Implications of the obesogenic environment in Malta: a case for adopting a One Health Strategy

Trans-Domain COST Action TD1404 (NEOH) Workshop

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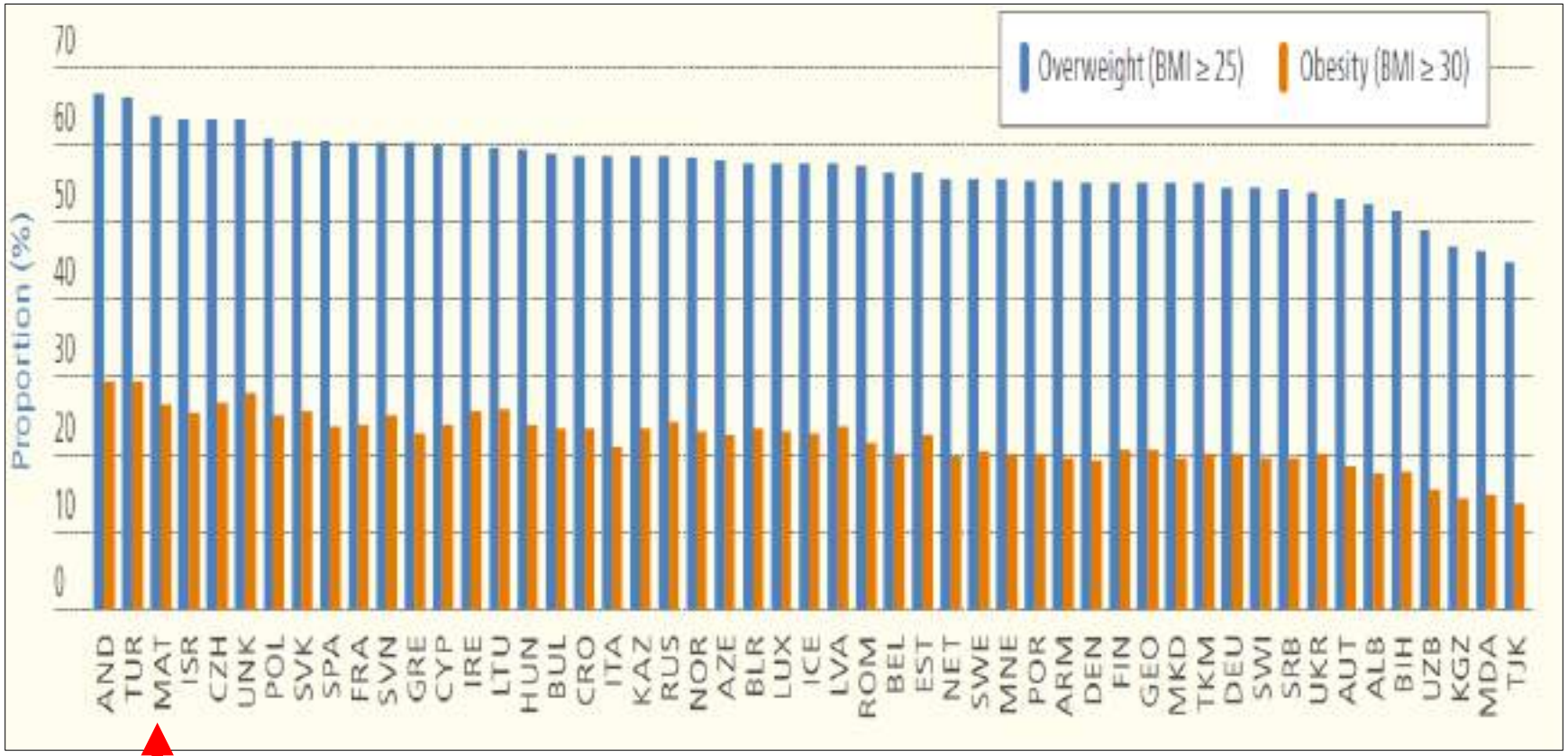
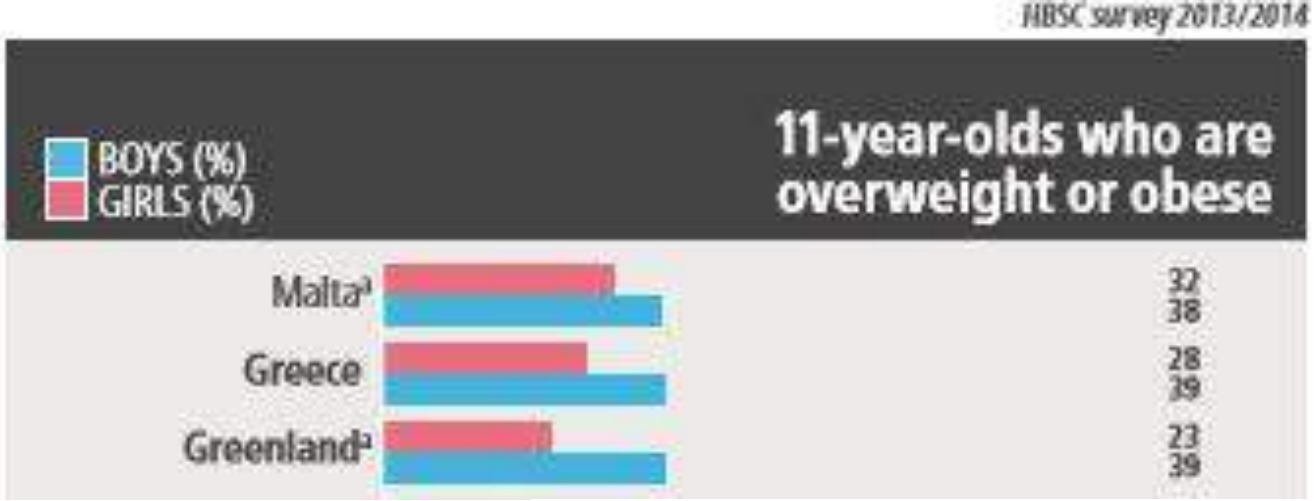
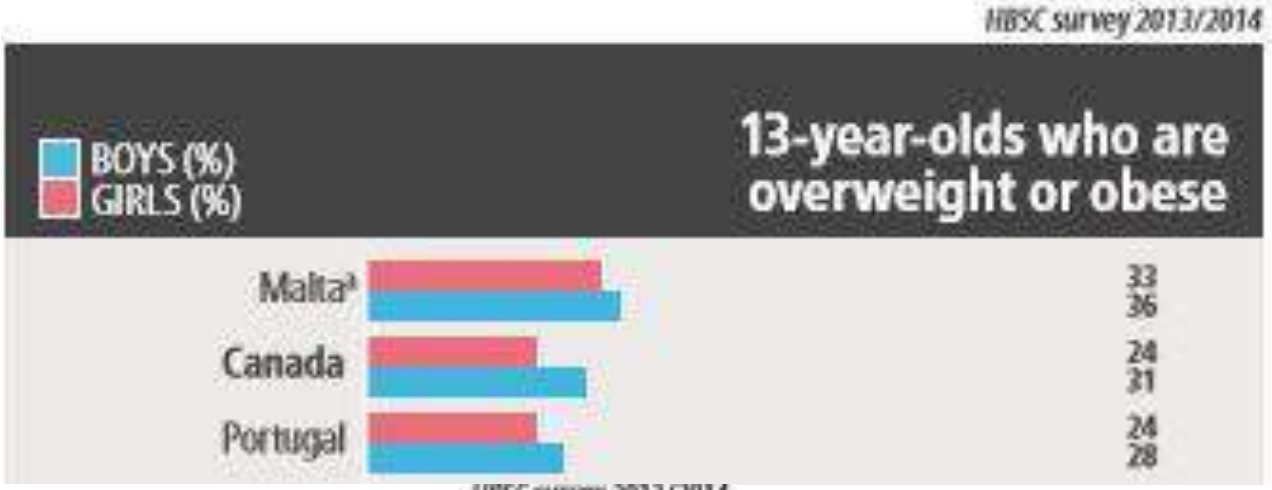
Age-standardized prevalence estimates for adult overweight and obesity, 2014

