O-live: Smart Targeting of Personalised Food Advice

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The EIT is a body of the European Union

May 2019

Project Team

- O-Live is a collaboration between the University of Reading, Analytics Engines and EUFIC

EIT Food is supported by the EIT
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Overview

- Arises out of previous projects on cognitive biases, sensory preferences and food purchasing
- Project Goals
  - build models that integrate existing and user-provided data sets to provide novel insights into food purchasing behaviour
  - provide targeted advice and interventions that are tailored to consumers' health goals, factoring in cognitive, sensory and economic factors that influence their behaviour
  - these "smart nudges" should better enable consumers to make sustained and effective change to healthier food choices.

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Workstreams

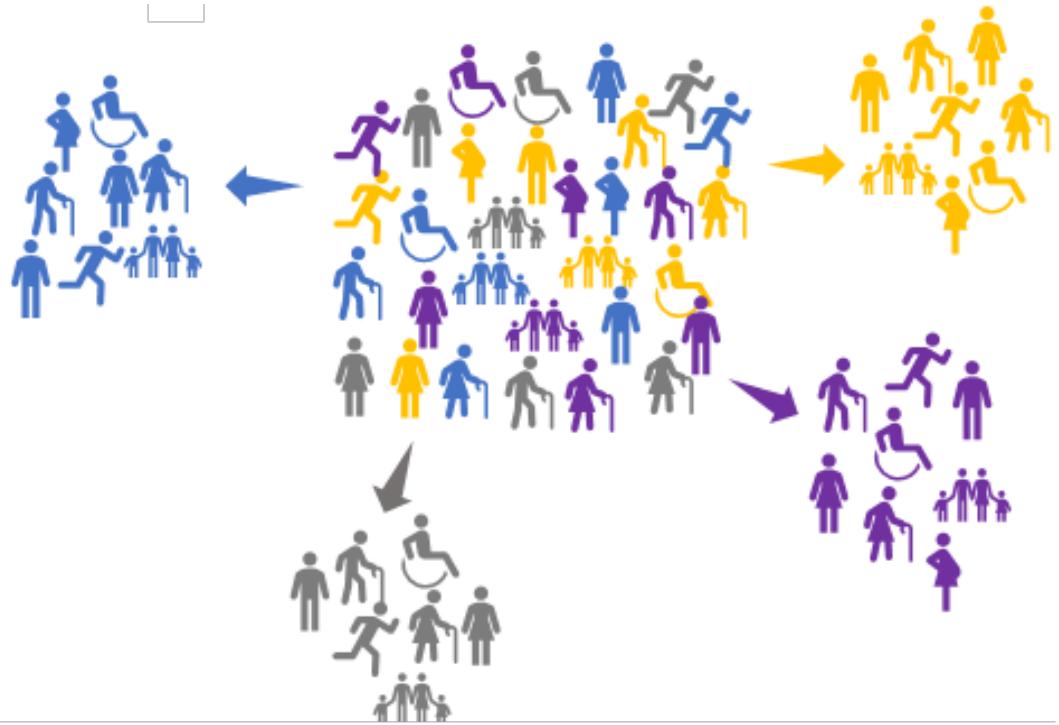
- Data modelling
- Building typing tools
- Designing smart nudge-based advice

- By integrating these three workpackages we aim to develop tools that help tailor advice strategies so that they work more effectively with the cognitive, sensory, and economic characteristics of the individual

Data Modelling

Model - Motivation

- Consumers may outwardly look similar, but the way they purchase food, process information, make decisions and perceive taste may be different



