

Moldavian consumer perceptions and preferences for plant-based food

Cristina Popovici¹, Xin Mei Teng^{2, 3}, Ravi Jadeja^{2, 3}

¹ Department of Food and Nutrition, Faculty of Food Technology, Technical University of Moldova, 168 Stefan cel Mare si Sfânt blvd., Chisinau, MD 2004, Republic of Moldova

² Robert M. Kerr Food & Agricultural Products Center, Oklahoma State University, Stillwater, OK 74078, USA

³ Department of Animal & Food Sciences, Oklahoma State University, Stillwater, OK 74078, USA

INTRODUCTION & AIM

- Plant-based food (PBF) has developed rapidly in recent years as a response to growing interest in their potential benefits as healthier, animal-friendly, and more environmentally sustainable options, with challenges in consumer beliefs/perceptions [1, 2].
- The motivation behind the development of PBAs is to provide options that taste like conventional animal products, with the assumption that greater similarity to animal products will improve acceptance [3, 4].
- Previous attempts to reveal how consumers perceive PBA relative to animal-derived products have largely focused either on meat alternatives broadly [5, 6].
- Person-related factors are also associated with perceptions, attitudes, and consumption of PBAs. For example, concern for animal welfare, health, and the environment are associated with interest and motivation to consume PBA [7, 8].
- Considering the growing concern among consumers regarding the fear of food processing and mistrust for food products, including PBA [9], it is important to identify how consumers perceive the category.



In this study, opinion surveys were carried out to identify Moldavian consumers' perceived benefits/barriers regarding PBF. The primary objectives of current study were to

- assess how Moldavian consumers perceive PBAs relative to animal-based foods, and
- identify person-related factors that predict PBA acceptance.

METHOD

- This study was conducted according to Regulation(EU) 2016/679, the Declaration of Helsinki, and approved by the Ethics Committee of the Technical University of Moldova (TUM) (protocol code 011/2024).
- Before filling out a questionnaire, participants were informed that their participation in the survey would be made anonymous and that it would be carried out at the TUM and they were told what the purpose of this study was, having to choose if they would voluntary participate or not.
- An online survey was conducted using the Google Forms platform. Recruitment was carried out by sending email invitations and disseminating the survey on social networks, using the snowball sampling method.
- The sample size was 186 valid cases, the confidence level was 95% ($k=2$), $p=q=50$, and the sampling error was 4.9%.
- The survey was composed of closed questions and divided into four sections:

Survey structure and questions

- 1 Participants' sociodemographic, economic, and diet factors
- 2 Perceived PBF knowledge and purchase intention
- 3 Perceived PBF barriers
- 4 Perceived PBF benefits and market extension

ACKNOWLEDGMENTS

This research was supported by the Institutional Project, subprogram 020405 “Optimizing food processing technologies in the context of the circular bioeconomy and climate change”, Bio-OpTehPAS, implemented at the Technical University of Moldova.

RESULTS & DISCUSSION

Table 1. Sociodemographic data of the participants ($n=186$)

Demographic Attributes & Characteristics	n	%	Demographic Attributes & Characteristics	n	%
Gender			Occupation		
• Male	38	20.3	• Student	76	40.6
• Female	149	79.7	• Employed	57	30.5
Age			• Entrepreneur	21	11.2
• < 18	55	29.4	• Unemployed	21	11.2
• 8-25	54	28.9	• Retired	12	6.4
• 26-35	28	15.0	Geographic location in Moldova		
• 36-50	29	15.5	• North	78	41.4
• > 50	21	11.2	• South	21	11.3
Education			• Center	70	37.6
• High school graduate	59	31.6	• East	10	5.4
• Secondary school graduate	46	24.6	• West	8	4.3
• University graduate	48	25.7			
• Post graduate	34	18.2			

