

Measuring the quality of people's diets: a comparison of intake and purchase data

Rachel Griffith, Martin O'Connell and Kate Smith

Institute for Fiscal Studies

December 2012

- ▶ Considerable interest in understanding how the nutritional quality of individuals' diet varies across people and over time
- ▶ Compare how a measure of diet quality varies when calculated using different datasets on people's food purchases/consumption
 - ▶ Take as given a measure of diet quality
- ▶ Use the data to look at how diet quality differs along demographic lines and across the year

- ▶ Describe the effect of the following differences in the datasets on diet quality:
 1. Differences in sampling method (random vs. quota) and technology (diary vs. scanner)
 2. Difference between the household and the individual
 3. Difference between food purchases and consumption
- ▶ What variation in diet quality do we observe across households and over time?

- ▶ **Living Costs and Food Survey (LCFS)** (previously the Expenditure and Food Survey, Family Expenditure Survey): records food purchases using a diary
- ▶ **National Diet and Nutrition Survey (NDNS)**: records food consumption using a diary
- ▶ **Kantar Worldpanel**: market research data, records food purchases via in-home scanning technology.

- ▶ **Living Costs and Food Survey (LCFS)** (previously the Expenditure and Food Survey, Family Expenditure Survey): records food purchases using a diary
- ▶ **National Diet and Nutrition Survey (NDNS)**: records food consumption using a diary
- ▶ **Kantar Worldpanel**: market research data, records food purchases via in-home scanning technology. Advantages:
 - ▶ Panel data - observe the same household, and how its diet changes, over several years
 - ▶ Contains data not recorded in other datasets - accurate prices, data on stores, rich nutritional information

- ▶ Differences between the dataset:
 - ▶ Similar measures of diet quality when the Kantar data is sampled to mimic the LCFS
 - ▶ Variation within household depending on the age and gender of its members
 - ▶ Significant differences between diet quality measures using purchase data compared with intake data
- ▶ Variation in diet quality across households and time:
 - ▶ Significant variation in diet quality by social class, household type and employment status of the head of the household
 - ▶ Big decline in the quality of diet over the course of the year

	Kantar Worldpanel	LCFS	NDNS
<i>Sampling</i>			
Object of observation	Purchase	Purchase	Intake
Unit of observation	Household	Household	Individual
Sampling method	Quota	Stratified random	Stratified random
Recording method	Hand-held scanner (in home)	Individual diary (over 7 years old)	Individual diary (over 1.5 years old)
<i>Data collection</i>			
Panel or cross-section	Panel	Repeated cross-section	Repeated cross-section
Duration of recording	(mean) 1.9 yrs	2 weeks	4 days
<i>Food groups</i>			
Food aggregation	Product	250 food groups	Diet components
Food out?	No	Yes	Yes
Alcohol?	At home	Yes	Yes

	Kantar Worldpanel	LCFS	NDNS
<i>Sampling</i>			
Object of observation	Purchase	Purchase	Intake
Unit of observation	Household	Household	Individual
Sampling method	Quota	Stratified random	Stratified random
Recording method	Hand-held scanner (in home)	Individual diary (over 7 years old)	Individual diary (over 1.5 years old)
<i>Data collection</i>			
Panel or cross-section	Panel	Repeated cross-section	Repeated cross-section
Duration of recording	(mean) 1.9 yrs	2 weeks	4 days
<i>Food groups</i>			
Food aggregation	Product	250 food groups	Diet components
Food out?	No	Yes	Yes
Alcohol?	At home	Yes	Yes

	Kantar Worldpanel	LCFS	NDNS
<i>Sampling</i>			
Object of observation	Purchase	Purchase	Intake
Unit of observation	Household	Household	Individual
Sampling method	Quota	Stratified random	Stratified random
Recording method	Hand-held scanner (in home)	Individual diary (over 7 years old)	Individual diary (over 1.5 years old)
<i>Data collection</i>			
Panel or cross-section	Panel	Repeated cross-section	Repeated cross-section
Duration of recording	(mean) 1.9 yrs	2 weeks	4 days
<i>Food groups</i>			
Food aggregation	Product	250 food groups	Diet components
Food out?	No	Yes	Yes
Alcohol?	At home	Yes	Yes

	Kantar Worldpanel	LCFS	NDNS
<i>Sampling</i>			
Object of observation	Purchase	Purchase	Intake
Unit of observation	Household	Household	Individual
Sampling method	Quota	Stratified random	Stratified random
Recording method	Hand-held scanner (in home)	Individual diary (over 7 years old)	Individual diary (over 1.5 years old)
<i>Data collection</i>			
Panel or cross-section	Panel	Repeated cross-section	Repeated cross-section
Duration of recording	(mean) 1.9 yrs	2 weeks	4 days
<i>Food groups</i>			
Food aggregation	Product	250 food groups	Diet components
Food out?	No	Yes	Yes
Alcohol?	At home	Yes	Yes

