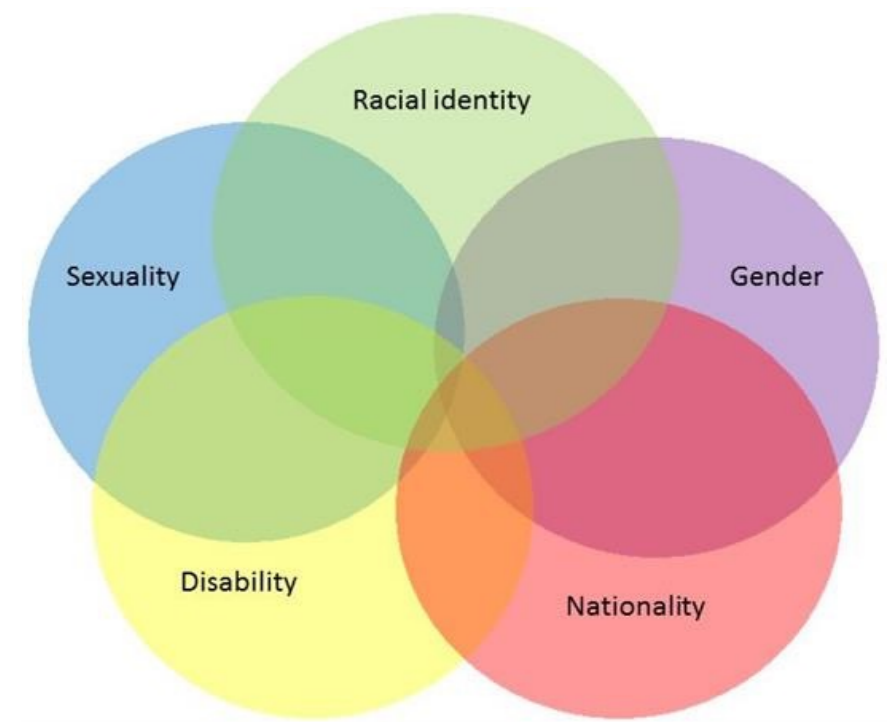


Adults are recommended by the WHO to consume at least 5 portions or 400 grams of fruits and vegetables per day (Eustachio Colombo et al., 2021). Despite the universal health benefits of fruit and vegetable consumption (FVC), merely 20 to 27% of the UK population has been estimated to adhere to the WHO norm (Tennant et al., 2014; Yau et al., 2019). Large sociodemographic inequalities in FVC, for instance in terms of gender or educational level, persist (Barton et al., 2015). It is not fully understood how inequalities jointly operate in their influence on FVC in the UK (Yau et al., 2019). Drawing on intersectionality theory (Bowleg, 2012; Crenshaw, 1991), this study looked at the simultaneous effects of educational level, gender, age, and ethnicity on FVC among UK adults. By identifying the effects of specific demographic combinations associated with a low FVC, this research seeks to inform policy to address potential structural barriers to healthy food consumption.



## SAMPLE AND DATA

- Sample: UK Household Longitudinal Study (UKHLS) data from Wave 9 (2017-2018) – Final sample: 17,016 individuals.
- Outcome: Binary measure of FVC (meeting the WHO 5-a-day recommendation or not)
- Intersections: 48 intersectional strata were created, based on combinations of educational levels, gender, age groups, and ethnic background



## METHODS

- MAIHDA → Multilevel analysis of individual heterogeneity and discriminatory accuracy was used
- The significance of each social stratum's interaction effect was assessed using the Intraclass-Correlation
- Results provide an indication whether multiplicative or additive effects explain variance in FVC

