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Supplementary Information for

Impact of increasing vegetarian availability on meal selection and sales in cafeterias

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Fig. S1. Photo of College C cafeteria with four options served.

Study 1: Example menus

Table S1. College A, example of a menu listed online. (v)=vegetarian, (ve)=vegan. Although the menus present 3 options, the number of meals served at the cafeteria often varied.

Lunch				
Monday	Tuesday	Wednesday	Thursday	Friday
Creamy Chicken & Bacon Pasta with Basil	Beef, Mushroom, & Guinness Flaky Pastry Pie	Shepherd's Pie	Teriyaki Marinated Pork Steak with Toasted Cashews	Chicken Tikka
Vegetable Samosa with Coriander Lentil Dahl (ve)	Glamorgan Sausage & Red Onion Gravy (Veggie of Course) (v)	Tofu & Cashew Nut Stir Fry, with Hoi Sin & Spring Onion (ve)	Sweet Potato & Leek Gratin with a Crispy Oregano Topping (v)	Butternut Squash & Field Mushroom Moussaka (v)
Oriental Loin of Cod With Asian Vegetables	Chestnut Mushroom & Spinach Pasta Bake (v)	Grilled Fillet of Hake, Tomato & Chorizo Sauce	Quorn Fajita, with peppers, tortillas, salsa and sour cream (v)	Chip Shop Style Fried Fish With Homemade Tartare Sauce
Dinner				
Monday	Tuesday	Wednesday	Thursday	Friday
Beef & Broccoli Stir Fry with Ginger.	Honey Glazed Gammon Steak with Char Grilled Pineapple	Lemon, Thyme, & Garlic Butterflied Chicken Fillet	Lamb Hotpot	Beef Cobbler
Kadala Curry, with Chick Peas & Spinach (ve)	Baked Potato Skins filled with Vegetable Chilli & topped with Sour Cream & Chives (v)	Mushroom Stroganoff (v)	Red Pepper & Aubergine Lasagne (v)	Moroccan Spiced Vegetable Tagine with Apricots (ve)
Smoked Haddock & Spring Onion Fishcakes, Pea & Mint Sauce	Beef Lasagne	Moqueca	Chicken & Mushroom Pie	Fresh Fish of The Day

Table S2: College B, example of a menu listed online. (V)=vegetarian, (ve)=vegan. Although the menus present 3 options, the number of meals served at the cafeteria often varied.

Lunch				
Monday	Tuesday	Wednesday	Thursday	Friday
Chicken, Mediterranean vegetable and Chorizo Paella	Maple glazed bacon chop with an apple and sage fritter	Roast leg of English lamb with sautéed tarragon and pears	Mediterranean vegetable and galbani mozzarella en croute with a Provençale sauce (v)	Barbecue Quorn, roasted pepper and plum tomato pizza with mozzarella (v)
Spaghetti Bolognese with parmesan	Moroccan chicken on garlic flatbread with tomato and coriander salsa and Monterey jack cheese	Roast loin of pork with mustard crackling and apple sauce	Cauliflower florets in a spicy batter with a curried tikka masala sauce (v)	Puy lentil and Mexican vegetable fajitas with guacamole (ve)
Mushroom, spinach, and sweet potato wellington with camembert cheese, tomato sauce (v)	Chick pea, local fenland vegetable and basil tagine, red onion cous-cous (ve)	Leek, mushroom and goats cheese filo pastry strudel with a grain mustard sauce (v)	Griddled rump of beef with tomato, onion rings and a peppercorn sauce	Piri-Piri fillet of chicken with a coriander and tomato guacamole
Dinner				
Monday	Tuesday	Wednesday	Thursday	Friday
Roasted tofu, broccoli and courgette pad Thai with sesame and cilantro (ve)	Deep fried scampi with lemon and lime wedges	Jamaican jerk pork curry with a coconut, mango and pea rice	Minced beef and spinach lasagne	Beer battered fillet of cod with lemon
Winter vegetable and cannellini bean stew with crispy herb dumplings (v)	Braised topside of beef steak in local ale, grelots and wild mushrooms	Creamy garlic and basil baked fillet of chicken with a warm Caesar salad	Panko breaded butterfly chicken breast with a Katsu sauce and rice	Lamb and minted winter vegetable casserole with redcurrants and crusty bread
Lamb jalfrezi with a mushroom and coriander rice pilau, poppadum's	Broccoli, cashew nut and halloumi curry, herb pilaff rice (v)	Roasted asparagus, sun blushed tomato and chestnut mushroom carbonara (v)	Sri Lankan dahl and Vegetable curry with wholemeal rice (ve)	Wild mushroom, roasted butternut squash and sun blushed tomato risotto with parmesan (v)

Study 1: Effect of removing meals with no vegetarian options

Table S3: Comparing GLMs with vegetarian availability as the only predictor when meals with no vegetarian options are included and excluded. Including mealtimes with no vegetarian options increases the level of variation explained by vegetarian availability (McFadden's pseudo R^2) but this risks overestimating its effect on vegetarian sales. Mealtimes with no vegetarian options were excluded from the main analyses.

	College A		College B	
	Mealtimes with no veg options excluded	Mealtimes with no veg options included	Mealtimes with no veg options excluded	Mealtimes with no veg options included
Number of meals	269	277	266	269
McFadden's R^2 (univariate GLM)	0.209	0.267	0.319	0.332

Study 1: Frequency of vegetarian and total options

Table S4: Frequency of vegetarian options by total options in College A and B across all meals assessed.

