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Students' Willingness to Pay for More Local, Organic, Non-GMO and General Food Options

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Abstract

As universities look to source "sustainable" products, it is critical to understand student demand and the economic feasibility of adding new sustainable products. Using an online survey in conjunction with a Tobit model we find that half of students in our sample are willing to pay more for increased local and organic food options with only a third willing to pay more for increased non-GMO options. The economic feasibility of adding new local, organic, and non-GMO options is questionable as charging students for their willingness to pay results in only a 1–2% gain in revenue which may not cover the cost of more options in on-campus dining halls.

Keywords: food to institution; genetically modified organism; Tobit model; university food sourcing

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Introduction

Local, organic and non-genetically modified organism (GMO) food products have significantly grown in popularity in recent years. To put the growth into perspective, non-GMO sales topped $550 billion worldwide with 36% of those sales occurring in the United States (Package Facts 2015). With respect to organic food, US food sales were around $35 billion in 2014, which is up about 350% over the last decade (Organic Trade Association 2015). As noted by Schweizer (2015), organic and non-GMO food sales have outpaced overall store sales at Whole Foods by 54%. Even with the growth of non-GMO and organic, local food sales have continually trended upward as well. A recent estimate for local food sales was $12 billion which is considerably higher than the $6.1 billion reported in 2012 (Low et al. 2015; USDA 2015).

Driving increased demand for local, organic, and non-GMO is the positive perceptions of local and organic by many consumers and the negative perception of GMO. Local production is defined by a majority of consumers as decreased miles to transport, while organic production is defined as produced with non-synthetic pesticides (Campbell, Mhlanga, and Lesschaeve 2013; Campbell et al. 2014). Furthermore, local is perceived as helping the local community, better quality, and being sustainable (Darby et al. 2008; Yue and Tong 2009; Onozaka, Nurse, and McFadden 2010; Campbell et al. 2015) with organic being perceived as better for the environment, safer and sustainable (Ritson and Oughton 2007; Essoussi and Zahaf 2008; Campbell et al. 2015). However, consumers often infer incorrect characteristics onto these labels, such as local is produced chemical free or organic is local (Ipsos Reid 2006; Campbell, Mhlanga, and Lesschaeve 2013; Campbell et al. 2014). With respect to GMOs, health concerns are a major reason why many consumers have a negative view of GMOs leading some consumers to seek non-GMO alternatives (Anderson, Wachenheim, and Lesch 2006).

From the initial beginnings of local and organic as meeting niche market demand, there have been efforts to expand foods *perceived* as sustainably produced into institutional settings. Numerous farm-to-institution (FTI) initiatives have emerged with the overarching goal of moving local food into hospitals, universities, and other large institutions (Buckley et al. 2013). For example, the governor of New York (Cuomo) is trying to increase the amount of New York grown products entering state institutions through the *Grown in New York* plan implemented in 2015. This plan includes a $2.5 million in financial incentives for schools to purchase locally grown products (Ritchie 2015). Other initiatives have been introduced such as the University of California-Berkeley's move to organic dining options and Kennesaw State working toward bringing more non-GMO and organic options to their dining halls (Greensfelder 2006; Young 2013).

With respect to universities, there is growing demand for perceived sustainable food options as can be seen by the influx of new purchasing initiatives for local, organic, and non-GMO foods, such as initiatives at Yale, Duke, Emory, and the University of Connecticut, just to name a few. Of particular note, the University of Toronto requires local and sustainable farm products to be used by its corporate caterers (Friedmann 2007). Benefits of these initiatives to universities are a connection to the local community, helping the local economy, and student education (Strohbehn and Gregoire 2005; Ng, Bednar, and Longley 2010). However, numerous barriers have been identified with FTI initiatives. A 2008 meta-analysis of the literature found that infrastructure, financial support for processing, and central distribution are key barriers to FTI retailing (Vogt and Kaiser 2008). Further, as noted by Heiss et al. (2014), infrastructure, relationships, and

pricing are important factors that can constrain FTI programs.With respect to university purchasing, availability, procurement, price, and adequacy are some of the main barriers (Ng, Bednar, and Longley 2010). Furthermore, understanding whether university students want more sustainable foods and are willing to pay for them is not well understood. Considering students are the major group that influences what sustainable practices a university food service implements (Chen, Arendt, and Gregoire 2010), it is essential to understand students views of potentially sustainable foods.

