



Creating value from waste: consumer acceptance of pig manure-based fertilizers in sub-Saharan African urban agriculture



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Introduction

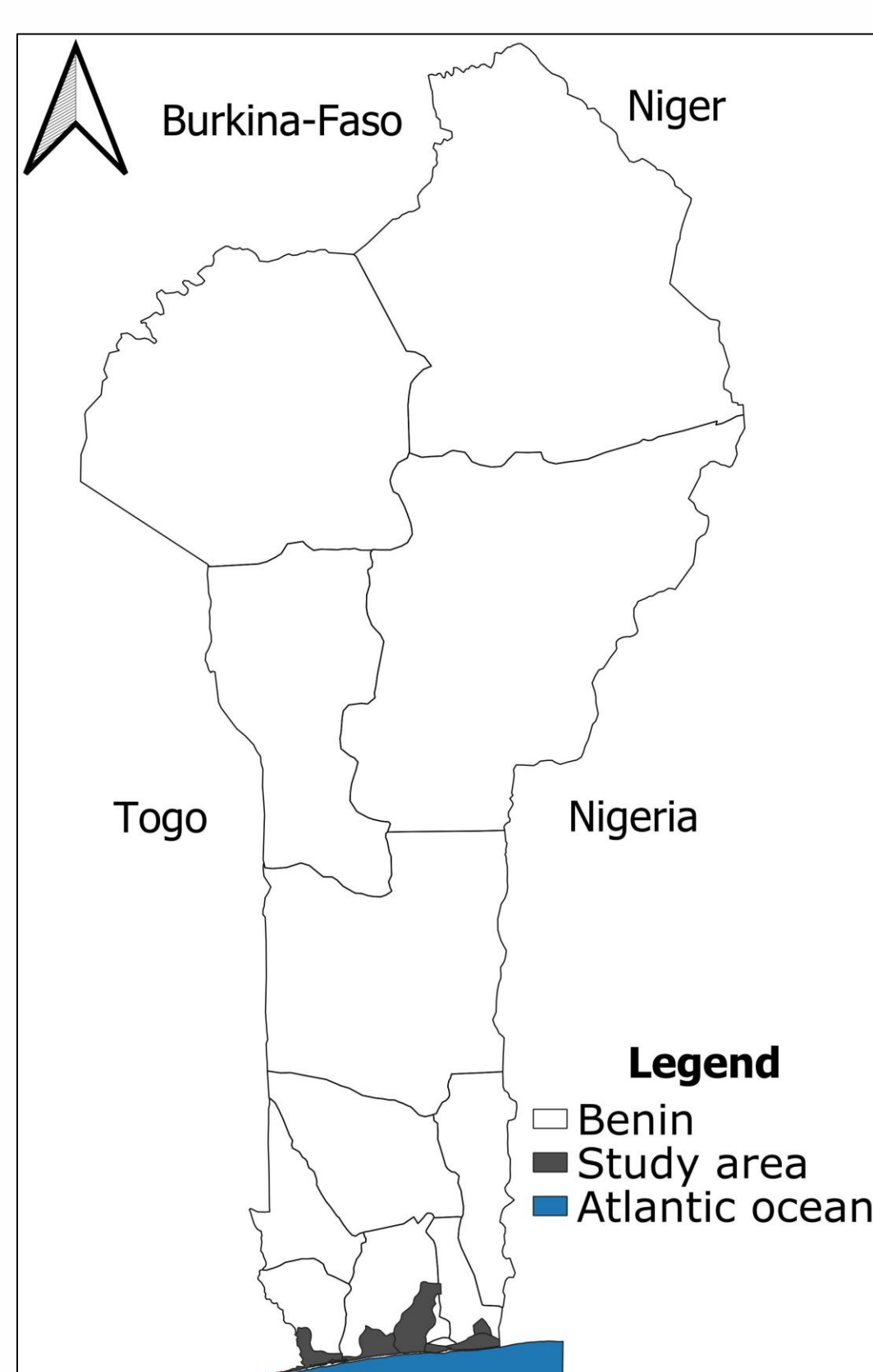
- Pig farming is expanding in Sub-Saharan cities, meeting food demand but creating waste and environmental challenges (Fig. 1).
- Sustainable solutions are needed to manage manure safely and protect urban ecosystems.
- Pig manure recycling provides an eco-friendly alternative to chemical fertilizers for urban farming.
- Consumer acceptance of vegetables grown with pig manure remains a major barrier to adoption.