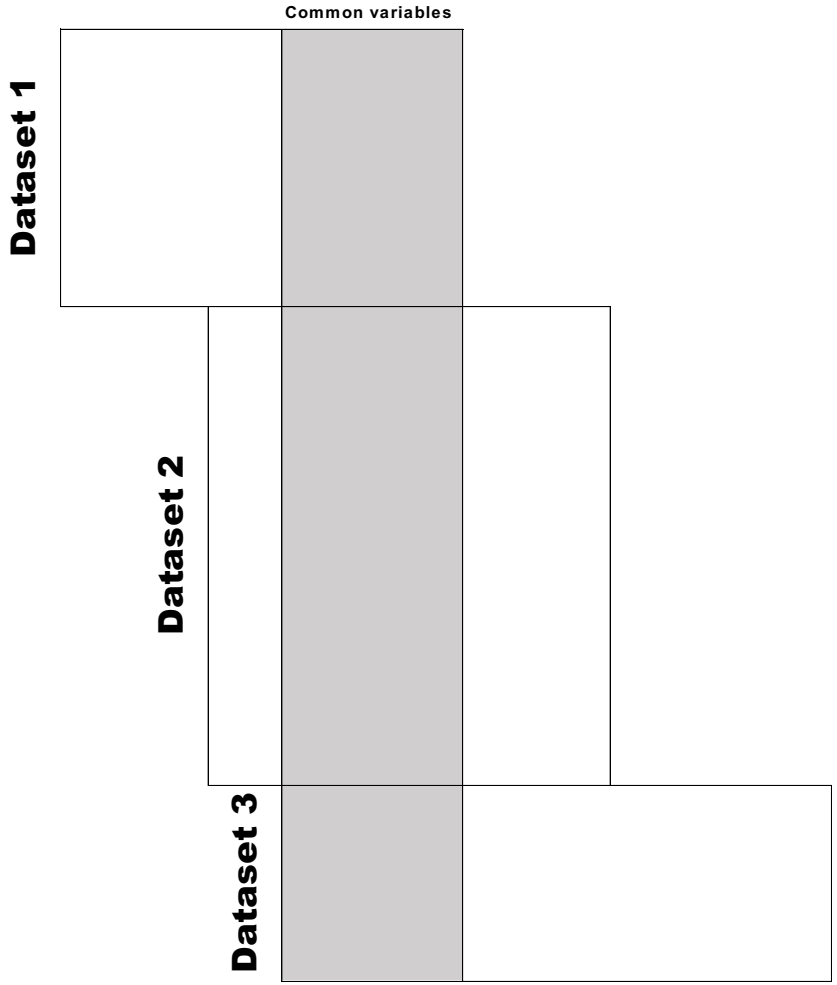
Model - Datasets from various disciplines

- Collated various data sets that cover similar populations but collect information on different aspects
  - Food purchases
  - Food intake
  - Sensory perception & liking
  - Cognitive Biases
  - Thinking Styles

	Datasets	Dataset 1	Dataset 2	Dataset 3	Dataset 4	Dataset 5	Dataset 6	Dataset 7
Cognitive Variables	Sunk costs	■			■			
	Mental accounting (A)	■			■			
	Mental accounting (B)	■			■			
	Discounting	■	■	■	■			
	Framing: Attribute (A)	■			■			
	Framing: Risky (A)	■			■			
	Framing: Attribute (B)	■			■			
	Framing: Risky (B)	■			■			
	Cognitive Reflection Test	■	■	■	■			
	Neophobia				■			
	MIEM Qs				■			
	Anchoring and adjustment	■						
	Counterfactual inferences	■						
	Outcome bias (B)	■						
	Framing: risk&att	■						
	Need for Cognition	■						
Sensory Variables	Food Attractions				■			
	Restaurant Preferences				■			
	Consumption Preferences				■			
	Consumption Behaviour				■			
	FPQ Intensity (continuous)				■			
	Food perception						■	
Food Choice	Food choice	■	■	■	■	■	■	■
	Dietary Restrictions			■	■		■	■
	Intolerances				■			■
	Smoking				■			
	Have scales?	■						
	Shopping list	■						
	Self-reported healthiness		■					
Demographic Variables	Age	■	■	■	■	■	■	■
	Height	■	■	■	■			■
	Weight	■	■	■	■			■
	Gender	■	■	■	■	■	■	■
	Marital status	■				■		
	Ethnicity	■	■	■	■	■		■
	Education	■	■	■	■	■		■
	Transport	■			■			
	Household	■	■	■		■	■	■
	Location	■	■	■	■	■	■	■
Economic Variables	Income	■	■	■	■	■	■	■
	Employment status	■	■	■		■		■
	employed/self-employed	■	■	■		■		
	size of workplace	■				■		
	Occupation	■						■

Model - Statistical Matching

- Data sets from different domains with sufficient overlap in variables will be matched to create a new multi-disciplinary data set.
- The theoretical validity of the matching exercise will be checked by domain experts.