Participant's perceived PBF knowledge and purchase intention

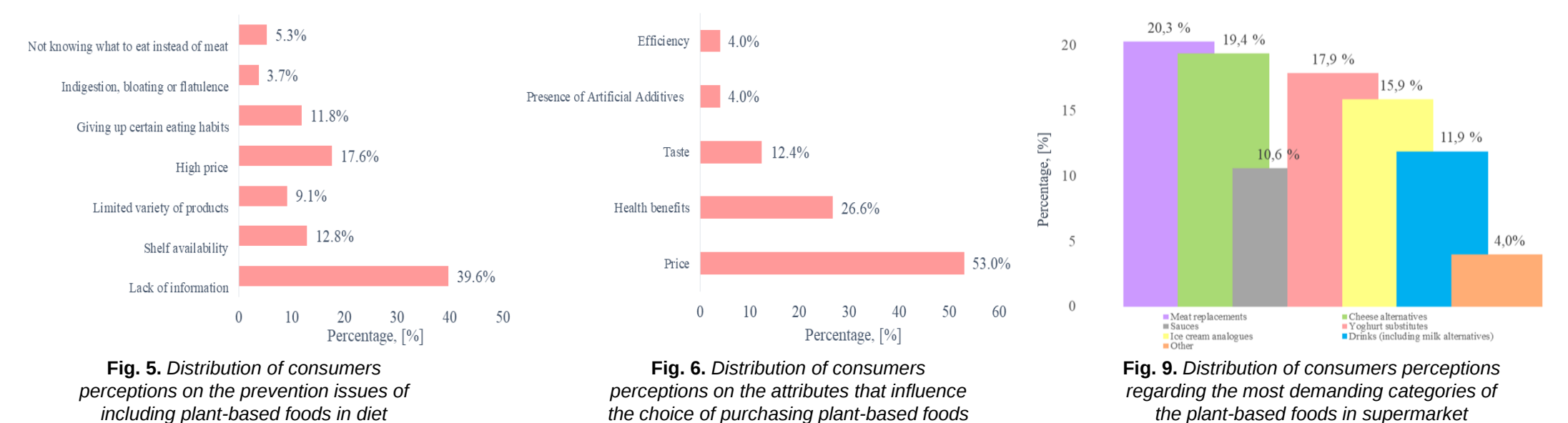
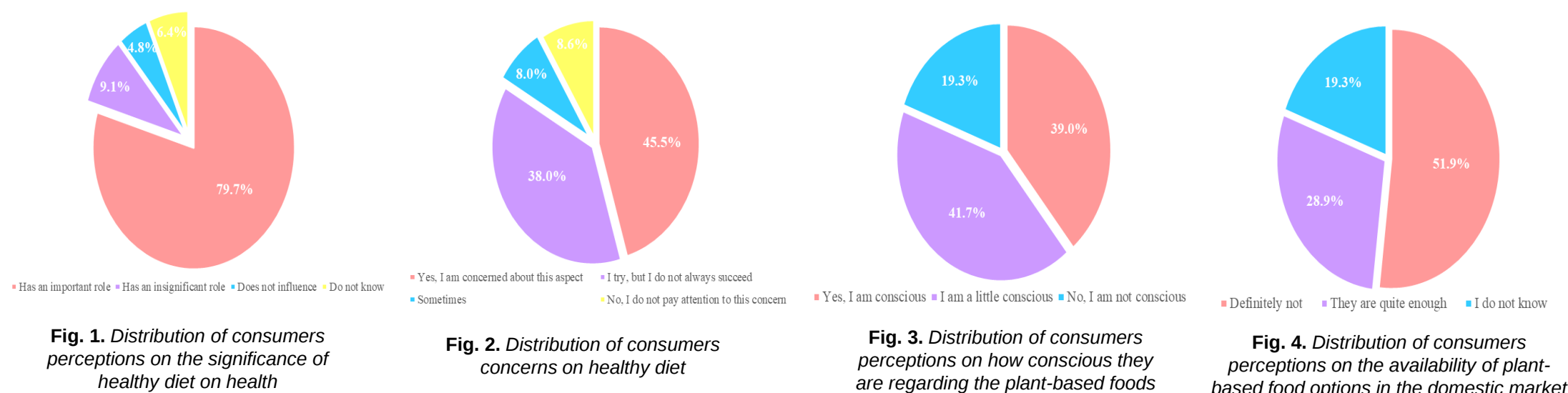


