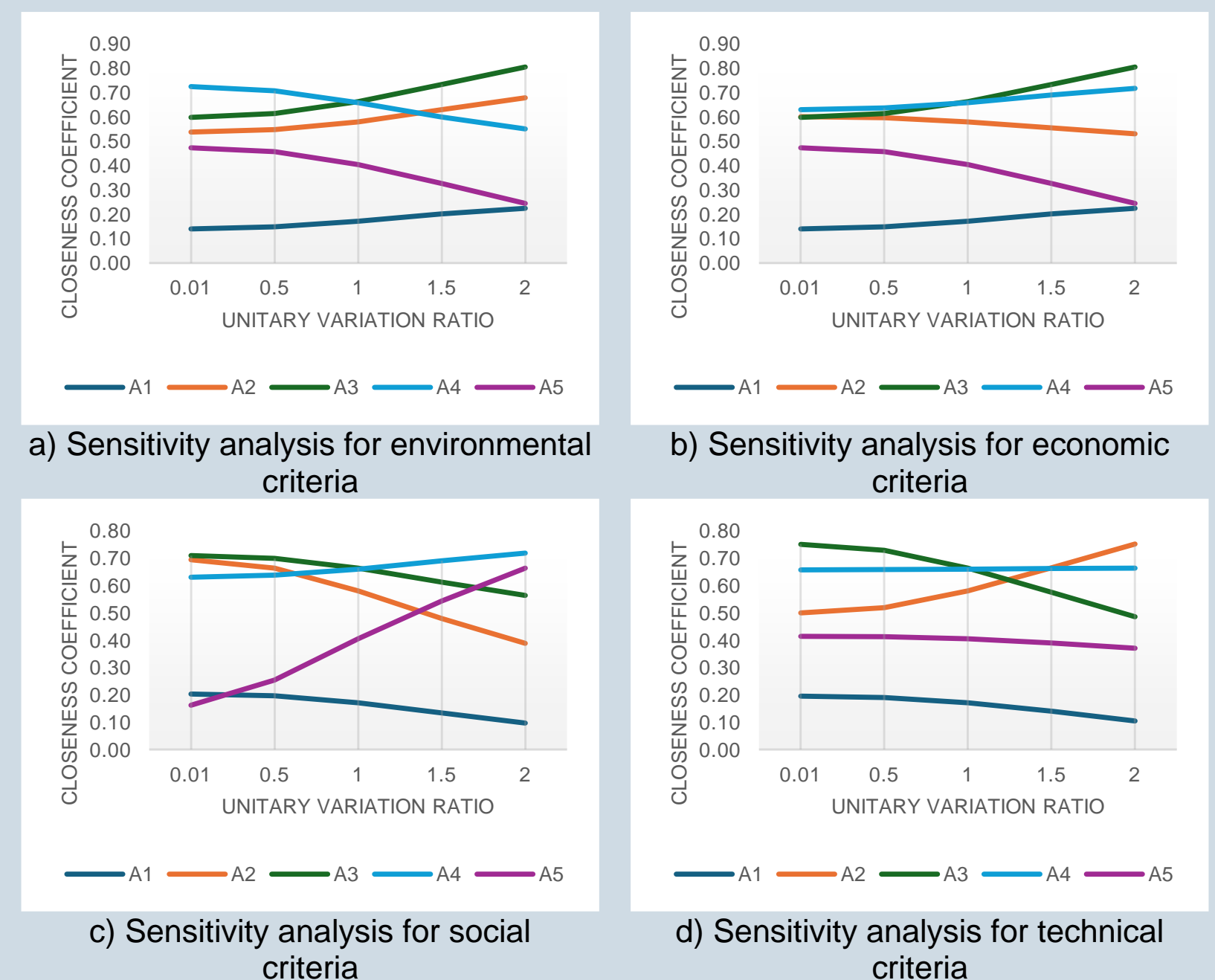


The obtained results show that making small changes in the composition and proportions of fish feed already has a positive effect on the environment



Introduction

The feed raw material production stage of animal products accounts for the largest share of GHG emissions, especially for pork, poultry, eggs, and farmed fish, where the share ranges from 70 % to 80%.