➤ **Objective:** identify key factors influencing urban consumers' willingness to buy vegetables grown with pig manure



Fig. 1. Manure heap near pig pens in urban area

Material and methods



- 397 respondents from urban hubs and universities (Fig.2).
- KoboCollect survey on socio-demographics, perceptions, and willingness.
- Responses recoded: Yes = willing; No/Not sure = unwilling.
- Descriptive stats, multinomial regression, and decision tree in R.

Fig. 2. Map of the study area

Results

- 81% of respondents were under 35 years old.
- 94% had tertiary education.
- 76% respondents said yes, 14% not sure, 9% no to purchasing vegetables grown with pig manure fertilizers.**
- Perceived health risks were the top concern, with religion also playing a notable role (Fig. 3).
- 75% of respondents cited environmental risks like soil degradation, water pollution, and GHG emissions.**

Acknowledgments

Highlights

- More than **75%** of urban consumers express willingness to purchase vegetables cultivated with pig manure-based fertilizers, provided that safety standards are clearly met.
- Perceived health risks** are the main barriers.
- Religion and age shape consumer acceptance.
- Clear communication and culturally sensitive outreach are essential for building public trust and promoting the safe use of pig manure in urban agriculture.

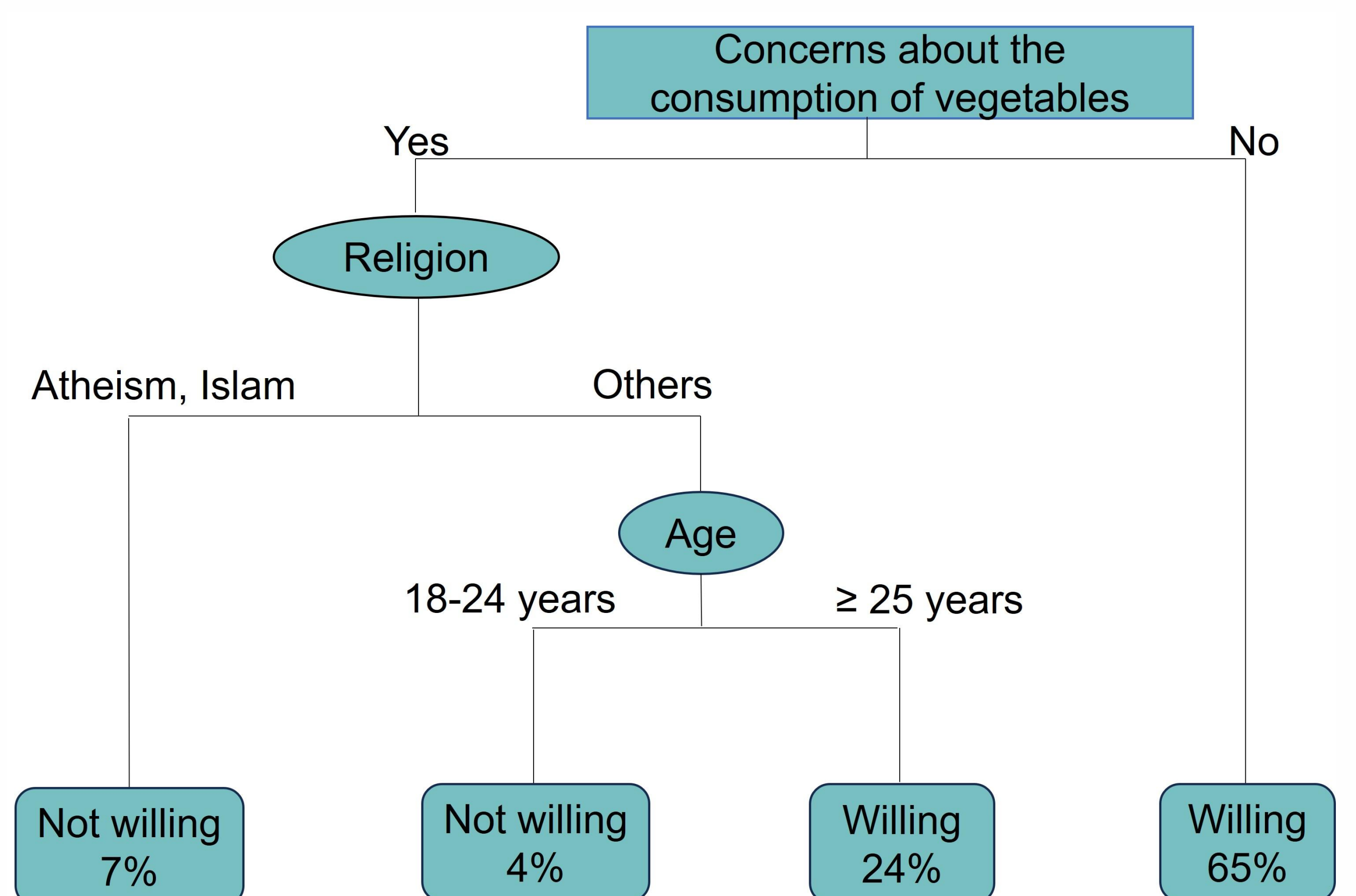


Fig. 4. Decision tree of consumer willingness to consume vegetables

- Multinomial regression identified perceived risks and general consumption concerns as significant predictors of willingness.
- Decision tree analysis showed **general concerns as the main determinant**, with religion and age further shaping willingness (Fig. 4).