		Total options available						
		2	3	4	5	6	7	8
College	Vegetarian options available							
A	0	0	1	5	1	1	0	0
	1	3	41	89	51	20	0	0
	2	0	2	13	21	13	3	1
	3	0	0	1	3	5	2	1
B	0	2	1	0	0	0	0	0
	1	0	99	89	13	1	0	1
	2	0	20	28	11	1	3	0

Study 1: Best models for vegetarian sales - aggregate data

Table S5: Best model for vegetarian sales at College A. VegSales ~ VegAvailPercent + TotalMealsSold + TotalOptionsAvailable + Term + Meal + MeanTemp + VegNonVegPriceDifferential + Day + Week. AIC = 3082.8, log-likelihood =-1518.4, McFadden's pseudo R^2 = 0.261. Conditions used to generate predictions: VegAvailPercent=25, TotalMealsSold=180, TotalOptionsAvailable=4, Term=Summer, Meal=Lunch, MeanTemp=10, VegNonVegPriceDifferential=0.2, Day=Wed, Week=5. Effect size calculated by taking the exponential of the model estimate.

Variable	Effect size	Effect size 95% CIs	p-value	Narrative	Example value	Predicted veg sales (%)	Example value	Predicted veg sales (%)
Veg Availability (%)	1.028	1.026, 1.030	<0.001	Meals with higher vegetarian availability had higher vegetarian sales.	25	24.1	50	39.0
Total meals sold	1.001	1.001, 1.002	<0.001	Mealtimes with more meals sold had higher vegetarian sales.	100	22.1	200	24.6
Total options available	0.971	0.950, 0.992	<0.01	Mealtimes with more total options had lower vegetarian sales.	3	24.6	5	23.7
Summer term	0.844	0.784, 0.909	<0.001	Summer term has lower vegetarian sales than spring.	Spring	27.3	Summer	24.1
Autumn term	0.830	0.784, 0.878	<0.001	Autumn term has lower vegetarian sales than spring.	Spring	27.3	Autumn	23.8
Meal	1.087	1.037, 1.139	<0.001	Dinner has higher vegetarian sales than lunch.	Lunch	24.1	Dinner	25.7
Mean temperature	1.011	1.005, 1.016	<0.001	Warmer temperatures had higher vegetarian sales.	5°C	23.2	15°C	25.1
Veg NonVeg price differential	1.475	1.224, 1.777	<0.001	Meals with relatively cheaper vegetarian options had higher vegetarian sales.	£0.05	23.1	£0.50	26.3
Tuesday	1.130	1.060, 1.205	<0.001	Tuesdays and Thursdays had higher vegetarian sales than Monday. Wednesdays' and Fridays' vegetarian sales do not differ significantly from Mondays'.	Mon	23.1	Tue	25.4
Wednesday	1.056	0.995, 1.121	0.073		-	-	Wed	24.1
Thursday	1.196	1.124, 1.272	<0.001		-	-	Thu	26.4
Friday	0.953	0.892, 1.018	0.153		-	-	Fri	22.3
Week 2	1.210	1.111, 1.318	<0.001	Weeks 2, 4, 5 and 8 had higher vegetarian sales than Week 1. Weeks 3, 6, 7, 9, 10 and 11 week do not had significantly different vegetarian sales than Week 1.	Week 1	21.8	Week 2	25.2
Week 3	1.058	0.971, 1.153	0.198		-	-	Week 3	22.8
Week 4	1.097	1.008, 1.194	0.032		-	-	Week 4	23.4
Week 5	1.140	1.045, 1.244	0.003		-	-	Week 5	24.1
Week 6	1.009	0.923, 1.103	0.846		-	-	Week 6	21.9
Week 7	1.034	0.950, 1.125	0.440		-	-	Week 7	22.4
Week 8	1.185	1.076, 1.304	<0.001		-	-	Week 8	24.8
Week 9 (Spring and Autumn term)	1.046	0.940, 1.162	0.408		-	-	Week 9	22.6
May Week (Summer term only)	1.149	0.942, 1.310	0.172		-	-	Week 10	24.2
Grad Week (Summer term only)	1.111	0.940, 1.400	0.210		-	-	Week 11	23.6

Table S6: Best model for vegetarian sales at College B. VegSales ~ VegAvailPercent + TotalOptionsAvailable + Term + Meal + MeanTemp + VegNonVegPriceDifferential + Day + Week. AIC=2146.7, log-likelihood=-1052.3, McFadden's pseudo R2 = 0.393. Conditions used to generate predictions: VegAvailPercent=25, TotalOptionsAvailable=4, Term=Summer, Meal=Lunch, MeanTemp=10, VegNonVegPriceDifferential=0.2, Day=Wed, Week=5. Effect size calculated by taking the exponential of the model estimate.