The industry is facing the challenge of improving feed compliance with fish production demand and improving feed sustainability is focused on partial replacement of marine resources with plant resources or another alternative. The risk of halieutic resource depletion is related to fish feed, as traditional fish feed uses wild fish to produce fish meal and fish oil

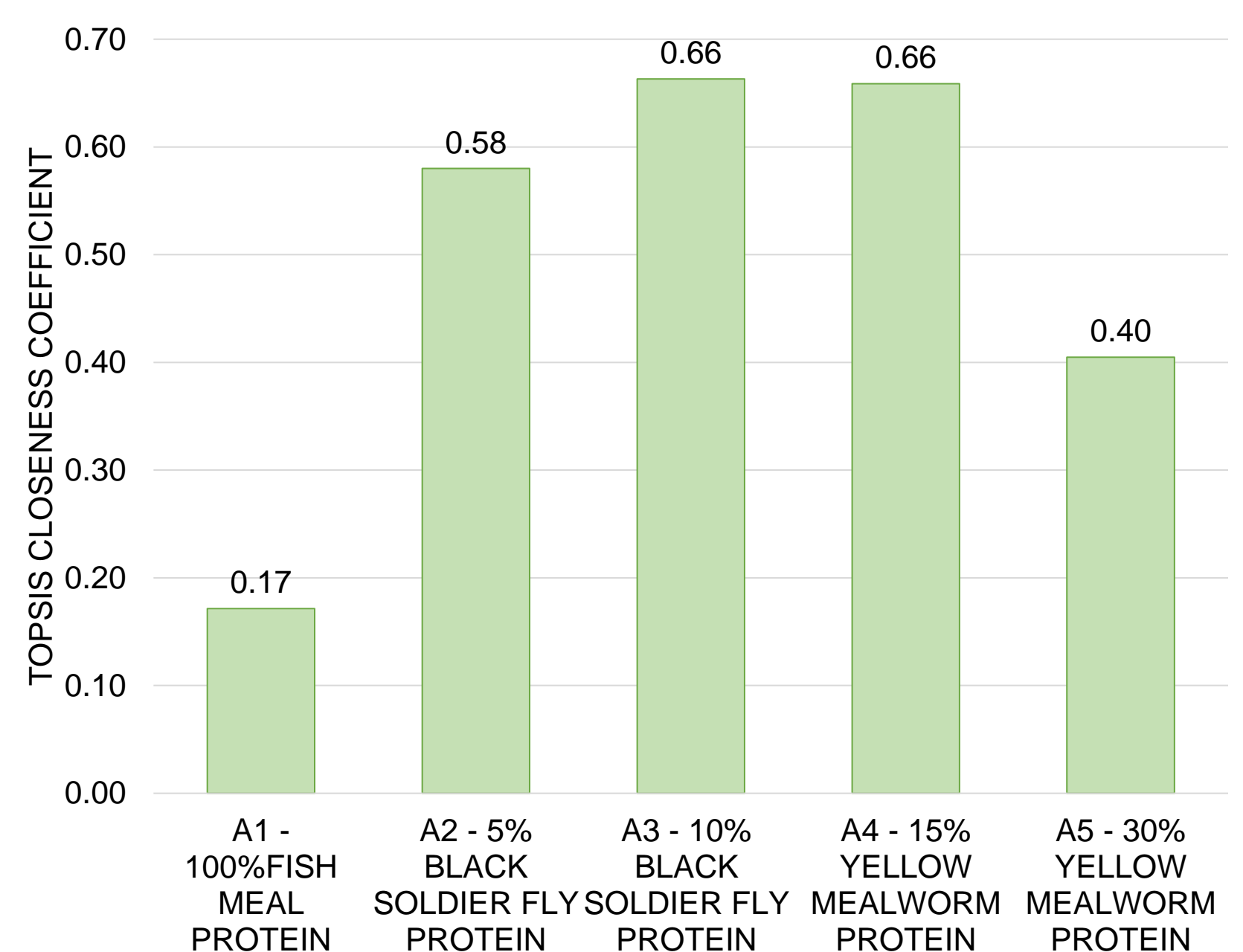
The aim of this research is to evaluate the sustainability of fish feed for several fish feed alternatives, considering environmental, economic, social, and technical parameters of fish feed.

Methods

Fish feed sustainability methodology consists of four phases:

1. analysis phase, the selection of criteria to assess the sustainability of fish feed
2. data collection, the necessary data are collected according to the criteria - proportions of feed ingredients, costs, social indicators and technical parameters
3. modeling phase, a model is created for the environmental, economic, social and technical dimensions
4. sustainability assessment phase, modelling results are used in MCDA method TOPSIS to determine the best fish feed composition according to environmental, economic, social, and technical parameters

Results



Conclusion

The obtained results show that making small changes in the composition and proportions of fish feed already has a positive effect on the environment, but it is necessary to consider all aspects, not only the effect of the environment or the composition of the feed on fish.

Composition of fish feed depends on the species of fish and the phase of growth and development of the fish, therefore the composition of fish feed and the sustainability of the feed will differ.

Conventional fish feed is increasingly being replaced by sustainable alternatives, but the alternatives tend to have a negative impact on the development and growth of the fish, and a comprehensive analysis of possible alternatives is required for the fish feed to become even more sustainable and reduce the impact on the environment.