

## **The Socio-economic Gradient of Obesity in Ireland – Corrigendum**

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*Abstract:* In a paper published in this journal in 2013 concentration indices for obesity were presented for male and female obesity. Decompositions of the indices were also presented. There was an error in the calculations which led to an overstatement of the concentration indices for obesity for both men and women. The decompositions were qualitatively unaffected. The corrected results are presented here.

### I INTRODUCTION

In the empirical work in an article recently published in this journal (Madden, 2013) an error was made in the calculation of concentration indices for obesity for men and women for Ireland for 2002 and 2007.<sup>1</sup> An error in the statistical code used to calculate the indices led to reported concentration indices in excess of those actually implied by the data. Concentration indices for men for 2002 and 2007 are now calculated as  $-0.018$  and  $-0.035$  respectively (originally calculated as  $-0.106$  and  $-0.22$  respectively). The corrected indices for women for 2002 and 2007 are now  $-0.05$  and  $-0.042$  respectively (originally calculated as  $-0.423$  and  $-0.323$  respectively). The corrected table (Table 3 in Madden, 2013) is presented below (all data unchanged from Madden, 2013):

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<sup>1</sup> For an explanation of the concentration index and its decomposition, see Madden (2013).

Table 1: *Concentration Indices for Obesity (BMI > 30, Standard Error in Brackets)*

Year	Incidence		Conditional C	
	Male	Female	Male	Female
2002	-0.018 (0.033)	-0.05 (0.032)	-0.003 (0.004)	-0.004 (0.005)
2007	-0.035 (0.018)	-0.042 (0.014)	-0.002 (0.002)	-0.004 (0.003)

These results indicate that the socio-economic gradient in obesity in Ireland (as measured by the concentration index) was less pronounced than was originally calculated. In 2002 the concentration index for males was not statistically significant, while it was only barely statistically significant for females. By 2007, the concentration index for males had risen (and had now attained statistical significance), while for females it was marginally lower but now statistically significant. Thus while the level of the socio-economic gradient was not as pronounced, the direction of change over the 2002-2007 period remains the same.

Madden (2013) also presented a decomposition of the concentration index into those observable factors which contributed to the index. The table below presents the corrected version of this decomposition. The residual part of the decomposition is now considerably higher. However, the relative contributions of each factor are quite similar to before. The principal contributions to the concentration index come from self-assessed health, education (in particular third level education) and income. There is also a role for marital status, though it is more important for men in 2002 and for women in 2007. The increase in the sensitivity of obesity to income between 2002 and 2007 is also apparent, as was the case in the earlier version.

In summary, the corrected figures show an overall lesser socio-economic gradient for obesity for both genders, though the direction of change between 2002 and 2007 is as before, with the gradient increasing for men and decreasing slightly for women. In terms of the decomposition, the principal contributory factors continue to be self-assessed health, education and income.

Table 2a: *Decomposition of Concentration Indices, Men*

	2002			2007		
	<i>Elasticities</i>	<i>Concentration Index</i>	<i>Contribution</i>	<i>Elasticities</i>	<i>Concentration Index</i>	<i>Contribution</i>
Age	6.214	-0.058	-0.36	4.756	-0.055	-0.26
Age <sup>2</sup>	-3.330	-0.115	0.382	-2.582	-0.111	0.286
Health	-0.318	0.180	-0.057	-0.365	0.216	-0.079
Smoker	-0.042	-0.062	0.003	-0.041	-0.067	0.003
Intermediate Certificate	-0.049	-0.138	0.007	0.004	-0.118	0
Leaving Certificate	-0.056	0.060	-0.003	-0.007	0.010	0
Third Level	-0.223	0.402	-0.09	-0.125	0.440	-0.055
Married	0.025	0.065	0.002	0.136	0.132	0.018
Widowed	0.019	-0.040	-0.001	0.004	-0.055	0
Separated/ Divorced	0.031	-0.0184	-0.001	-0.007	-0.009	0
Home Duties	0.007	-0.004	0	-0.006	-0.010	0
Unemployed	-0.017	-0.010	0.002	0.002	-0.083	0
Retired	-0.008	-0.165	0.001	-0.009	-0.263	0.002
Student	-0.008	0.000	0	-0.007	-0.036	0
Sick	-0.024	-0.092	0.002	-0.013	-0.112	0.001
Other	-0.000	-0.010	0	-0.001	-0.008	0
EquivalentY	-0.278	0.066	-0.018	-0.804	0.057	-0.046
Residual			0.113			0.095
Total			-0.018			-0.035

Table 2b: *Decomposition of Concentration Indices, Women*

	2002			2007		
	<i>Elasticities</i>	<i>Concentration Index</i>	<i>Contribution</i>	<i>Elasticities</i>	<i>Concentration Index</i>	<i>Contribution</i>
Age	5.001	-0.042	-0.212	4.270	-0.042	-0.179
Age <sup>2</sup>	-2.777	-0.093	0.257	-2.348	-0.092	0.215
Health	-0.945	0.155	-0.146	-0.433	0.167	-0.072
Smoker	-0.040	-0.095	0.004	-0.050	-0.126	0.006
Intermediate Certificate	-0.083	-0.181	0.015	-0.028	-0.193	0.005
Leaving Certificate	-0.274	0.003	-0.001	-0.130	0.004	-0.001
Third Level	-0.297	0.371	-0.11	-0.246	0.432	-0.106
Married	-0.099	0.153	-0.015	0.003	0.274	0.001
Widowed	-0.020	-0.129	0.003	-0.035	-0.164	0.006
Separated	-0.016	-0.062	0.001	0.008	-0.067	-0.001
Divorced						
Home Duties	0.045	-0.197	-0.009	0.004	-0.195	-0.001
Unemployed	-0.009	-0.046	0	-0.001	-0.047	0
Retired	-0.016	-0.089	0.001	0.024	-0.166	-0.004
Student	-0.007	-0.017	0	0.004	-0.026	0
Sick	-0.012	-0.061	0.001	0.003	-0.040	0
Other	0.008	0.002	0	0.002	-0.014	0
Equivalent Y	-0.483	0.065	-0.031	-0.745	0.062	-0.046
Residual		0.192				0.135
Total		-0.05				-0.042

## REFERENCES

- MADDEN, D., 2013. "The Socio-economic Gradient of Obesity in Ireland", *The Economic and Social Review*, Vol. 44, No. 2, pp. 181-196.