Variable	Effect size	Effect size 95% CIs	p-value	Narrative	Example value	Predicted veg sales (%)	Example value	Predicted veg sales (%)
Veg Availability (%)	1.032	1.029, 1.034	<0.001	Meals with higher vegetarian availability had higher vegetarian sales.	25	18.4	50	32.9
Total meals sold	NA	NA	NA	Not included in best model.	100	NA	200	NA
Total options available	1.099	1.060, 1.139	<0.001	Mealtimes with more total options had higher vegetarian sales.	3	17.0	5	19.9
Summer term	1.163	1.064, 1.272	<0.001	Summer term has higher vegetarian sales than spring.	Spring	16.2	Summer	18.4
Autumn term	1.402	1.306, 1.504	<0.001	Autumn term has higher vegetarian sales than spring.	Spring	16.2	Autumn	21.4
Meal	1.209	1.148, 1.273	<0.001	Dinner has higher vegetarian sales than lunch.	Lunch	18.4	Dinner	21.4
Mean temp	0.992	0.985, 0.999	0.0254	Warmer temperatures had lower vegetarian sales.	5°C	19.0	15°C	17.8
Veg NonVeg price differential	0.327	0.207, 0.517	<0.001	Meals with relatively cheaper vegetarian options had lower vegetarian sales.	£0.05	21.1	£0.50	13.9
Tuesday	0.986	0.909, 1.069	0.726	Tuesdays did not have significantly different vegetarian sales to Mondays; Wednesdays and Fridays had higher vegetarian sales, and Thursdays lower, than Mondays.	Mon	16.1	Tue	15.9
Wednesday	1.173	1.083, 1.271	<0.001		-	-	Wed	18.4
Thursday	0.880	0.812, 0.954	<0.01		-	-	Thu	14.5
Friday	1.098	1.010, 1.192	0.027		-	-	Fri	17.4
Week 2	1.078	0.965, 1.204	0.181	Weeks 2 and 10 did not have significantly different vegetarian sales from Week 1, Weeks 3, 4, 5, 6, 7, 8 and 9 had higher vegetarian sales than Week 1.	Week 1	15.0	Week 2	16.0
Week 3	1.153	1.033, 1.286	0.011		-	-	Week 3	16.9
Week 4	1.148	1.029, 1.282	0.0138		-	-	Week 4	16.9
Week 5	1.275	1.141, 1.425	<0.001		-	-	Week 5	18.4
Week 6	1.216	1.085, 1.364	<0.001		-	-	Week 6	17.7
Week 7	1.163	1.043, 1.296	<0.01		-	-	Week 7	17.1
Week 8	1.261	1.123, 1.417	<0.001		-	-	Week 8	18.2
Week 9 (Spring and Autumn term)	1.209	1.069, 1.366	<0.01		-	-	Week 9	17.6
May Week (Summer term only)	1.171	0.921, 1.482	0.192		-	-	Week 10	17.2

Study 1: Percentage of vegetarian meals bought by diners

Table S7: Levels of vegetarian meal consumption during the study period (2017) and the previous term (autumn 2016) used to calculate prior levels of vegetarian meal consumption.

		College A		College B	
		Autumn term 2016	2017 terms	Autumn term 2016	2017 terms
All diners	Number of diners	940	1394	495	746
Diners who bought 10 or more meals	Number of diners	605	1013	227	565
	Omnivores, vegetarians and carnivores				
	Number of obligate vegetarians, (vegetarian =100%)	12	6	7	14
	Number of omnivores	533	970	144	496
	Number of obligate carnivores, (vegetarian =0%)	60	37	76	55
	Percentage of vegetarian meals bought by individual diners				
	Lower quartile	7.7%	10.8%	0%	6.3%
	Median	18.9%	21.4%	7.1%	16.4%
	Mean	26.9%	28.3%	17.0%	24.9%
	Upper quartile	36.4%	37.9%	22.7%	32.6%

Study 1: Data included in individual-level analyses

Table S8: Number of cafeteria visits, meals bought and diners in the individual-level data included in analyses. We used a binomial ("VegModel") variable, representing each cafeteria visit made by identifiable diners, to analyse the data: if one or more vegetarian meals were bought at one mealtime this was coded as 1, and 0 for one or more meat meals. If a diner bought a vegetarian meal(s) and a meat meal(s) at one meal time this was coded as NA and excluded from the analysis.

Data type	Data	College A			College B		
		Cafeteria visits	Meals bought	Diners	Cafeteria visits	Meals bought	Diners
Aggregate data	Data from both guests and identifiable diners	NA	51,251	NA	NA	35,681	NA
Individual-level data	All data	43,751	46,109	1,394	31,956	34,191	746
	Data with a prior-level of vegetarian meals consumption value	33,180	34,804	597	19,950	21,514	222
	Data with a VegModel variable	43,052	44,568	1,386	31,488	33,147	741
	Data included in analysis (values for prior-level of vegetarian meal consumption and VegModel variable)	32,687	33,729	597	19,663	20,856	222

Study 1: Best models for likelihood of choosing a vegetarian meal - individual-level data

Table S9: College A, best model for likelihood of selecting a vegetarian meal. VegModelVariable ~ (VegAvailPercent*PriorVegConsumptionQuartile) + TotalMealsSold + TotalOptionsAvailable + Term + Meal + MeanTemp + Day + Week + (1|CardUser). AIC= 29499.7, log-likelihood= -14719.8. Conditions used to generate predictions: VegAvailPercent=25, TotalMeals=180; TotalOptionsAvailable=4; Term=Easter; Meal=Lunch; Mean temp=10; VegNonVegPriceDiff=£0.20; Day=Wed; Week=5; Vegetarian consumption quartiles weighted equally. Effect size calculated by taking the exponential of the model estimate.

