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Developing a Geo-intelligent Housing Submarket Classification Framework for England and Wales

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Introduction & Background

Large scale food purchase data obtained from the use of loyalty cards offers a novel way to measure household diet quality. A revised Healthy Purchase Index (rHPI) calculated based on the nutritional content of food items has previously been successfully used to estimate diet quality among French consumers, but it is unknown how well rHPI can be translated to other populations. (Perignon et al., 2023)

Objectives & Approach

The aim is to develop an index to describe diet quality using food purchase data, which would be applicable to households of minimal criteria on purchased volume and loyalty, and not dependent on household size. The index will be based on the rHPI previously developed by Perignon et al. The rHPI measures how closely the purchases of an individual align with the Finnish nutrition recommendations and is based on the nutritional content of the purchased food items. The index will be validated using subgroups of the data. Using the food prices available in the data, we also obtain information about the costs associated with different levels of diet quality.

Relevance to Digital Footprints

Food purchase data can provide valuable insight into the long-term diet quality. We seek collaboration partners to validate the index in different countries and populations and to further evaluate how rHPI relates to health outcomes.

Results

The data used in this study comes from the Finnish LoCard 3 study (www.locard.fi), which contains loyalty card data from Finland's largest grocery chain (market share of 48%). For this study, we included individuals who made at least one purchase during 2024. We then selected a random month for each individual and included the corresponding food purchase data per participant, with participant months evenly distributed across

all twelve months of the year. The total number of participants is 33 013, including 21 882 (66 %) women and with the median age of 54 years. The average number of items purchased per participant per month is 115.

The conference presentation will include a description of the process of developing the index and the initial results of the validation of the index.

Conclusions & Implications

The use of food purchase data collected widely as a part of loyalty card programs could be used to assess diet quality and it might provide insight into dietary inequalities, affordability of healthy diet and the connections between long-term diet and health.

Keywords

nutrition, food purchase data, health informatics, loyalty cards