A measure of diet quality: the Healthy Eating Index

- ▶ Take as given a measure of diet quality used by the US Department of Agriculture
- ▶ 'Healthy Eating Index' (HEI): calculates a score out of 100 depending on the relative consumption of different components (food types and nutrients)
- ▶ The medical literature suggest that the HEI is a significant predictor of health outcomes

Constructing the Healthy Eating Index

Component	Max score.	Low value	High value
Total fruit	5	0	120g per 1000 kcals
Whole fruit	5	0	60g per 1000 kcals
Total vegetable	5	0	165g per 1000 kcals
Dark green/orange veg	5	0	60g per 1000 kcals
Total grains	5	0	75g per 1000 kcals
Whole grains	5	0	32.5g per 1000 kcals
Milk	10	0	260g per 1000 kcals
Meat	10	0	70g per 1000 kcals
Oils	10	0	12g per 1000 kcals
Saturated fat	10	>15% of energy	<7% of energy
Sodium	10	>2g per 1000cals	<0.7g per 1000 kcals
Calories from SoFAS	20	>50% of energy	<20% of energy
Total	100		

1. Differences in sampling method (random vs. quota) and technology (diary vs. scanner)
 - ▶ Kantar Worldpanel is collected using quota sampling, whereas LCFS use random sampling
 - ▶ LCFS use diary recording to collect data, Kantar Worldpanel collected using hand-held scanners

1. Effect of sampling/collection method

Data

- ▶ Compare the Kantar Worldpanel and LCFS by sampling from the Worldpanel in to mimic the sampling procedure of the LCFS
- ▶ Use data from 2008 and 2009, omit periods of non-recording longer than 14 days from the Kantar data
- ▶ Randomly sample two week periods from the Kantar data based on stratification according to: region, socioeconomic group and number of cars in the household
- ▶ Equal number of two week periods drawn from each month

1. Effect of sampling/collection method

Comparability of samples

		LCFS		Kantar		GB population
Government office region	North East	460	4.5%	459	4.5%	4.4%
	North West	1138	11.1%	1138	11.1%	11.8%
	Yorkshire	949	9.3%	951	9.3%	8.7%
	East Midlands	780	7.6%	780	7.6%	7.4%
	West Midlands	976	9.6%	973	9.5%	9.0%
	Eastern	1007	9.9%	1009	9.9%	9.5%
	London	891	8.7%	900	8.8%	12.8%
	South East	1471	14.4%	1464	14.3%	13.9%
	South West	1004	9.8%	1006	9.9%	8.9%
	Wales	526	5.1%	523	5.1%	5.1%
Scotland	1015	9.9%	1009	9.9%	8.6%	
Socioeconomic group	Highly skilled	3222	31.5%	3218	31.5%	33.0%
	Semi skilled	2833	27.7%	2841	27.8%	28.9%
	Unskilled	4162	40.7%	4153	40.7%	38.1%
Number of cars	0 cars	2716	26.6%	2712	26.6%	27.4%
	1 car	4899	47.9%	4902	48.0%	43.8%
	2+ cars	2602	25.5%	2598	25.4%	28.8%
	<i>Total</i>	10217	100.0%	10212	100.0%	100%

1. Effect of sampling/collection method

Comparability of samples

		LCFS		Kantar		GB population
Government office region	North East	460	4.5%	459	4.5%	4.4%
	North West	1138	11.1%	1138	11.1%	11.8%
	Yorkshire	949	9.3%	951	9.3%	8.7%
	East Midlands	780	7.6%	780	7.6%	7.4%
	West Midlands	976	9.6%	973	9.5%	9.0%
	Eastern	1007	9.9%	1009	9.9%	9.5%
	London	891	8.7%	900	8.8%	12.8%
	South East	1471	14.4%	1464	14.3%	13.9%
	South West	1004	9.8%	1006	9.9%	8.9%
	Wales	526	5.1%	523	5.1%	5.1%
Scotland	1015	9.9%	1009	9.9%	8.6%	
Socioeconomic group	Highly skilled	3222	31.5%	3218	31.5%	33.0%
	Semi skilled	2833	27.7%	2841	27.8%	28.9%
	Unskilled	4162	40.7%	4153	40.7%	38.1%
Number of cars	0 cars	2716	26.6%	2712	26.6%	27.4%
	1 car	4899	47.9%	4902	48.0%	43.8%
	2+ cars	2602	25.5%	2598	25.4%	28.8%
	<i>Total</i>	10217	100.0%	10212	100.0%	100%

1. Effect of sampling/collection method

Mean HEI scores

	LCFS	Kantar	Difference
North East	54.92	56.17	-1.25
North West	56.26	56.33	-0.07
Yorkshire	56.73	56.65	0.07
East Midlands	57.83	57.14	0.69
West Midlands	57.90	56.00	1.90***
Eastern	57.62	57.56	0.05
London	59.52	56.30	3.22***
South East	57.21	57.59	-0.38
South West	57.03	57.64	-0.61
Wales	57.34	56.52	0.81
Scotland	54.95	53.66	1.29**
Highly skilled	58.21	58.67	-0.45
Semi skilled	57.65	56.99	0.65**
Unskilled	55.81	54.63	1.18***
0 cars	54.89	54.26	0.63*
1 car	57.44	57.10	0.34
2+ cars	58.67	57.94	0.72**
All households	57.08	56.56	0.52***