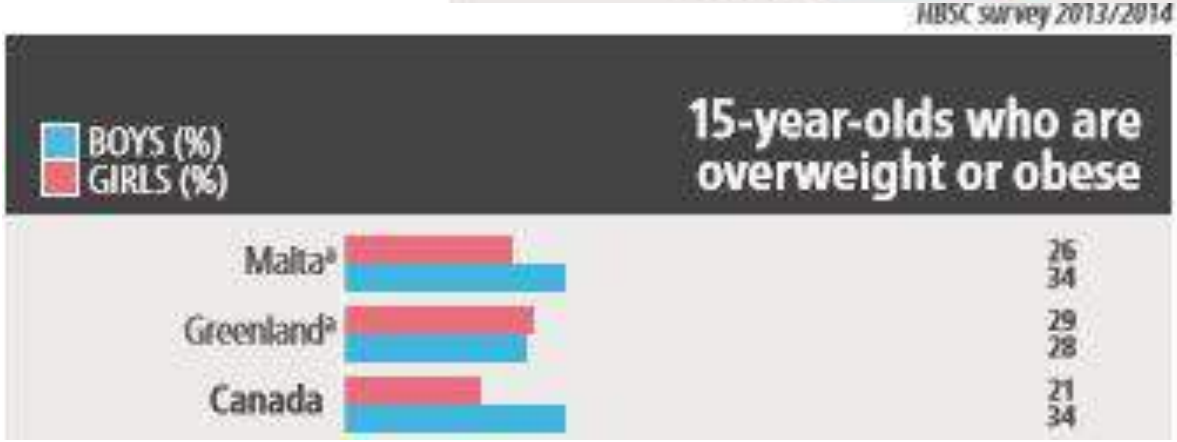


Source: Verschuuren M, Fietje N, Greenwell F, Raj T, Stein C, World Health Organization. The European Health Report 2015: Targets and beyond – reaching new frontiers in evidence. Copenhagen: UN City, 2015

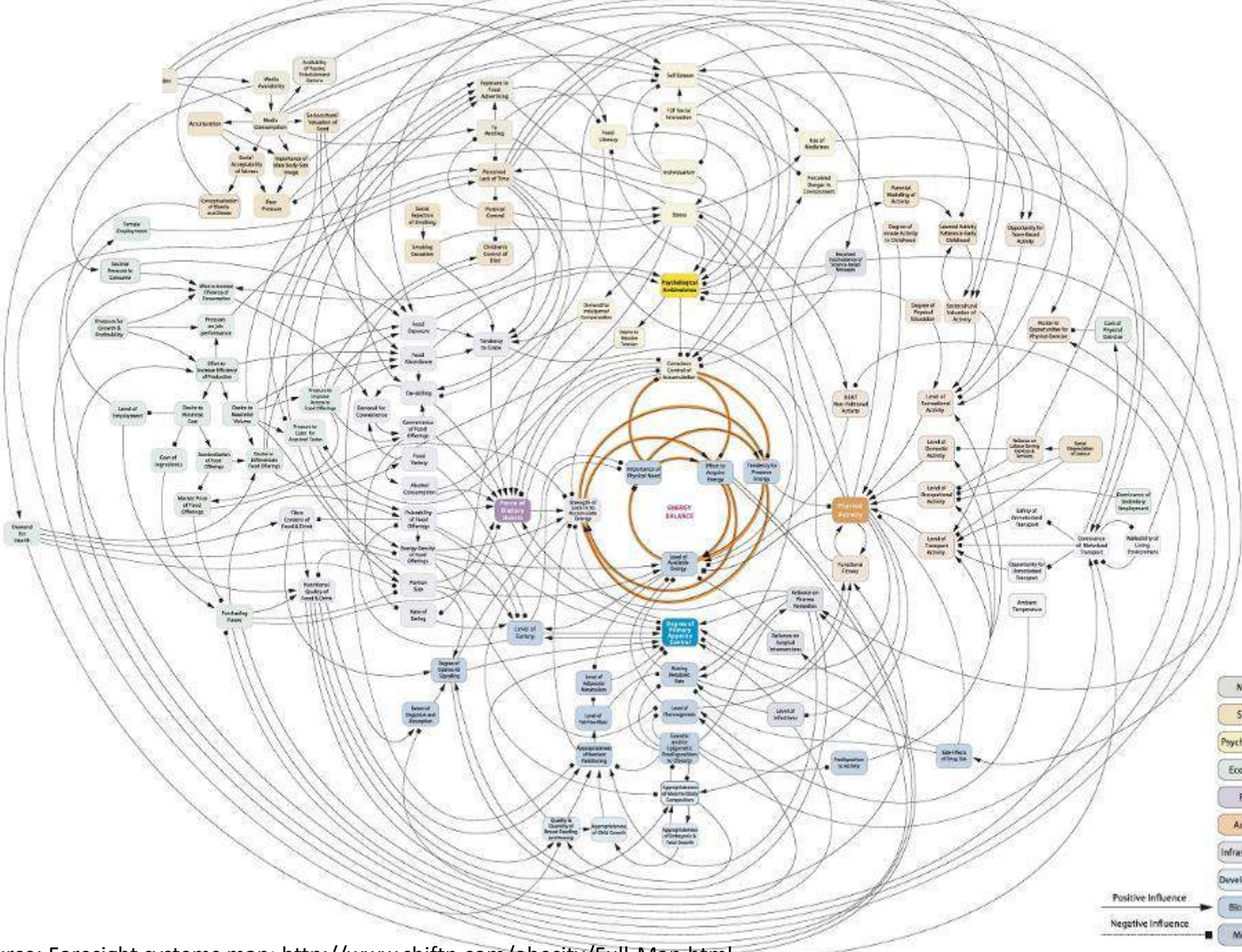
BMI in children (self-reported)