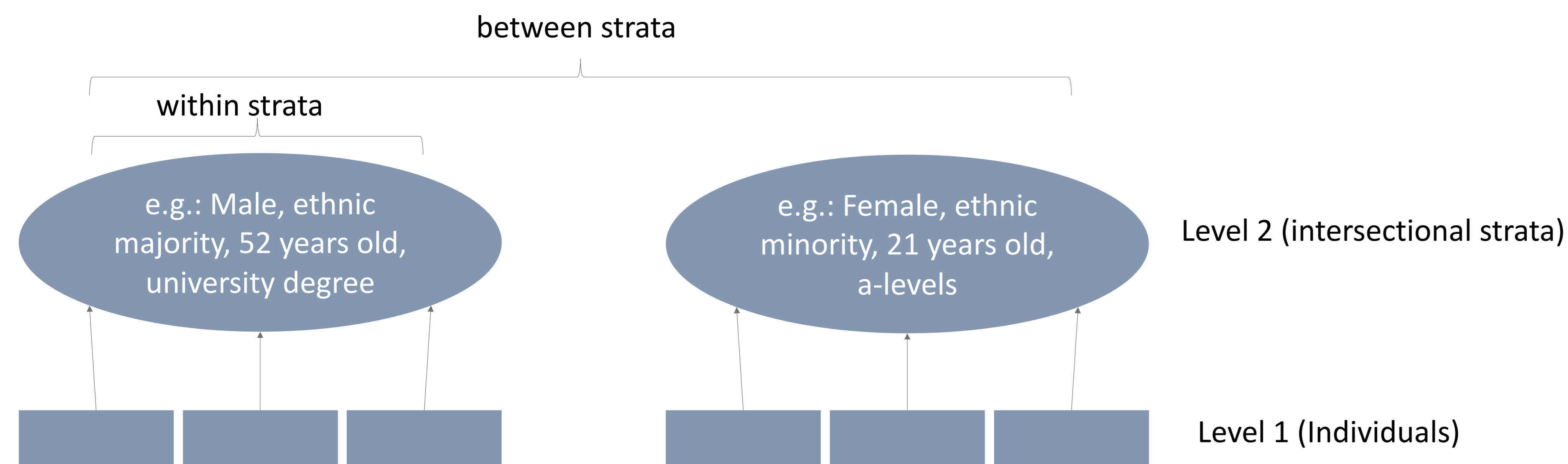


Fig. 1 Schematic illustration of the multilevel-model used. We expected participants FVC to be more similar within strata than between them.

## RESULTS

- 70% of the sample did not meet the 5-a-day FVC recommendation.
- Overall, at higher risk to not meet FVC were males, people belonging to the ethnic majority, younger and middle-aged participants, and those with lower educational levels.
- Educational level was the most significant social dimension in explaining variance in meeting the FVC norm
- No significant interaction effects among the included social strata were found
- Despite substantial differences in FVC between social strata, the interaction effects did not significantly explain the variance in FVC, suggesting that inequalities may be primarily driven by additive effects.

Social strata most at risk of low FVC:

- Middle-age, male, ethnic majority, no educational qualification (n = 157, incidence = 88.31%)
- Low-aged, male, ethnic majority, advanced level qualification (n = 1133, incidence = 85.59%)

Social strata least at risk of low FVC:

- Old-age, female, ethnic majority, with an educational qualification (n = 906, incidence = 49.68%)
- Middle-age, female, ethnic majority, with an educational qualification (n = 1265, incidence = 53.44%)