1. Effect of sampling/collection method

Mean HEI scores

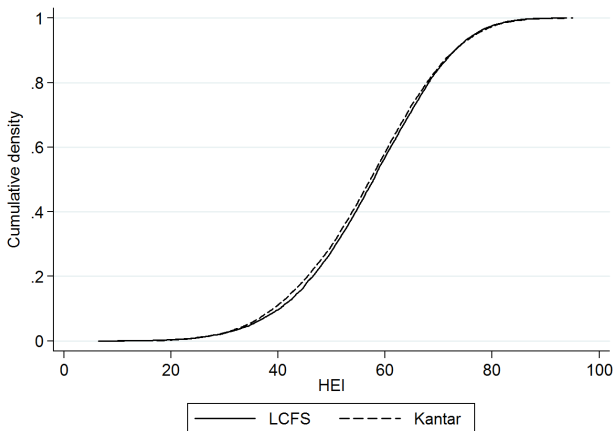
	LCFS	Kantar	Difference
North East	54.92	56.17	-1.25
North West	56.26	56.33	-0.07
Yorkshire	56.73	56.65	0.07
East Midlands	57.83	57.14	0.69
West Midlands	57.90	56.00	1.90***
Eastern	57.62	57.56	0.05
London	59.52	56.30	3.22***
South East	57.21	57.59	-0.38
South West	57.03	57.64	-0.61
Wales	57.34	56.52	0.81
Scotland	54.95	53.66	1.29**
Highly skilled	58.21	58.67	-0.45
Semi skilled	57.65	56.99	0.65**
Unskilled	55.81	54.63	1.18***
0 cars	54.89	54.26	0.63*
1 car	57.44	57.10	0.34
2+ cars	58.67	57.94	0.72**
All households	57.08	56.56	0.52***

▶ Calorie purchases

1. Effect of sampling/collection method

Results

Figure: Cumulative density plots of the HEI in the LCFS and Kantar samples



1. Effect of sampling/collection method

Mean component scores

Component	LCFS	Kantar	Difference
Fruit (5)	2.91	2.84	0.07***
Whole fruit (5)	3.38	3.19	0.19***
Vegetables (5)	3.01	2.80	0.21***
Dark green vegetables (5)	1.48	1.53	-0.04**
Grains (5)	4.55	4.40	0.15***
Wholegrains (5)	1.66	1.40	0.25***
Meat (10)	6.87	6.92	-0.05
Milk (10)	5.05	4.55	0.50***
Oils (10)	4.42	4.52	-0.09*
Sodium (10)	6.41	6.49	-0.07**
Saturates (10)	2.65	3.01	-0.35***
Calories from SoFAAS (20)	14.63	14.85	-0.22***

Notes: max score displayed in brackets

1. Effect of sampling/collection method

Summary

- ▶ Overall the differences between the HEI in the two datasets are small when the Kantar data is sampled to mimic the LCFS
- ▶ There is variation in the measurement across households and for different food types, would like to understand this better

2. Difference between the household and the individual

- ▶ In the Kantar Worldpanel and LCFS the household is the unit of observation, whereas in intake data it is the individual
- ▶ How much variation in diet quality is there within a household?

2. Intra-household variation in diet quality

Data

- ▶ Use the NDNS, which aims to record food *consumption* at the individual level, to look at intra-household variation in diet quality
- ▶ NDNS contains 344 households for which the intake data of two household members (an adult and a child) is recorded
- ▶ Construct the HEI for each individual, test the difference in the mean HEI score for adults and children
- ▶ See how it varies by age and gender of the adult and child

2. (Intra-household) variation in diet quality

All individuals in the full NDNS sample

	Male	Female	Difference
<i>Age group</i>			
0 to 5	57.28	58.22	-0.94
6 to 9	56.86	56.01	0.85
10 to 14	52.71	52.93	-0.22
15 to 18	47.87	51.16	-3.29**
19 to 29	49.60	53.21	-3.61**
30 to 39	51.59	58.14	-6.54***
40 to 54	54.17	57.20	-3.03**
55 to 64	55.78	60.45	-4.67***
65 or older	56.05	59.40	-3.35**
<i>Socioeconomic group</i>			
Highly skilled	55.20	56.69	-1.48**
Semi-skilled	53.94	57.28	-3.34***
Unskilled	51.96	55.39	-3.43***