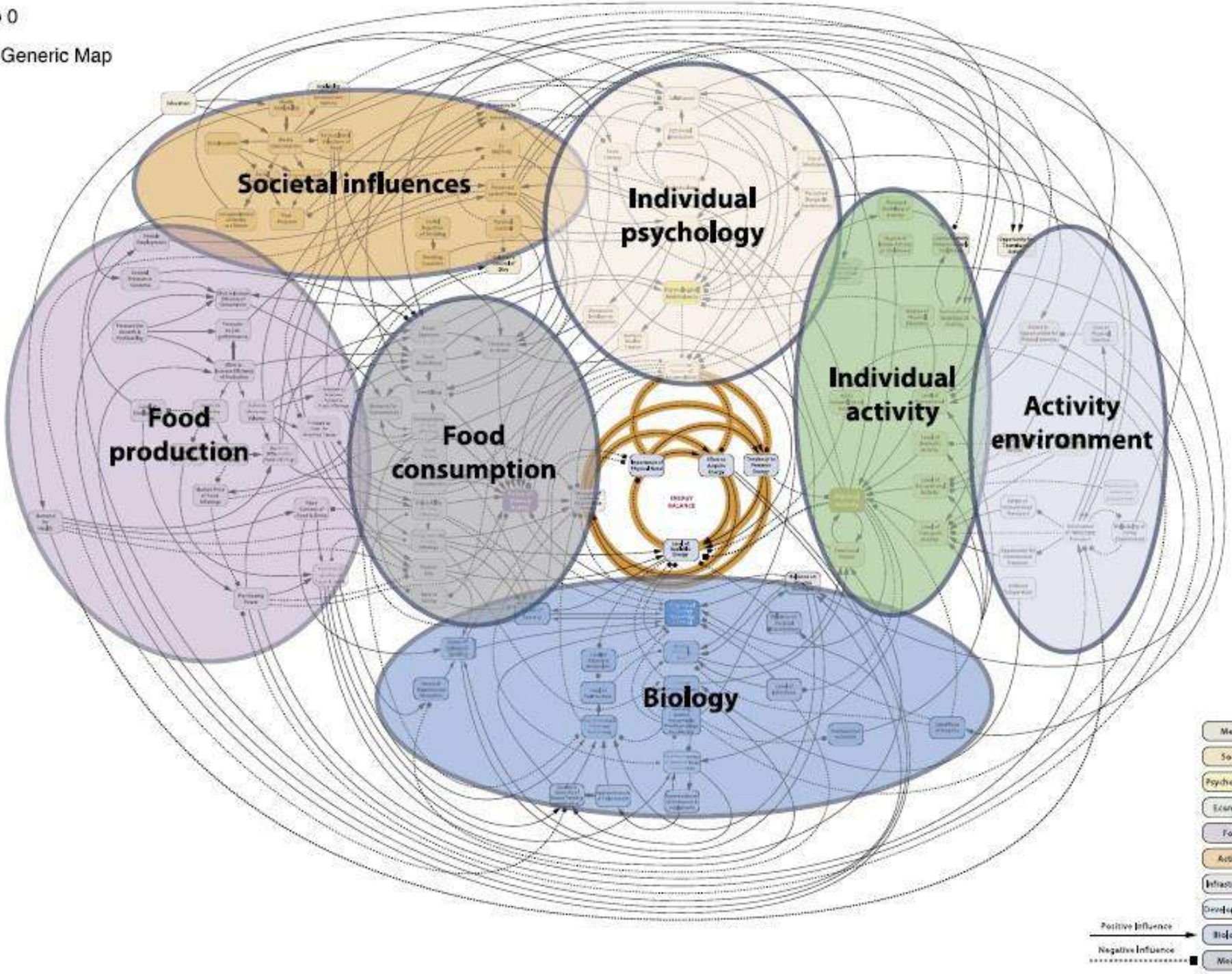
Source: Inchley J, Currie D, Young T, Samdal O, Torsheim T, Augustson L *et al.* Growing up unequal: gender and socioeconomic differences in young people's health and well-being. (HBSC study: International Report from the 2013/2014 Survey). UN City, Copenhagen