Variable	Effect size	Effect size 95% CIs	p-value	Narrative	Example value	Likelihood of selecting a veg meal	Example value	Likelihood of selecting a veg meal
Veg Availability (%)	1.037	1.031, 1.042	<0.001	Likelihood of selecting a vegetarian meal increased as vegetarian availability increased. The likelihood of the Most Vegetarian quartile selecting a vegetarian meal > MoreVeg > LessVeg > LeastVeg.	25	0.605	50	0.791
Quartile-MoreVeg	0.174	0.128, 0.237	<0.001		25	0.221	50	0.426
Quartile-LessVeg	0.095	0.069, 0.131	<0.001		25	0.137	50	0.299
Quartile-LeastVeg	0.032	0.023, 0.045	<0.001		25	0.062	50	0.181
VegAvail:MoreVeg	1.002	0.995, 1.010	0.522	Only the Least Vegetarian quartile has a stronger response to increasing vegetarian availability than the MostVeg.	NA	NA	NA	NA
VegAvail:LessVeg	1.003	0.996, 1.011	0.382		NA	NA	NA	NA
VegAvail:LeastVeg	1.012	1.004, 1.020	0.004		NA	NA	NA	NA
Total meals sold	1.002	1.001, 1.003	<0.001	Likelihood of selecting a vegetarian meal increased as more meals were sold.	100	0.181	250	0.231
Total options available	0.952	0.922, 0.983	0.002	Lower likelihood of selecting a vegetarian when there were more total options.	3	0.215	5	0.199
Summer term	0.821	0.735, 0.918	<0.001	Higher likelihood of selecting a vegetarian meal in Spring term than Summer and Autumn.	Spring	0.241	Summer	0.207
Autumn term	0.779	0.710, 0.854	<0.001		-		Autumn	0.198
Meal	1.155	0.797, 0.943	<0.001	Higher likelihood of selecting a vegetarian meal at lunch than dinner.	Lunch	0.207	Dinner	0.184
Mean temp	1.010	1.001, 1.019	0.030	Higher likelihood of selecting a vegetarian meal at higher ambient temperatures.	5°C	0.198	15°C	0.215
Veg NonVeg price differential	1.779	1.359, 2.343	<0.001	Higher likelihood of selecting a vegetarian meal when they are relatively cheaper compared to meat meals	£0.05	0.193	£0.50	0.237
Tuesday	1.270	1.156, 1.394	<0.001	Tuesdays and Thursdays had higher likelihoods of selecting a vegetarian meal than Mons. No significant difference in likelihood between Mondays, Wednesdays and Fridays.	Mon	0.201	Tue	0.242
Wednesday	1.035	0.947, 1.130	0.449		-	-	Wed	0.207
Thursday	1.336	1.218, 1.464	<0.001		-	-	Thu	0.252
Friday	0.896	0.810, 0.987	0.030		-	-	Fri	0.184
Week 2	1.237	1.092, 1.401	<0.001	Weeks 3, 4, 6, 7, 9 and 10 did not have significantly different likelihoods of selecting a vegetarian meal than Week 1; Weeks 2, 5, 8 and 11 had higher vegetarian sales than Week 1.	Week 1	0.183	Week 2	0.217
Week 3	1.082	0.953, 1.230	0.228		-	-	Week 3	0.195
Week 4	1.019	0.900, 1.155	0.770		-	-	Week 4	0.186
Week 5	1.162	1.018, 1.328	0.027		-	-	Week 5	0.207
Week 6	1.009	0.882, 1.158	0.894		-	-	Week 6	0.185
Week 7	0.976	0.860, 1.109	0.703		-	-	Week 7	0.180
Week 8	1.232	1.062, 1.431	0.006		-	-	Week 8	0.216
Week 9	1.105	0.935, 1.304	0.242		-	-	Week 9	0.198
May Week (Summer term only)	1.223	0.939, 1.600	0.138		-	-	Week 10	0.215
Grad Week (Summer term only	1.353	1.002, 1.832	0.049		-	-	Week 11	0.233

Table S10: College B, best model for likelihood of selecting a vegetarian meal. VegModelVariable ~ (VegAvailPercent*PriorVegConsumptionQuartile) + TotalOptionsAvailable + Term + Meal + MeanTemp + VegNonVegPriceDifferential + Day + Week + (1|CardUser). AIC=12906.6, log-likelihood= -6426.3. Conditions used to generate predictions: VegAvailPercent=25, TotalOptionAvailables=4; Term=Easter; Meal=Lunch; VegNonVegPriceDiff=£0.20; Day=Wed; Week=5; Vegetarian consumption quartiles weighted equally. Effect size calculated by taking the exponential of the model estimate.

Variable	Effect size	Effect size 95% CIs	p-value	Narrative	Example value	Likelihood of selecting a veg meal	Example value	Likelihood of selecting a veg meal
Veg Availability (%)	1.030	1.023, 1.037	<0.001	Likelihood of selecting a vegetarian meal increased as vegetarian availability increased. The likelihood of the Most Vegetarian quartile selecting a vegetarian meal > MoreVeg > LessVeg > LeastVeg.	25	0.517	50	0.692
Quartile-MoreVeg	0.059	0.030, 0.116	<0.001		25	0.086	50	0.227
Quartile-LessVeg	0.031	0.015, 0.067	<0.001		25	0.052	50	0.159
Quartile-LeastVeg	0.012	0.006, 0.024	<0.001		25	0.023	50	0.082
VegAvail:MoreVeg	1.016	1.007, 1.025	<0.001	All other quartiles had a stronger response to increasing vegetarian availability than the MostVeg quartile.	NA	NA	NA	NA
VegAvail:LessVeg	1.020	1.010, 1.030	<0.001		NA	NA	NA	NA
VegAvail:LeastVeg	1.024	1.014, 1.034	<0.001		NA	NA	NA	NA
Total meals sold	NA	0.997, 1.141	NA	Not included in best model	100	NA	250	NA
Total options available	1.067	0.103, 0.545	0.061	Higher likelihood of selecting a vegetarian when there were more total options.	3	0.091	5	0.102
Summer term	1.106	0.983, 1.245	0.094	Higher likelihood of selecting a vegetarian meal in Autumn term than Spring term, no significant difference between Spring and Summer terms.	Spring	0.088	Summer	0.097
Autumn term	1.397	1.229, 1.587	<0.001		-	-	Autumn	0.119
Meal	1.114	1.007, 1.233	0.036	Higher likelihood of selecting a vegetarian meal at dinner than lunch.	Lunch	0.097	Dinner	0.107
Mean temp	NA	NA	NA	Not included in best model	5°C	-	15°C	-
Veg NonVeg price differential	0.237	0.103, 0.545	<0.001	Lower likelihood of selecting a vegetarian meal when they were relatively cheaper compared to meat meals	£0.05	0.117	£0.50	0.065
Tuesday	1.145	0.991, 1.323	0.067	No difference for likelihood of selecting a vegetarian meal on Tuesdays and Fridays, higher likelihood on Wednesdays and lower likelihood on Thursdays, compared to Mondays.	Mon	0.071	Tue	0.080
Wednesday	1.408	1.222, 1.623	<0.001		-	-	Wed	0.097
Thursday	0.846	0.731, 0.980	0.026		-	-	Thu	0.060
Friday	1.136	0.980, 1.317	0.091		-	-	Fri	0.079
Week 2	1.273	1.053, 1.539	0.013	Higher likelihood of selecting a vegetarian meal during Weeks 2, 3, 5, 6, 7 and 8 compared to Week 1. No difference in likelihood of selecting a vegetarian meal in Weeks 4, 9 and May Week compared to Week 1.	Week 1	0.077	Week 2	0.096
Week 3	1.281	1.064, 1.542	0.009		-	-	Week 3	0.096
Week 4	1.147	0.948, 1.386	0.157		-	-	Week 4	0.087
Week 5	1.284	1.067, 1.545	0.008		-	-	Week 5	0.097
Week 6	1.392	1.151, 1.683	<0.001		-	-	Week 6	0.104
Week 7	1.275	1.054, 1.544	0.013		-	-	Week 7	0.096
Week 8	1.459	1.199, 1.776	<0.001		-	-	Week 8	0.108
Week 9 (Spring and Autumn term)	1.177	0.939, 1.475	0.158		-	-	Week 9	0.089
May Week (Summer term only)	1.05	0.720, 1.530	0.801		-	-	Week 10	0.080