2. Intra-household variation in diet quality

Households for which data collected on two members

Age of child	Adult	Child	Diff.
<i>All adults</i>			
0 to 5	55.93	57.73	-1.79*
6 to 9	57.23	56.44	0.79
10 to 14	54.75	52.81	1.93
15 to 18	52.79	49.48	3.31**
<i>Male adults</i>			
0 to 5	52.57	57.05	-4.47**
6 to 9	55.86	56.45	-0.59
10 to 14	51.65	55.24	-3.59
15 to 18	50.50	48.05	2.45
<i>Female adults</i>			
0 to 5	58.33	57.18	1.15
6 to 9	58.01	57.72	0.28
10 to 14	56.39	51.19	5.20**
15 to 18	54.44	48.49	5.94**

2. Intra-household variation in diet quality

Households for which data collected on two members

Age of child	Adult	Child	Diff.
<i>All adults</i>			
0 to 5	55.93	57.73	-1.79*
6 to 9	57.23	56.44	0.79
10 to 14	54.75	52.81	1.93
15 to 18	52.79	49.48	3.31**
<i>Male adults</i>			
0 to 5	52.57	57.05	-4.47**
6 to 9	55.86	56.45	-0.59
10 to 14	51.65	55.24	-3.59
15 to 18	50.50	48.05	2.45
<i>Female adults</i>			
0 to 5	58.33	57.18	1.15
6 to 9	58.01	57.72	0.28
10 to 14	56.39	51.19	5.20**
15 to 18	54.44	48.49	5.94**

2. Intra-household variation in diet quality

Households for which data collected on two members

Age of child	Adult	Child	Diff.
<i>All adults</i>			
0 to 5	55.93	57.73	-1.79*
6 to 9	57.23	56.44	0.79
10 to 14	54.75	52.81	1.93
15 to 18	52.79	49.48	3.31**
<i>Male adults</i>			
0 to 5	52.57	57.05	-4.47**
6 to 9	55.86	56.45	-0.59
10 to 14	51.65	55.24	-3.59
15 to 18	50.50	48.05	2.45
<i>Female adults</i>			
0 to 5	58.33	57.18	1.15
6 to 9	58.01	57.72	0.28
10 to 14	56.39	51.19	5.20**
15 to 18	54.44	48.49	5.94**

2. Intra-household variation in diet quality

Summary

- ▶ One particular case of intra-household variation: between adult and child
- ▶ There are differences between household members:
 - ▶ Teenage boys eat significantly worse than their mothers
 - ▶ Young children eat significantly better than their fathers

3. Difference between food purchases and consumption

- ▶ By definition, expenditure surveys and market research data record *purchases* whereas intake data records *consumption*
- ▶ May be concerned about recording of waste in purchase data, and behavioural response in intake data

3. Difference between purchase and consumption

Data

- ▶ Compare the the NDNS (measures intake) and LCFS (measures purchases)
- ▶ We select demographically similar samples of single person households in the NDNS and LCFS
- ▶ Randomly sample from the LCFS to match the NDNS sample across three dimensions - age, gender and socioeconomic group
- ▶ Construct the HEI for each individual

3. Difference between purchase and consumption

Data

	LCFS		NDNS	
<i>Age</i>	No.	Col. %	No.	Col. %
20 to 34	31	12.8	31	12.8
35 to 50	49	20.2	49	20.2
50 to 65	73	30.2	73	30.2
65 plus	89	36.8	89	36.8
<i>Socioeconomic group</i>				
Highly skilled	73	30.2	73	30.2
Semi-skilled	81	33.5	81	33.5
Unskilled	88	36.4	88	36.4
<i>Gender</i>				
Male	107	44.2	107	44.2
Female	135	55.8	135	55.8
<i>Total</i>	242	100.0	242	100.0

3. Difference between purchase and consumption

Calories purchased

	LCFS	NDNS	Difference
<i>Age</i>			
20 to 34	2478.75	1894.79	583.95**
35 to 50	2589.74	1840.80	748.93***
50 to 65	2558.44	1452.78	1105.65***
65 plus	2663.92	1251.73	1412.18***
<i>Socioeconomic group</i>			
Highly skilled	2629.89	1698.32	931.56***
Semi-skilled	2731.38	1406.50	1324.87***
Unskilled	2436.01	1460.13	975.88***
<i>Gender</i>			
Male	2668.68	1911.35	757.32***
Female	2533.66	1199.11	1334.54***

3. Difference between purchase and consumption

Calories purchased

	LCFS	NDNS	Difference
<i>Age</i>			
20 to 34	2478.75	1894.79	583.95**
35 to 50	2589.74	1840.80	748.93***
50 to 65	2558.44	1452.78	1105.65***
65 plus	2663.92	1251.73	1412.18***
<i>Socioeconomic group</i>			
Highly skilled	2629.89	1698.32	931.56***
Semi-skilled	2731.38	1406.50	1324.87***
Unskilled	2436.01	1460.13	975.88***
<i>Gender</i>			
Male	2668.68	1911.35	757.32***
Female	2533.66	1199.11	1334.54***