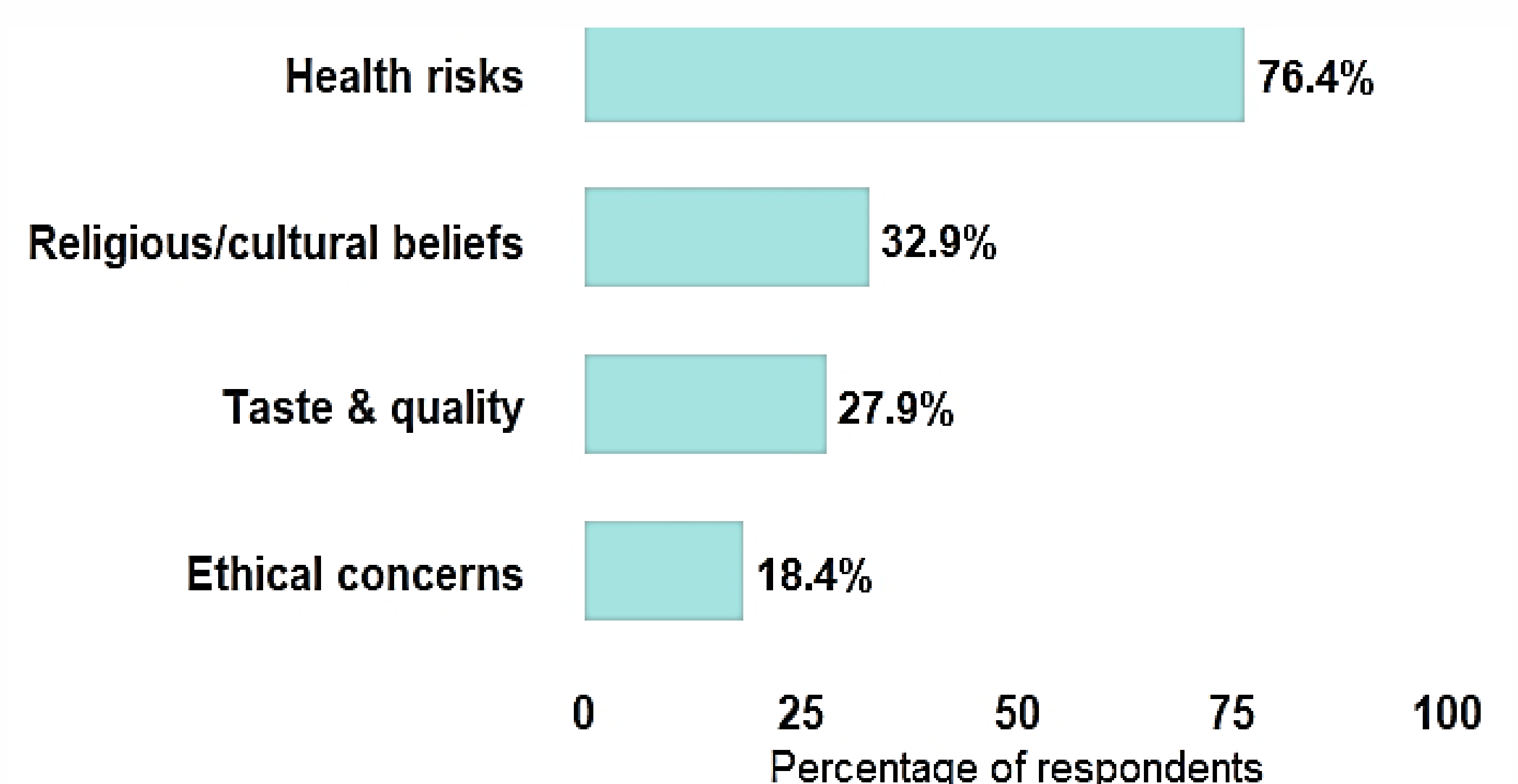


Fig. 3. Concerns about vegetables cultivated with pig manure-based fertilizers (multiple answers per respondent)

Limitations

- The high education level of the sample (94%) may limit the study's generalizability.