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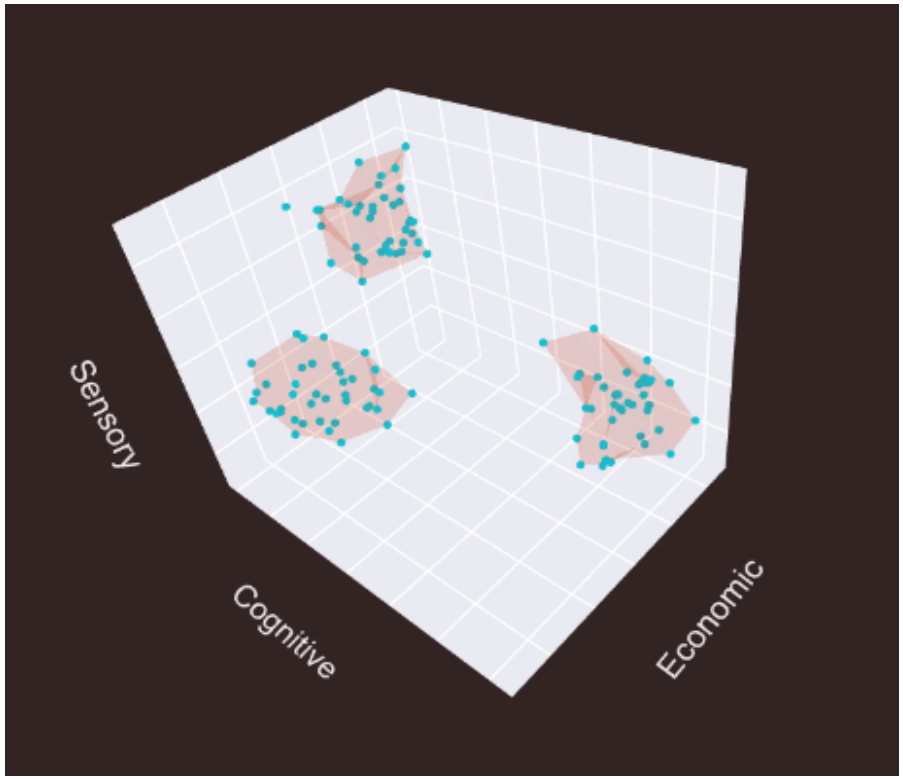
Model - Clustering consumers on multiple dimensions

- Using the matched data set we will cluster consumers in terms of their similarity on the dimensions:
  - Economic
  - Sensory
  - Cognitive



Developing typing tools

Developing typing tools

- Based on existing data sets on cognitive and sensory factors relating to food choice
    - Where possible identifying factors that best predict food choice
    - Examining questionnaires used to assess these
        - Simplifying questionnaires (which items are most representative and predictive)
        - Build short questionnaires

- Aim to use these to:
    - Link individual to clusters within the model
    - Quickly assess which advice strategies may be most effective

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Designing smart nudge-based advice

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Designing smart nudge-based advice

- Initially focused around key factors identified in our previous research
    - Discounting
    - Demographic factors
    - EUFIC will speak to initial work here shortly

- Expanding on this by reviewing literature on cognitive biases, thinking styles and executive function as they relate to:
    - Food choice
    - Other purchase behavior
    - Feed forward into the development of more strategies

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Communication strategies for tailored dietary advice

Dr. Betty Chang
Consumer Science

High discounters buy less raw ingredients

Value **immediate gratification** over health

Strategy:

✓align healthy eating with immediate gratification

Communicate **short-term benefits** of healthy food *

Taste

Feeling good

More energy

Convenience

Nudge

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* Balch et al. 1997; Satia et al., 2010; Woolley & Fishbach, 2016

Younger and low SES eat less healthily

Less money to buy healthy food and **more stress** *

Strategy:

✓ Communicate healthy eating can be **cheap and easy**

Quick and easy	Savings in time and money	Nudge
Ease "Eating 5 or more servings of fruits and vegetables is an easy way to improve my health." **	Tips in food purchase and preparation	
Quick and easy tips for identifying and preparing healthy food		- soup/stir-fry pack - app notifying user of healthy discounts
	**Keep it simple** Small changes with **healthy substitutes**	

*The Health Foundation 2018; WHO, 2001; Lund et al, 2010

**Balch et al, 1997

Bringing it all together

- By the end of the year we aim to have brought these three strands of work together and have done an initial small-scale pilot of providing targeted advice
- Aim for the future is to link to projects who have a use for better-targeted advice to take this into retail/healthcare/other settings

- Questions?

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