Table 2. Results regarding the subjective norm, restaurants visits & environmental consciousness of plant-based food ($n=186$)

Constructs	n	%	Constructs	n	%
Would you like to learn more about plant-based foods and their health benefits?			What plant-based foods would you like to see more often in a supermarket?		
• Yes, this information can be helpful in adopting healthy eating habits	170	90.9	• Meat	38	20.3
• No, I am not interested	17	9.1	• Cheese	36	19.4
Do you or someone close to you know people who have implemented a plant-based diet?			• Sauces	57	30.6
• Yes, this type of diet is typical for me	89	47.6	• Yoghurt	33	17.9
• Yes, I know people who follow this type of diet	51	27.3	• Ice cream	30	15.9
• I have met quite rarely	27	14.4	• Drinks	22	11.9
• No, I do not know	20	10.7	• Other	8	4.0
Do you think that a plant-based diet can positively contribute to the health of people who use it?			Would you like to visit a PBFs restaurants?		
• Yes, it may have a significant role	149	79.7	• If I have a chance, I will visit a PBFs restaurant	81	43.4
• Yes, it may have an insignificant role	17	9.1	• I will visit a PBFs restaurant	58	31.2
• No	7	3.7	• I would like to visit a PBF restaurant if it has a PBFs menu	47	25.4
• I do not know	14	7.5			
Do you think it is necessary to extend plant-based food options?			Do you think that plant-based food is environmentally friendly?		
• Yes	151	80.8	• Yes	118	63.3
• No	25	13.2	• No	46	24.7
• It is difficult to judge	11	6.0	• I do not know	22	12.0

CONCLUSION

Of the participants, 69.7% were women and 63.5% had completed university studies. Consumers (88.9%) had intermediate knowledge about PBF and 79.6 % expressed a desire to consume PBF. An important factor in PBF purchase decision was its positive effect on health and the environment ($p<0.05$). Participants (45.3%) experienced barriers with PBF's high price, its low availability and difficulties in changing eating habits. Popular PBFs were meat substitutes, dairy alternatives and beverages ($p<0.05$). Conjoint analysis showed that interest towards PBF did not differ between genders but did between participants' age, education and diet ($p<0.05$).

FUTURE WORK / REFERENCES

Future studies for specific PBF groups may offer new outcomes in consumer perception studies.

- Popovici, C., Teng, X.M., Jadeja, R. Development of the plant-based cheese alternatives using walnuts nutritional potential. Proceedings of the 7th International Conference New Trends on Sensing - Monitoring - Telediagnosis for Life Sciences NT-SMT-LS 2024, Brasov, Romania, p. 69.
- Swann, C., Kelly, M. Disruption in the meat industry: new technologies in nonmeat substitutes, *Bus Econ*, vol. 58, no. 1, pp. 42–60, 2023, doi: 10.1057/s11369-023-00302-w.
- Hartmann, C., Furtwaengler, P., Siegrist, M. Consumers' evaluation of the environmental friendliness, healthiness and naturalness of meat, meat substitutes, and other protein-rich foods, *Food Quality and Preference*, vol. 97, p. 104486, 2022, doi: 10.1016/j.foodqual.2021.104486.
- Popovici, C., Teng, X.M., Jadeja, R. Walnut cheese-like alternatives as an innovation among dairy analogues. In: *Journal of EcoAgriTourism*, 2024, ISSN 1844-8577, Vol. 20, no. 2 (49), p. 5-12.