Additional comments on pricing 'halo effects'

In further exploration of the potential halo effect of price reductions at weekends, we aimed to better account for the sampling strategy (a sort of triple matched sample: market, nearby supermarket, distant supermarket) and the fact that repeated measurements of prices within a [super]market could be expected to be more similar to themselves than to other [super]markets (i.e., intraclass correlation). To do this, we fitted a multi-level model of average prices for four separate items at the weekend by outlet type where essentially each 'triplet' of [super]markets is being treated as internally related. As our results indicate, our sample was too small to detect significant effects using this type of modelling. Future exploration of the potential halo effect could utilise a similar methodology, but likely requires a larger sample of [super]markets (depending on the size of the price differences). We use the price of carrots to test this method in tables 1 and 2 below. We also fitted separate regression models for the prices of apples, oranges, pears, broccoli, Chinese cabbage, potatoes, onions, pumpkin and tomatoes and did not detect a significant associations using this new method.

Table 1.Average and standard deviation of the price of carrots by outlet type: markets (1), nearby supermarkets (2) and distant supermarkets (3)

typel	N	mean	sd
1	8	2.564173	1.52219
2	8	1.97	.1884187
3	8	2.053958	.1835798
Total	24	2.196044	.8934125

Table 2. Multilevel regression results for average price of carrots predicted by outlet type (reference group was markets/OFVM), accounting for the 'triplet' sampling methodology, beta coefficients and p-values circled in blue.

Computing standard errors:

Mixed-effects ML regression — Number of obs = 24
Group variable: sample — Number of groups = 8

Obs per group: min = 3
avg = 3.0
max = 3

Wald chi2(2) = 2.38
Log likelihood = -29.705551 — Prob > chi2 = 0.3047

avgprice	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
typel						
2	-.594173	.4171312	-1.42	0.154	-1.411735	.2233892
3	-.5102147	.4171312	-1.22	0.221	-1.327777	.3073475
_cons	2.564173	.2949563	8.69	0.000	1.986069	3.142277

Random-effects Parameters	Estimate	Std. Err.	[95% Conf.	Interval]
sample: Identity				
sd(_cons)	8.37e-08	7.10e-07	4.98e-15	1.406231
sd(Residual)	.8342624	.1204154	.6286984	1.107039

LR test vs. linear regression: chibar2(01) = 0.00 Prob >= chibar2 = 1.0000