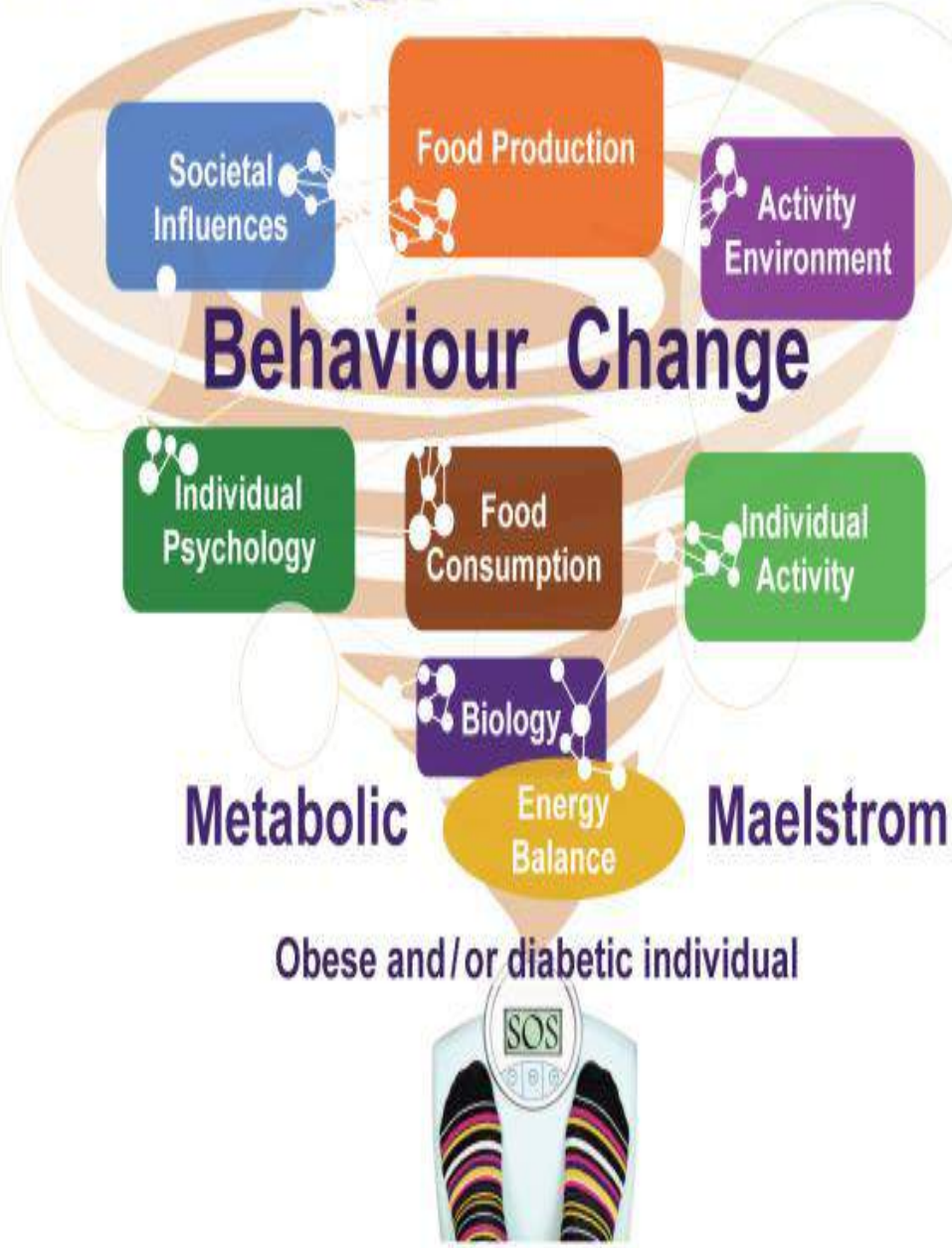
Source: Foresight systems map; http://www.shiftn.com/obesity/Full-Map.html