Study 1: Best models for total sales

Table S11: College A, best model for total sales. TotalMealsSold ~ VegAvailPercent + TotalOptionsAvailable + Term + Meal + Day + Week.
AIC=2788.1, log-likelihood= -1373.0, Adjusted R^2=0.425. Conditions used to generate predictions: VegAvailPercent=25; TotalOptionsAvailable=4, Term=Easter, Meal=Lunch, Day=Wed, Week=5. Effect size calculated by adding the model estimate to the intercept (162) and dividing by the intercept.

Variable	Effect size	Effect size CIs	p-value	Narrative	Example value	Predicted total sales	Example value	Predicted total sales
Veg Availability (%)	1.001	0.997, 1.003	0.707	Vegetarian availability had no significant effect on total sales.	25	216.8	50	219.2
Total options available	1.064	1.041, 1.078	<0.001	Higher total sales when there were more total options available, an average of 10.3 additional meals sold for every additional meal option.	3	206.5	5	216.8
Summer term	1.157	1.097, 1.195	<0.001	Higher total sales in Summer term than Spring term.	Spring	191.4	Summer	216.8
Autumn term	1.011	0.916, 1.072	0.783	No difference in total sales between Autumn term and Spring term.	-	-	Autumn	193.1
Meal	1.140	1.100, 1.166	<0.001	On average 22.7 more meals sold at dinner than lunch.	Lunch	216.8	Dinner	239.5
Mean temperature	NA	0.698, 0.965	NA	Not included in best model	5°C	NA	15°C	NA
Veg NonVeg price differential	NA	0.876, 1.077	NA	Not included in best model	£0.05	NA	£0.50	NA
Tuesday	0.861	0.765, 1.008	0.005	Tuesday and Friday had lower total sales than Monday; Wednesday and Thursday did not have significantly different total sales from Monday.	Mon	217.0	Tue	194.4
Wednesday	0.999	0.648, 0.932	0.979		-		Wed	216.8
Thursday	0.913	0.676, 1.014	0.080		-		Thu	202.9
Friday	0.821	0.741, 1.055	<0.001		-		Fri	188.0
Week 2	0.882	0.679, 1.013	0.087	Weeks 2, 3, 4, 5 and 7 did not have significantly different total sales from Week 1; Weeks 6, 8, 9, May Week and Grad Week had significantly lower total sales than Week 1.	Week 1	231.2	Week 2	212.0
Week 3	0.933	0.717, 1.036	0.325		-		Week 3	220.2
Week 4	0.882	0.609, 0.966	0.084		-		Week 4	212.1
Week 5	0.911	0.722, 1.041	0.190		-		Week 5	216.8
Week 6	0.827	0.450, 0.869	0.011		-		Week 6	203.0
Week 7	0.916	0.439, 0.885	0.217		-		Week 7	217.6
Week 8	0.706	-0.061, 0.641	<0.001		-		Week 8	183.4
Week 9 (Spring and Autumn term)	0.711	-0.403, 0.434	<0.001		-		Week 9	184.3
May Week 10 (Summer term)	0.366	0.674, 1.308	<0.001		-		Week 10	128.3
Week 11 (Summer term)	0.107	1.041, 1.078	<0.001		-		Week 11	86.3

Table S12: College B, best model for total sales. TotalMealsSold ~ VegAvailPercent + Day + Week

AIC=2378.3, log-likelihood= -1173.1, Adjusted R^2=0.421. Conditions used to generate predictions: VegAvailPercent=25, Day=Wed, Week=5. Effect size calculated by adding the model estimate to the intercept (166) and dividing by the intercept.