3. Difference between purchase and consumption

Calories purchased

	LCFS	NDNS	Difference
<i>Age</i>			
20 to 34	2478.75	1894.79	583.95**
35 to 50	2589.74	1840.80	748.93***
50 to 65	2558.44	1452.78	1105.65***
65 plus	2663.92	1251.73	1412.18***
<i>Socioeconomic group</i>			
Highly skilled	2629.89	1698.32	931.56***
Semi-skilled	2731.38	1406.50	1324.87***
Unskilled	2436.01	1460.13	975.88***
<i>Gender</i>			
Male	2668.68	1911.35	757.32***
Female	2533.66	1199.11	1334.54***

3. Difference between purchase and consumption

Mean HEI score

	LCFS	NDNS	Difference
<i>Age</i>			
20 to 34	46.70	50.24	-3.54
35 to 50	51.05	55.25	-4.20*
50 to 65	54.41	59.08	-4.67**
65 plus	56.62	57.41	-0.79
<i>Socioeconomic group</i>			
Highly skilled	53.24	57.12	-3.87*
Semi-skilled	53.39	57.86	-4.47**
Unskilled	53.97	54.90	-0.93
<i>Gender</i>			
Male	50.78	52.84	-2.06
Female	55.76	59.51	-3.75**

3. Difference between purchase and consumption

Mean HEI score

	LCFS	NDNS	Difference
Age			
20 to 34	46.70	50.24	-3.54
35 to 50	51.05	55.25	-4.20*
50 to 65	54.41	59.08	-4.67**
65 plus	56.62	57.41	-0.79
<i>Socioeconomic group</i>			
Highly skilled	53.24	57.12	-3.87*
Semi-skilled	53.39	57.86	-4.47**
Unskilled	53.97	54.90	-0.93
<i>Gender</i>			
Male	50.78	52.84	-2.06
Female	55.76	59.51	-3.75**

3. Difference between purchase and consumption

Mean HEI score

	LCFS	NDNS	Difference
<i>Age</i>			
20 to 34	46.70	50.24	-3.54
35 to 50	51.05	55.25	-4.20*
50 to 65	54.41	59.08	-4.67**
65 plus	56.62	57.41	-0.79
<i>Socioeconomic group</i>			
Highly skilled	53.24	57.12	-3.87*
Semi-skilled	53.39	57.86	-4.47**
Unskilled	53.97	54.90	-0.93
<i>Gender</i>			
Male	50.78	52.84	-2.06
Female	55.76	59.51	-3.75**

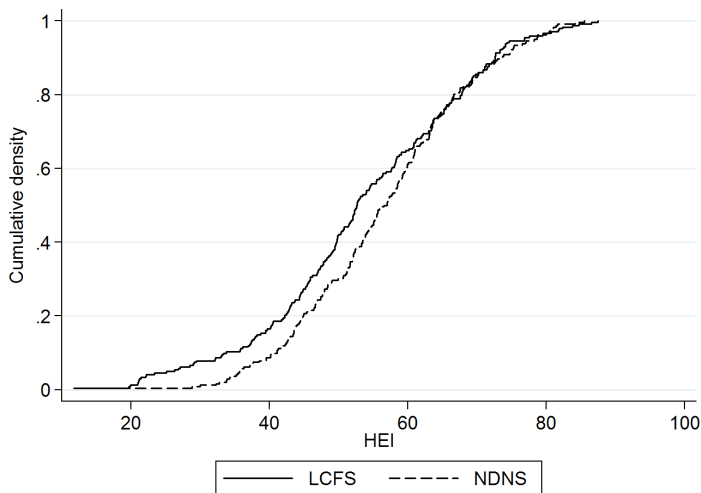
3. Difference between purchase and consumption

Mean HEI score

	LCFS	NDNS	Difference
<i>Age</i>			
20 to 34	46.70	50.24	-3.54
35 to 50	51.05	55.25	-4.20*
50 to 65	54.41	59.08	-4.67**
65 plus	56.62	57.41	-0.79
<i>Socioeconomic group</i>			
Highly skilled	53.24	57.12	-3.87*
Semi-skilled	53.39	57.86	-4.47**
Unskilled	53.97	54.90	-0.93
<i>Gender</i>			
Male	50.78	52.84	-2.06
Female	55.76	59.51	-3.75**

3. Difference between purchase and consumption

Results



3. Difference between purchase and consumption

Results

Component	LCFS	NDNS	Difference
Fruit (5)	2.85	3.04	-0.19
Whole fruit (5)	3.19	3.31	-0.11
Vegetables (5)	2.78	2.89	-0.11
Dark green vegetables (5)	1.26	1.21	0.04
Grains (5)	4.12	4.25	-0.13
Wholegrains (5)	1.55	2.25	-0.70***
Meat (10)	6.67	8.36	-1.68***
Milk (10)	4.67	4.18	0.49*
Oils (10)	3.44	2.75	0.69*
Sodium (10)	6.50	6.34	0.15
Saturates (10)	3.25	4.17	-0.92***
Calories from SoFAAS (20)	13.23	13.75	-0.52

Notes: max score for each component in brackets.