Map 0

Full Generic Map



The Obesogenic Environment



Research Methods

1. **Systematic literature review**
2. **Qualitative interviews/focus groups**
3. **Cross-sectional study design** (environmental audit):

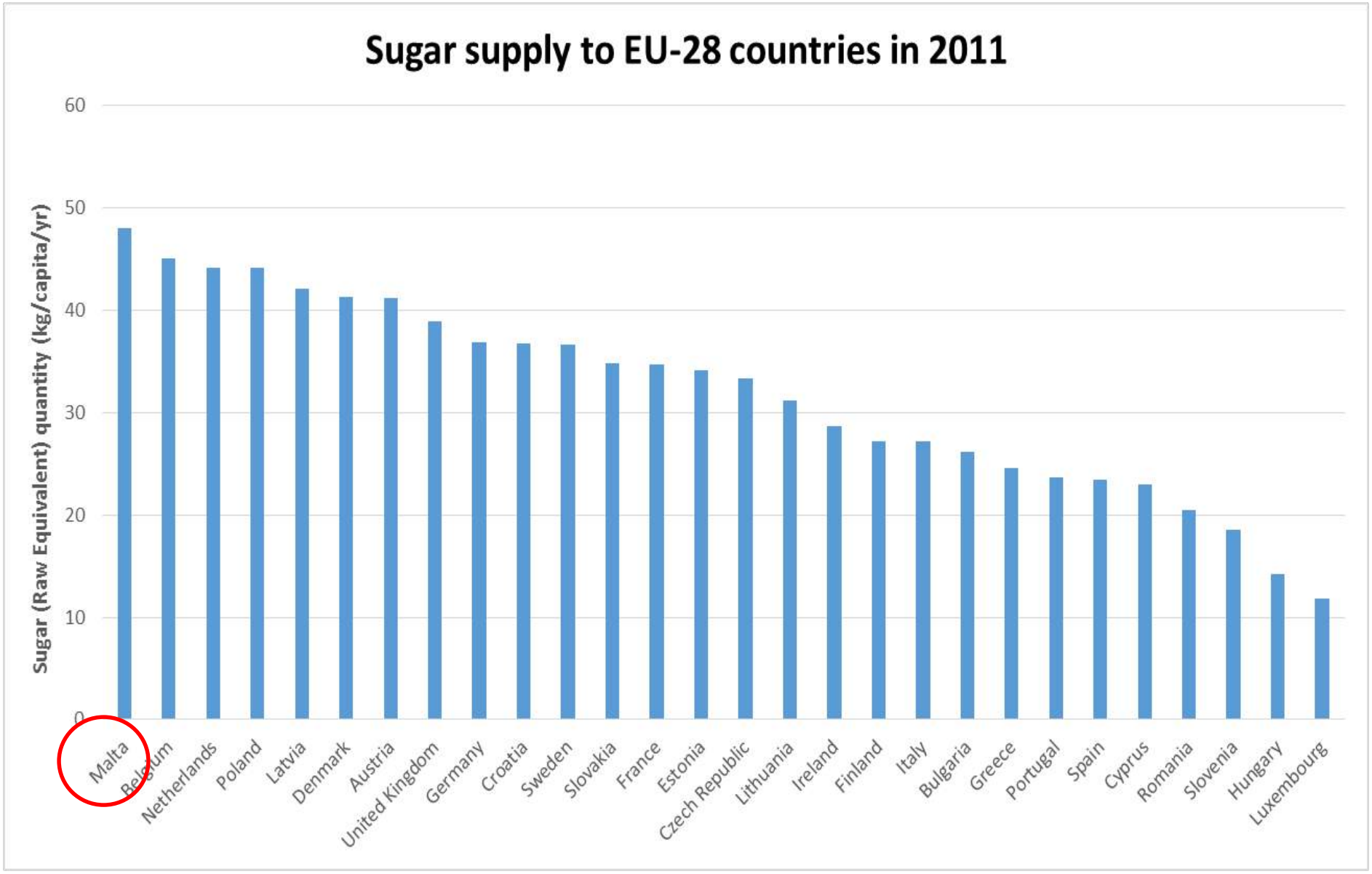
   i. Built Environment

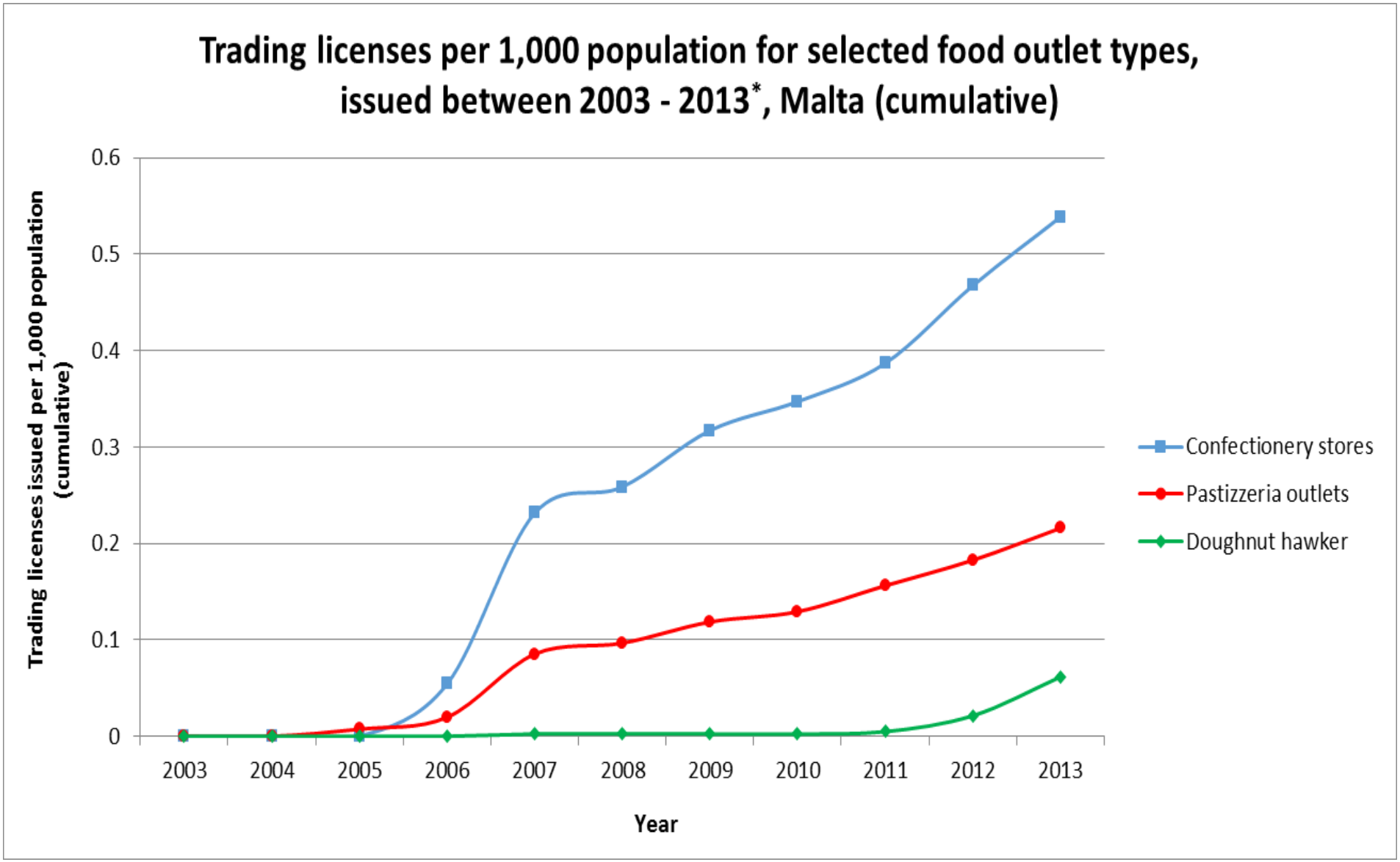
   ii. Community food environment

   iii. Consumer food environment (within grocery stores)