Variable	Effect size	Effect size 95% CIs	p-value	Narrative	Example value	Predicted total sales	Example value	Predicted total sales
Veg Availability (%)	0.998	0.997, 0.999	<0.001	Significantly fewer main meals were sold as vegetarian availability increased.	25	137.6	50	127.8
Total options available	NA	NA	NA	Not included in best model	3	NA	5	NA
Summer term	NA	NA	NA	Not included in best model	Spring	NA	Summer	NA
Autumn term	NA	NA	NA	Not included in best model	Spring	NA	Autumn	NA
Meal	NA	NA	NA	Not included in best model	Lunch	NA	Dinner	NA
Mean temperature	NA	NA	NA	Not included in best model	5°C	NA	15°C	NA
Veg NonVeg price differential	NA	NA	NA	Not included in best model	£0.05	NA	£0.50	NA
Tuesday	0.927	0.872, 0.976	0.003	Thursday did not have significantly different sales from Mondays. Tuesdays, Wednesdays and Fridays had significantly lower total sales than Mondays.	Mon	157.7	Tue	145.6
Wednesday	0.879	0.820, 0.931	<0.001		-		Wed	137.6
Thursday	0.963	0.910, 1.009	0.120		-		Thu	151.5
Friday	0.863	0.802, 0.917	<0.001		-		Fri	135.0
Week 2	0.976	0.906, 1.036	0.449	Weeks 2, 3, 4, 5, 6 and 7 did not have significantly different sales compared to Week 1. Weeks 8, 9, May Week and Grad Week had lower total sales than Week 1.	Week 1	136.4	Week 2	132.3
Week 3	1.004	0.937, 1.062	0.910		-	-	Week 3	137.0
Week 4	0.990	0.922, 1.049	0.747		-	-	Week 4	134.7
Week 5	1.007	0.941, 1.066	0.816		-	-	Week 5	137.6
Week 6	0.983	0.914, 1.044	0.603		-	-	Week 6	133.6
Week 7	0.982	0.913, 1.042	0.565		-	-	Week 7	133.3
Week 8	0.895	0.820, 0.961	0.001		-	-	Week 8	118.9
Week 9 (Spring and Autumn term)	0.924	0.844, 0.995	0.035		-	-	Week 9	123.8
May Week (Summer term)	0.532	0.398, 0.648	<0.001		-	-	May Week	58.5

Study 2: Example menus

Table S13: College C, control menu with no change to the number of vegetarian options on offer (usually one). (v)=vegetarian, (ve)=vegan. Although the menus present 4 options, the number of meals served at the cafeteria often varied.

Monday	Tuesday	Wednesday	Thursday	Friday
Brocolli and brie quiche (v)	Welsh Glamorgan vegetarian sausages with onion gravy (v)	Sundried tomato gnocchi with rocket (v)	Beef tomatoes stuffed with coconut vegetables (ve)	Vegetable jambalaya (ve)
Herby seafood crumble	Roast trout with spinach, sage and prosciutto	Hake with braised artichokes, peas and bacon	Catfish with chipotle and ancho chilli recado	Deep fried fish with tartar sauce
Breaded chicken with garlic and parsley butter	Denham farm state game and red wine pie	Sweet potato and chicken curry	Lamb and root vegetable cobbler	Chicken, mushroom and tarragon pie with shortcrust pastry
Vegetable chimichangers (ve)	Today's pasta with choice of two sauces	Spicy chicken pasty with sticky pickle	Today's pasta with choice of two sauces	Pork fajita

Table S14: College C, experimental menu with two designated vegetarian options. (v)=vegetarian, (ve)=vegan. Although the menus present 4 options, the number of meals served at the cafeteria often varied.

Monday	Tuesday	Wednesday	Thursday	Friday
Agadeshi with buckwheat noodles (ve)	Mediterranean stuffed peppers (ve)	Roasted pepper and applewood smoked cheese quiche (v)	Porcini mushroom bolognaise with wholemeal spaghetti (v)	Lentil and barley burger with spicy fruit salsa (ve)
Fish pie with a cheese and pretzel crust	Smoked haddock fish cakes with creamed leeks	Pan roasted salmon with three tomatoes	Fish and prawn pasties	Deep fried fish with tartar sauce
Chilli con carne finished with 70% dark chocolate	Chicken, smoked pancetta and bean stew with crispy sage	Spicy beef South African curry	Crispy fennel pork belly with herb salsa	Harissa and lime yoghurt lamb steak
Gluten free pasta with roasted red pepper and tomoato sauce (ve)	Korean noodles with garlic and ginger stir-fried vegetables and noodles (v)	Gluten free pasta with wild mushroom and mascarpone sauce (v)	Blackened aubergine veggie chilli (ve)	Gluten free pasta with roasted butternut (ve)

Study 2: Frequency of vegetarian and total options

Table S15: Frequency of vegetarian options by the total options available and by experimental allocation, observations made at 44 lunchtimes.

	Total Options Available				*Experimental allocation of number of vegetarian options*	
Vegetarian options available	*4*	*5*	*6*		*1 (Control)*	*2 (Experimental)*
1	5	2	1		8	0
1.5	4	8	0		9	3
2	13	11	0		4	20

Study 2: Best model for vegetarian sales - aggregate data

Table S16: Best model for vegetarian sales at College C. VegSales~VegAvailPercent+TotalMealsSold+MeanTemp+VegNonVegPriceDifferential+Day+Week.

AIC = 464.6, log-likelihood = -212.3, McFadden's pseudo R^2 = 0.318. Conditions used to generate predictions: VegAvailPercent=25, Total meals sold=150, Total options available=4, MeanTemp=10, VegNonVegPriceDifferential=0.2, Day=Wed, Week=5. Effect size calculated by taking the exponential of the model estimate.