3. Difference between purchase and consumption

Results

Component	LCFS	NDNS	Difference
Fruit (5)	2.85	3.04	-0.19
Whole fruit (5)	3.19	3.31	-0.11
Vegetables (5)	2.78	2.89	-0.11
Dark green vegetables (5)	1.26	1.21	0.04
Grains (5)	4.12	4.25	-0.13
Wholegrains (5)	1.55	2.25	-0.70***
Meat (10)	6.67	8.36	-1.68***
Milk (10)	4.67	4.18	0.49*
Oils (10)	3.44	2.75	0.69*
Sodium (10)	6.50	6.34	0.15
Saturates (10)	3.25	4.17	-0.92***
Calories from SoFAAS (20)	13.23	13.75	-0.52

Notes: max score for each component in brackets.

3. Difference between purchase and consumption

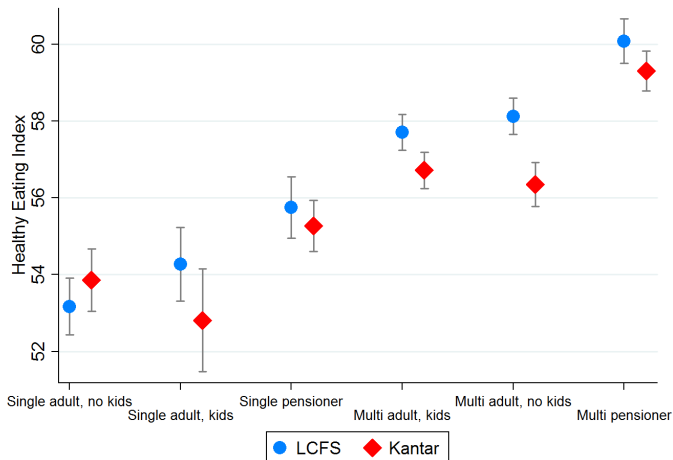
Summary

- ▶ Significant differences in diet quality when measured in the NDNS and LCFS
- ▶ Large differences in the reporting of calories between the two datasets
- ▶ Variation by demographics: bigger differences for women
- ▶ Differences in measurement also varies by food type

- ▶ Ultimately interested in how diet quality varies across different dimensions
- ▶ Two questions:
 1. How does diet quality vary by household characteristics?
 2. Does diet quality vary over the year?
- ▶ Use a combination of all three datasets