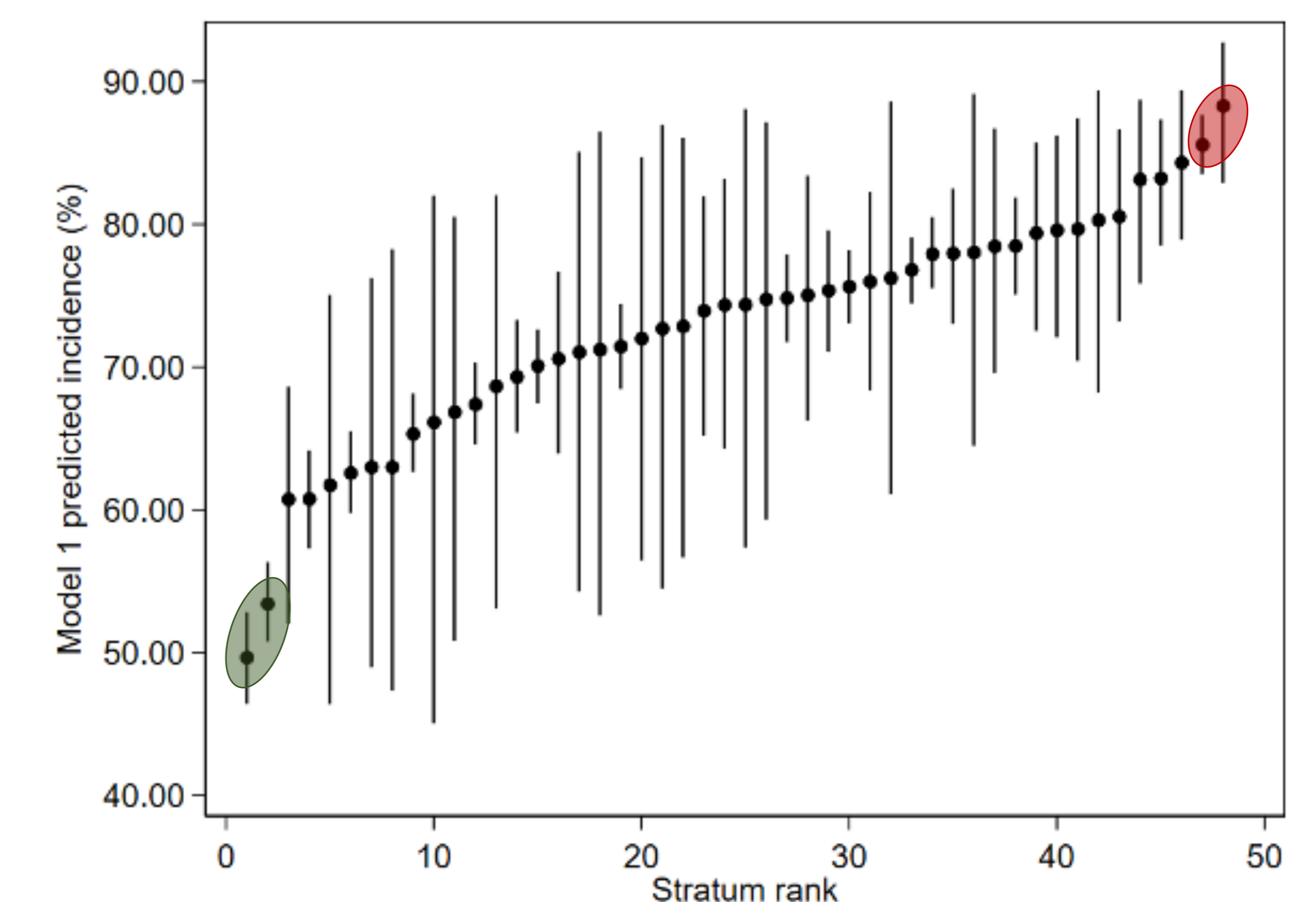


Fig. 2 Model 1 Predicted incidence for each stratum. The higher the rank, the higher the risk of not meeting the FVC recommendation.

## CONCLUSIONS

- Model Findings: Majority of between-strata variance explained by the additive rather than the multiplicative model. No evidence of reinforced (dis)advantages beyond additive effects was found.
- Primary Influence: Educational level had the largest influence on FVC. Barriers for lower educational levels include associated costs of FV-rich diets.
- Policy Recommendations: Address cost-related barriers to FVC and ensure universal year-round access to FV, especially in lower socioeconomic neighborhoods.

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