Variable	Effect size	Effect size 95% CIs	p-value	Narrative	Example value	Predicted veg sales (%)	Example value	Predicted veg sales (%)
Veg Availability (%)	1.018	1.007, 1.028	<0.001	Meals with higher vegetarian availability had higher vegetarian sales.	25	19.1	50	26.9
Total meals sold	1.010	1.005, 1.015	<0.001	Mealtimes with more meals sold had higher vegetarian sales.	100	12.5	200	28.0
Total options available	1.101	0.949, 1.277	0.205	Mealtimes with more total options had lower vegetarian sales.	3	17.7	5	20.6
Mean temperature	0.938	0.912, 0.966	<0.001	Days with colder temperatures had higher vegetarian sales.	5°C	24.5	15°C	14.7
Veg NonVeg price differential	0.374	0.182, 0.766	0.007	Mealtimes with relatively cheaper vegetarian options had lower vegetarian sales.	£0.05	21.5	£0.50	15.0
Day: Tue	1.693	1.380, 2.078	<0.001	Tuesdays and Wednesdays had higher vegetarian sales than Mondays. Thursdays' and Fridays' vegetarian sales do not differ significantly from Mondays'.	Mon	12.5	Tue	19.5
Day: Wed	1.650	1.343, 2.029	<0.001		-		Wed	19.1
Day: Thu	1.167	0.960, 1.420	0.123		-		Thu	14.3
Day: Fri	1.048	0.843, 1.303	0.675		-		Fri	13.1
Week 2	0.955	0.537, 1.712	0.876	Week 9 had lower vegetarian sales than Week 1. All other weeks did not have significantly different vegetarian sales than Week 1.	Week 1	15.7	Week 2	15.1
Week 3	0.924	0.498, 1.740	0.804				Week 3	14.7
Week 4	1.409	0.853, 2.382	0.189				Week 4	20.8
Week 5	1.266	0.803, 2.052	0.323				Week 5	19.1
Week 6	1.127	0.685, 1.894	0.644				Week 6	17.4
Week 7	0.855	0.512, 1.458	0.556				Week 7	13.8
Week 8	1.130	0.690, 1.894	0.635				Week 8	17.4
Week 9	0.585	0.352, 0.994	0.043				Week 9	9.8
Week 10 (Christmas holidays)	1.186	0.715, 2.007	0.516				Week 10	18.1
Week 11 (Christmas holidays)	1.229	0.715, 2.157	0.463				Week 11	18.7

Study 2: Percentage of vegetarian meals bought by diners

Table S17: College C, levels of vegetarian meal consumption during the study period (lunches autumn term 2017) and the term (lunches and dinners summer term 2017) used to calculate prior levels of vegetarian meal consumption.

		Summer term 2017	Autumn term 2017
All diners	Number of diners	**481**	**491**
Diners who bought 10 or more meals	Number of diners	**224**	**314**
	Omnivores, vegetarians and carnivores		
	Number of obligate vegetarians, (vegetarian =100%)	0	1
	Number of omnivores	194	283
	Number of obligate carnivores, (vegetarian =0%)	30	30
	Percentage of vegetarian meals bought by individual diners		
	Lower quartile	5.9%	6.3%
	Median	12.5%	14.7%
	Mean	19.8%	19.9%
	Upper quartile	27.0%	26.9%

Study 2: Data included in individual-level analyses

Table S18: College C, number of cafeteria visits, meals bought and diners in the individual-level data included in analyses. We used a binomial ("VegModel") variable, representing each cafeteria visit made by identifiable diners, to analyse the data: if one or more vegetarian meals were bought at one mealtime this was coded as 1, and 0 for one or more meat meals. If a diner bought a vegetarian meal(s) and a meat meal(s) at one meal time this was coded as NA and excluded from the analysis.

Data type	Data	Cafeteria visits	Meals bought	Diners
Aggregate data	Data from both guests and identifiable diners	NA	7712	NA
Individual-level data	All data	4565	5153	491
	Data with a prior-level of vegetarian meals consumption value	1661	1977	121
	Data with a VegModel variable	4358	4716	482
	Data included in analysis (values for prior-level of vegetarian meal consumption and VegModel variable)	1585	1718	121

Study 2: Best models for individual-level analyses

Table S19: College C, best model for likelihood of selecting a vegetarian meal. VegModelVariable~ (VegAvail *PriorVegConsumptionQuartile) +ObservedTotalOptionsAvailable+ TotalMealsSold+MeanTemp+Day+Week+(1|CardUser). AIC=1341.5, log-likelihood=-644.8. Conditions used to generate predictions: VegAvail=25, TotalMealsSold=150, TotalOptionsAvailable=4, MeanTemp=10, Day=Wed, Week=5, Vegetarian consumption quartiles weighted equally. Effect size calculated by taking the exponential of the model estimate.

Variable	Effect size	Effect size 95% CIs	p-value	Narrative	Example value	Likelihood of selecting a veg meal	Example value	Likelihood of selecting a veg meal
Veg Availability (%)	1.000	0.967, 1.034	0.983	Likelihood of selecting a vegetarian meal increased as vegetarian availability increased. The likelihood of the Most Vegetarian quartile selecting a vegetarian meal > MoreVeg > LessVeg > LeastVeg.	25	0.350	50	0.348
Quartile-MoreVeg	0.110	0.025, 0.493	0.004		25	0.101	50	0.173
Quartile-LessVeg	0.038	0.006, 0.236	<0.001		25	0.039	50	0.072
Quartile-LeastVeg	0.011	0.001, 0.086	<0.001		25	0.021	50	0.070
VegAvail:MoreVeg	1.026	0.989, 1.063	0.168	Only the Least Vegetarian quartile had a stronger response to increasing vegetarian availability than the MostVeg.	NA		NA	
VegAvail:LessVeg	1.027	0.983, 1.074	0.234		NA		NA	
VegAvail:LeastVeg	1.053	1.002, 1.106	0.041		NA		NA	
Total meals sold	1.016	1.002, 1.030	<0.001	Likelihood of selecting a vegetarian meal increased as more meals are sold.	100	0.036	200	0.159
Observed total options available	1.219	0.850, 1.749	0.273	Higher likelihood of selecting a vegetarian meal when there are more total options.	3	0.065	5	0.093
Mean temp	0.880	0.812, 0.955	0.002	Lower likelihood of selecting a vegetarian meal at higher ambient temperatures.	5°C	0.138	15°C	0.043
Veg NonVeg price differential	NA	NA	NA	Not included in best model.	£0.05	NA	£0.50	NA
Tuesday	2.109	1.252, 3.550	0.005	Tuesdays and Wednesdays had higher likelihood of selecting a vegetarian meal than Mondays. No significant difference in likelihood between Mondays, Thursdays and Fridays.	Mon	0.042	Tue	0.084
Wednesday	1.933	1.179, 3.171	0.010		-		Wed	0.078
Thursday	1.101	0.665, 1.822	0.710		-		Thu	0.046
Friday	0.743	0.423, 1.304	0.292		-		Fri	0.031
Week 2	1.165	0.290, 4.684	0.830	Lower likelihood of selecting a vegetarian meal in Week 9 than Week 1, no significant difference between Week 1 and other weeks.	Week 1	0.107	Week 2	0.122
Week 3	0.445	0.087, 2.267	0.229		-		Week 3	0.051
Week 4	1.061	0.299, 3.766	0.920		-		Week 4	0.113
Week 5	0.706	0.224, 2.230	0.541		-		Week 5	0.078
Week 6	0.567	0.161, 1.996	0.320		-		Week 6	0.064
Week 7	0.467	0.129, 1.689	0.200		-		Week 7	0.053
Week 8	0.811	0.240, 2.738	0.713		-		Week 8	0.088
Week 9	0.181	0.049, 0.673	0.008		-		Week 9	0.021
Week 10 (Christmas holidays)	0.868	0.246, 3.054	0.825		-		Week 10	0.094
Week 11 (Christmas holidays)	0.793	0.198, 3.178	0.736		-		Week 11	0.087