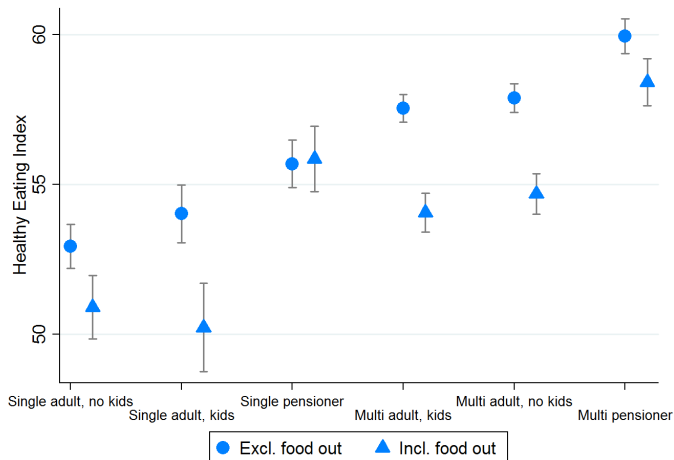
Cross-sectional variation in the HEI

Figure: Variation in the HEI in the LCFS and Kantar samples, by household type



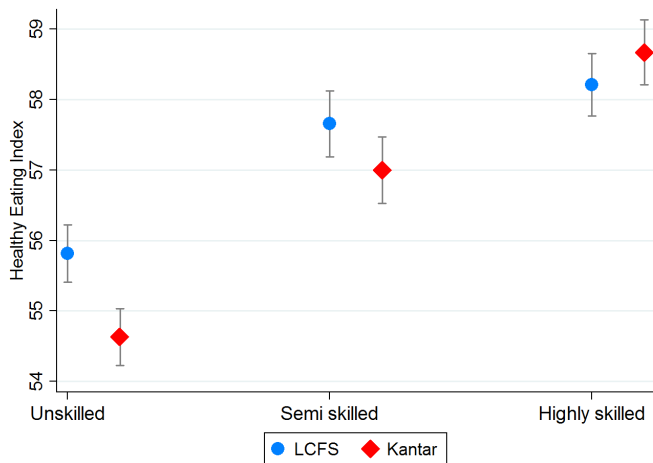
Cross-sectional variation in the HEI

Figure: Including and excluding food out in the LCFS sample, by household type



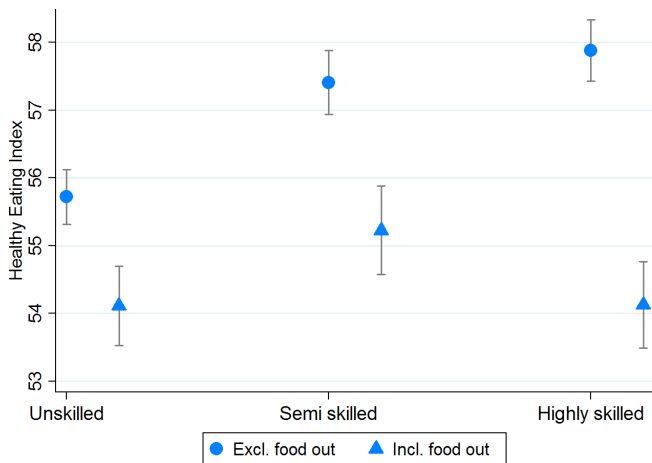
Cross-sectional variation in the HEI

Figure: Variation in the HEI in the LCFS and Kantar samples, by socioeconomic group



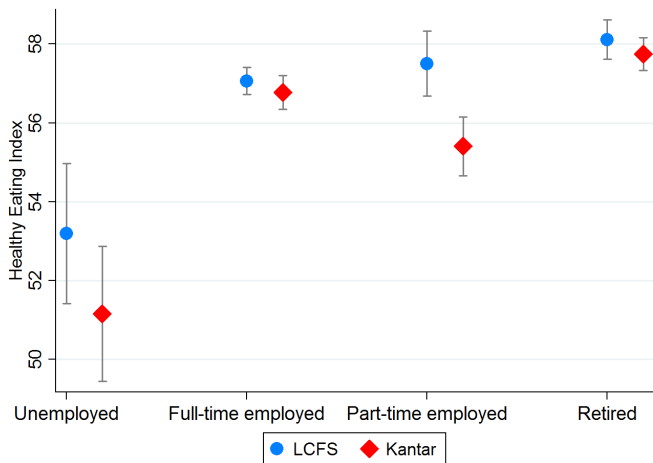
Cross-sectional variation in the HEI

Figure: Including and excluding food out in the LCFS sample, by socioeconomic group



Cross-sectional variation in the HEI

Figure: Variation in the HEI in the LCFS and Kantar samples, by head of hh employment



Cross-sectional variation in the HEI

Figure: Including and excluding food out in the LCFS sample, by head of hh employment

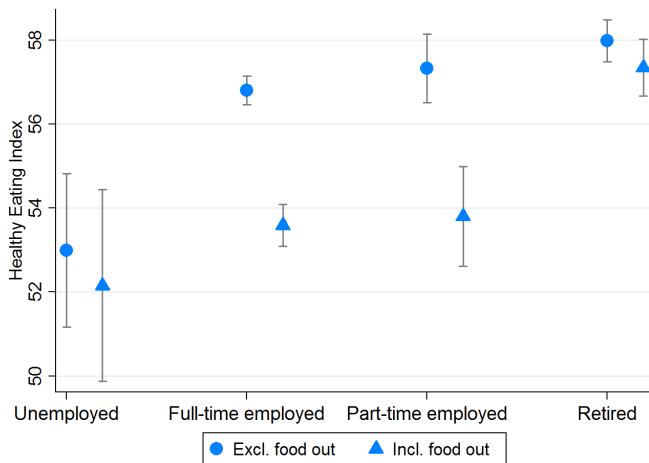
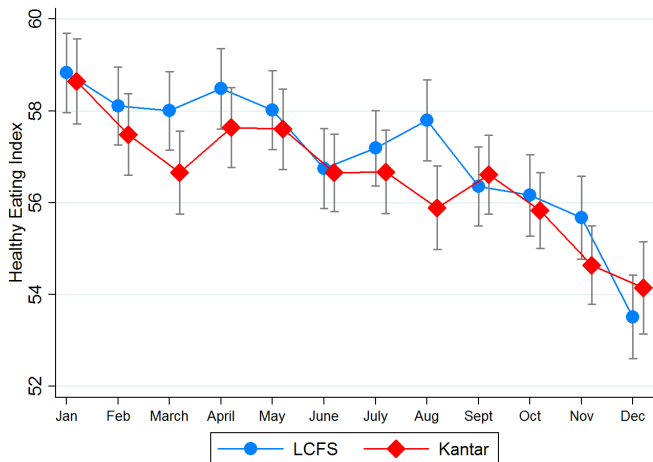
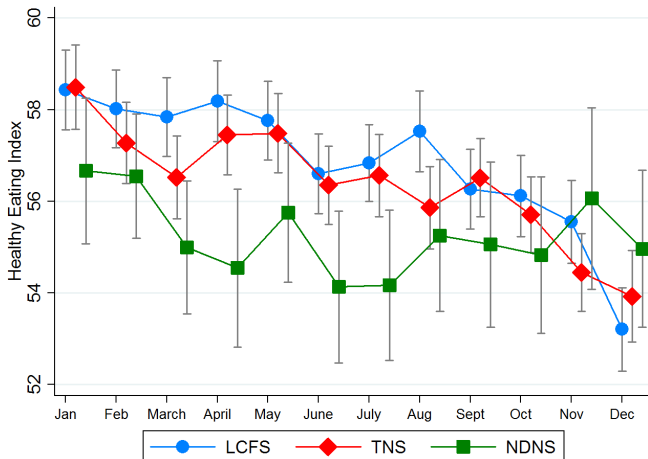