   iv. TV advertising

Results


Sugar supply to EU-28 countries in 2011
Sugar (Raw Equivalent) quantity (kg/capita/yr)
60
50
40
30
20
10
0
Malta
Belgium
Netherlands
Poland
Latvia
Denmark
Austria
United Kingdom
Germany
Croatia
Sweden
Slovakia
France
Estonia
Czech Republic
Lithuania
Ireland
Finland
Italy
Bulgaria
Greece
Portugal
Spain
Cyprus
Romania
Slovenia
Hungary
Luxembourg


Trading licenses per 1,000 population for selected food outlet types, issued between 2003 - 2013*, Malta (cumulative)
Trading licenses issued per 1,000 population (cumulative)
0.6
0.5
0.4
0.3
0.2
0.1
0
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
Year
Confectionery stores
Pastizzeria outlets
Doughnut hawker


N
Google earth


MEGA FASHION
SALE


Ġnien l-Għaljat


BUS STOP
Il-Mellieħa
Pittirosa


THE BBQ
TAKE AWAY TEL:27013944
PEPSI


Ġnien L-Emigranti Żrieraq
TWISSIJA
WARNING
KUNSILL LOKALI ŻURRIEQ
No Bicycles
No Balls
No Skateboard
No Dogs


McDouble
eurosaver
€1.90


Coca-Cola
COLLECT ALL 6
LIMITED EDITION
GIFTS
SEE LABELS FOR DETAILS
BRASIL

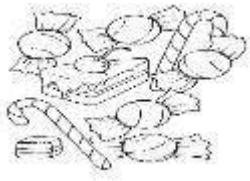
Built environment

Only 1 cycle lane (locality in **T1** = **high SES**)

Bus stop density: ↑ in T1 vs T3 (+11/km^2, p = 0.037)

Pavement quality: ↑ in T1 vs T3 (+0.73, p = 0.042)

Community Food environment



Confectionery: ↓ in T1 vs T3

stores (-31.5/km^2, p = 0.041)

Bars: ↓ in T1 vs T2 (-6.95/km^2, p = 0.041)

↓ in T1 vs T3 (-6.50/km^2, p = 0.022)

Overall, larger grocery stores offered a significantly more healthful environment (NEMS), having greater availability (varieties and shelf space allocation) of healthier items, and at cheaper prices than small grocery stores.

NEMS-S scores /Healthfulness

	Store size			
	Small	**Medium**	**Large**	**Diff. (p value)**
Availability	M: 10.0 ±3.3 R: 6 - 17	M: 14.3 ±2.6 R: 10 - 19	M: 18.5 ±2.9 R: 12 - 23	**<0.001**
Price	M: 0.9 ±2.3 R: -3 - 4	M: 1.0 ±2.3 R: -3 - 4	M: 0.5 ±2.6 R: -3 - 4	0.860
Quality	M: 5.7 ±0.7 R: 4 - 6	M: 5.6 ±0.7 R: 4 - 6	M: 5.7 ±0.5 R: 5 - 6	0.870
Total score	M: 21 ±5.5 R: 13 - 28	M: 29.7 ±4.2 R: 24 - 37	M: 35.2 ±5.4 R: 23 - 41	**<0.001**

P = 0.031 (regular)
P = 0.020 (diet)

Cost of 1.5L bottle (€)

Increasing deprivation (decreasing SES)

Associations with cohort BMI data

- BMI percentile-for-age data for 2,623 children
- ~ 7 years of age
- 33.8% overweight or obese (IOTF criteria)
- risk of overweight or obesity was modelled against area-level density of different food store types
- adjusted for SE deprivation and clustering