Study 2: Best models for total sales

Table S20: College C, best model for total sales. TotalMealsSold ~ VegAvailPercent + Week. AIC= 384.3, log-likelihood =-179.2 , Adjusted R^2 = 0.679. Conditions used to generate predictions: VegAvail=25; Week=4. Effect size calculated by adding the model estimate to the intercept (160) and dividing by the intercept.

Variable	Effect size	Effect size 95% CIs	p-value	Narrative	Example value	Predicted total sales	Example value	Predicted total sales
Veg Availability (%)	1.000	0.993, 1.004	0.942	Vegetarian availability had no effect on total meals sold.	25	188.0	50	188.8
Total options available	NA	NA	NA	Not included in best model.	NA		NA	
Mean temperature	NA	NA	NA	Not included in best model.	NA		NA	
Veg NonVeg price differential	NA	NA	NA	Not included in best model.	NA		NA	
Tuesday	NA	NA	NA	Not included in best model.	Mon		Tue	
Wednesday	NA	NA	NA		-		Wed	
Thursday	NA	NA	NA		-		Thu	
Friday	NA	NA	NA		-		Fri	
Week 2	1.022	0.679, 1.223	0.865	Weeks 3 had significantly higher, and Week 11 significantly lower, total sales than Week 1. Weeks 2, 3, 4, 5, 6, 7, 8, 9 and 10 did not have significantly different total sales from Week 1.	Week 1	160.9	Week 2	164.4
Week 3	1.325	1.082, 1.468	0.018				Week 3	212.9
Week 4	1.170	0.901, 1.327	0.164				Week 4	188.0
Week 5	1.069	0.779, 1.239	0.549				Week 5	171.9
Week 6	1.231	0.999, 1.367	0.051				Week 6	197.9
Week 7	1.165	0.891, 1.325	0.181				Week 7	187.2
Week 8	1.155	0.882, 1.315	0.202				Week 8	185.7
Week 9	1.106	0.828, 1.268	0.363				Week 9	177.8
Week 10 (Christmas holidays)	0.884	0.512, 1.102	0.340				Week 10	142.2
Week 11 (Christmas holidays)	0.743	0.324, 0.988	0.038				Week 11	119.7

Study 2: Best model for vegetarian sales at dinner

Table S21: College C, Best model for vegetarian sales at dinner, only including meals bought by diners who attended 1 or more lunchtimes during the autumn term. VegSales ~ ExperimentalCondition + MenuVegAvail + TotalMealsSold + MeanTemp + VegNonVegPriceDifferential+Day. AIC=424.4 , log-likelihood=-202.2 , McFadden's pseudo R^2 =0.246 . Conditions used to generate predictions: Experimental Condition=Control, VegAvail=25, TotalMealsSold=100, MeanTemp=10, VegNonVegPriceDifferential=0.2, Day=Wed. The total number of options served was not observed at dinnertimes, and therefore relative vegetarian availability was calculated from the listed menu options, however the actual options served may have differed. Effect size calculated by taking the exponential of the model estimate.

Variable	Effect size	Effect size 95% CIs	p-value	Narrative	Example value	Predicted veg sales (%)	Example value	Predicted veg sales (%)
Condition: Experimental week	0.953	0.795, 1.141	0.601	Vegetarian sales at dinners in experimental and control weeks were not significantly different.	Control	8.0	Experimental	7.6
Veg Availability (%) listed on menu	1.000	1.000, 1.000	<0.001	Vegetarian sales increased with the vegetarian availability listed on the menu.	25	8.0	50	15.7
Total meals sold	1.007	1.002, 1.011	0.005	Dinners with higher sales sold relatively more vegetarian options.	80	7.0	120	9.0
Total options available	NA	NA	NA	The menu always listed 4 options (although in reality sometimes 5 or 6 options were sometimes served).	NA		NA	
Mean temperature	1.048	1.026, 1.070	<0.001	Days with higher temperatures had higher vegetarian sales.	5°C	6.4	15°C	9.8
Veg NonVeg price differential	5.247	1.067, 26.072	0.042	Mealtimes with relatively cheaper vegetarian options had higher vegetarian sales.	£0.05	6.3	£0.50	12.4
Tuesday	1.248	0.978, 1.594	0.076	Fridays and Wednesdays had lower vegetarian sales than Mondays. Thursdays' vegetarian sales were higher than Mondays' and Tuesdays' were not significantly different..	Mon	11.3	Tue	13.7
Wednesday	0.682	0.493, 0.938	0.019		-		Wed	8.0
Thursday	1.364	1.037, 1.792	0.026		-		Thu	14.7
Friday	0.602	0.376, 0.958	0.033		-		Fri	7.1