2021.034>
- Renner, B., Arens-Azevedo, U., Watzl, B., Richter, M., Virmani, K., & Linseisen, J. (2021). DGE position statement on a more sustainable diet. *Ernährungs Umschau*, 68(7), 144–154.  
<https://doi.org/10.4455/eu.2021.030>

## **Acknowledgement**

Considering the global developments in the fields of economy, ecology and social affairs, we believe that as a university we have a responsibility to contribute to sustainability and sustainable development. From the university's perspective, sustainability is one of the main issues that is being developed within the strategy process in coordinated fields of action. This provides the framework for the sustainable transformation of HSBI at all levels and is implemented operationally through projects and measures from interdisciplinary teams.

Act2Sustain is a university-wide approach to sustainability. For us, this includes the areas of study & teaching, research & transfer, campus life, building life cycle and administration & governance, which are operationally represented by our working groups. The project is managed by the Vice President for Sustainability and Strategic HR Management and her team.

Act2Sustain follows a broad participatory approach through which shaping HSBI's sustainability transformation is open to all members of the university across disciplines. In this process, ideas for the university-specific sustainability strategy are developed together, which are both systematically set up and pragmatically implemented.

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## **CRedit authorship contribution statement**

KJW: Conceptualization, Findings, Discussion, Conclusion, Writing – original draft. AE: Conceptualization, Methodology, Aim, Findings, Writing – original draft & editing. MK: Conceptualization, Introduction, Writing – review & editing. TS: Introduction, Supervision, Writing – review.

## **Declaration of competing interest**

All authors declare that they have no conflicts of interest.