Figure: Variation in the HEI in the LCFS and Kantar samples, by month



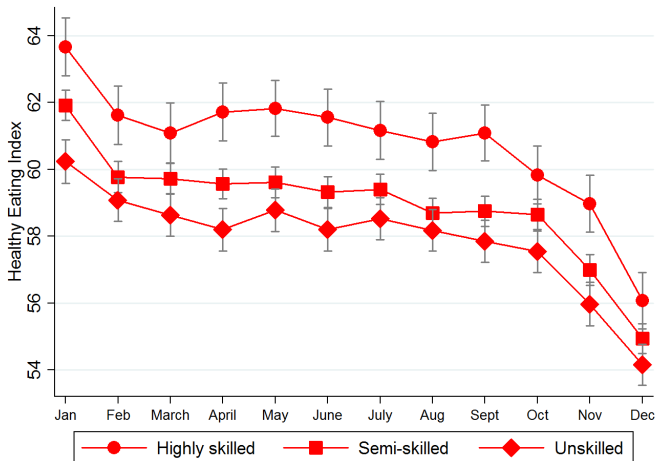
Within year variation in the HEI

Figure: Variation in the HEI in the NDNS, LCFS and Kantar samples, by month



Within year variation in the HEI

Figure: Monthly variation in the Kantar sample, by socioeconomic group



Notes: calculated across households in the Kantar Worldpanel who record continuously for 2009.

- ▶ Compare a measure of diet quality in different datasets
- ▶ Differences in sampling method and technology appear to be less important than whether we are recording food purchases or consumption
- ▶ Varying degree of intra-household variation in diet quality
- ▶ Interesting cross sectional and time variation in diet quality: investigate this in more detail

1. Effect of sampling/collection method

Calories purchased

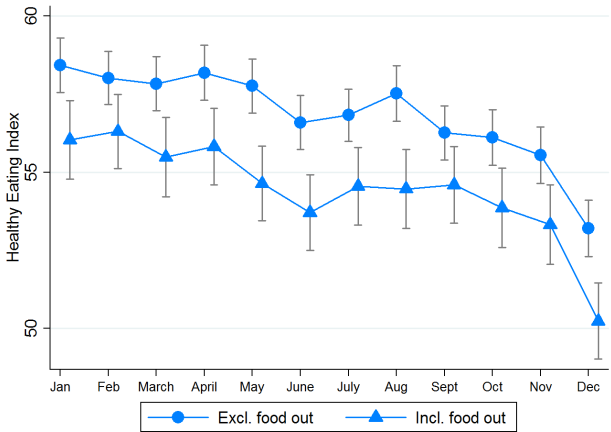
	LCFS	Kantar	Difference
North East	2429	2140	289***
North West	2394	2279	115**
Yorkshire	2385	2243	142***
East Midlands	2487	2255	232***
West Midlands	2483	2232	251***
Eastern	2438	2253	185***
London	2284	2146	138**
South East	2436	2265	171***
South West	2560	2273	287***
Wales	2466	2299	167**
Scotland	2477	2205	272***
Highly skilled	2308	2122	186***
Semi skilled	2483	2212	271***
Unskilled	2511	2350	161***
0 cars	2443	2381	62*
1 car	2464	2289	175***
2+ cars	2389	2000	389***
All households	2439	2240	199***

2. Intra-household variation in diet quality

Results

Age of child	Male children			Female children		
	Adult	Child	Diff.	Adult	Child	Diff.
<i>All adults</i>						
0 to 5	54.91	57.28	-2.36	56.86	58.22	-1.36
6 to 9	57.65	56.86	0.79	56.71	56.01	0.70
10 to 14	56.92	52.71	4.20**	52.04	52.93	-0.88
15 to 18	52.22	47.87	4.35**	53.42	51.16	2.25
<i>Male adults</i>						
0 to 5	52.47	57.06	-4.59	52.67	57.03	-4.36*
6 to 9	58.18	58.08	0.09	54.27	55.32	-1.04
10 to 14	53.29	55.81	-2.52	49.12	54.37	-5.25
15 to 18	49.98	47.48	2.50	51.44	49.09	2.34
<i>Female adults</i>						
0 to 5	56.79	54.78	2.01	59.66	59.25	0.40
6 to 9	57.45	57.61	-0.15	59.00	57.92	1.08
10 to 14	59.12	52.61	6.50**	53.33	49.60	3.73
15 to 18	54.58	45.31	9.27**	54.32	51.00	3.31

Figure: Including and excluding food out in the LCFS sample



▶ Back: monthly variation