The objective of this study was to determine whether or not students at a large land grant university in the Northeast want more local, organic, and non-GMO food products and how much would they be willing to pay extra for more options. Furthermore, we utilized the willingness to pay (WTP) estimates to construct the amount of "extra" revenue that a university might obtain if charging students at varying WTP rates. Since production costs and extra costs were cited as some of the most important challenges by university foodservice administrators (Ng, Bednar, and Longley 2010), examining how universities might offset extra costs is essential. Based on our results, approximately half of the students surveyed are willing to pay extra for meal plans with more local and organic options. One-third are willing to pay more for non-GMO options. Further, we find that it is not clear whether charging the estimated WTP would be enough to cover the additional costs of providing more local, organic, and non-GMO options. Costs are, of course, not the only reason a university might opt to expand their food selections, but with constricting budgets (Reitz 2015) it is essential to understand how budgets may be impacted. Finally, we examine how student characteristics and on-campus purchasing behaviors impact student WTP.

Materials and Methods

The University of Connecticut was chosen for this study based on their promotion of sustainable food initiatives such as *Local Routes*. The dining services program *Local Routes* works to help educate the University of Connecticut community about the importance of choosing foods that will benefit the local economy, the environment, and New England farmers (University of Connecticut 2015b). Furthermore, the University of Connecticut was ranked in the top 10 of 360 universities worldwide for their "efforts towards sustainability and environmentally friendly university management." (UI GreenMetric 2014). Based on a number of factors (i.e. the University of Connecticut's interest in increasing sustainable food, the state of Connecticut's goal of increasing local food expenditures to 5% of total food expenditures by 2020, and Connecticut being the first state to pass a GMO labeling law (Reilly 2013; University of Connecticut Dining Services 2015a; Connecticut Department of Agriculture 2016)), the University of Connecticut appears to be a prime institution where students may be willing to pay extra on their meal plan for more local, organic, and non-GMO options.

During the fall 2014, an online survey was distributed to every University of Connecticut undergraduate student via the University of Connecticut's daily student email system, *UConn Daily Digest.* Before distributing the survey, it was approved by the university's Institutional Review Board.[1] A total of 288 students completed the online survey. Students participating in the survey were entered into a drawing for a gift card. This represents 1.6% of the total undergraduate population (18,395) at the University of Connecticut's main campus in Storrs,

[1] Informed consent was obtained from all individual participants included in the study.

Connecticut. The survey sample consisted of 20% freshman, 26% sophomores, 26% juniors and 28% seniors (Table 1). Of the 78% of students living on campus, 72% reported having purchased on-campus meal plans. The survey focused on students with meal plans during the fall of 2014 given that students are the primary consumers of on-campus meals. As can be seen in Table 1, the demographics and purchasing behaviors of students without a meal plan are different than sampled students with a meal plan. Notably, students not utilizing a meal plan were more likely to be seniors, living off campus, and consuming less meals on-campus. By examining only meal plan users, recommendations can be enacted for students that would most benefit from a policy change, such as purchasing more local or organic products if desired.

Table 1. Characteristics of the sample by meal plan use.

	All Sample	**Students without a Meal Plan**	**Students with a Meal Plan**
	Mean	Mean	Mean
Class (%)			
Freshman	0.20	0.02	0.27
Sophomore	0.26	0.12	0.32
Junior	0.26	0.16	0.30
Senior	0.28	0.71	0.11
Live on campus (%)	0.78	0.37	0.95
Have a job (full/part-time) (%)	0.63	0.71	0.60
Meals on-campus (%)			
Breakfast	0.46	0.18	0.57
Lunch	0.77	0.67	0.81
Dinner	0.66	0.39	0.78
Morning snack	0.11	0.14	0.09
Afternoon snack	0.27	0.27	0.27
Evening snack	0.16	0.12	0.17
Meal plan (%)			
Ultimate (highest priced)	0.19	0.00	0.29
Value (medium-high priced)	0.29	0.00	0.44
Custom (low-medium priced)	0.12	0.00	0.18
Other (lowest priced – not a traditional plan)	0.06	0.00	0.09
Types of food purchased on-campus per week			
Fruit/vegetable	5.85	3.38	6.84
Red meat	4.24	1.43	5.36
Dairy products	5.49	3.09	6.45
Fish/seafood	3.36	1.33	4.17
Chicken	5.46	2.84	6.50
Grain products	5.60	3.92	6.28
Other products	2.24	1.75	2.44

The survey consisted of questions about student demographics, knowledge of, and WTP for more local, non-GMO, and organic food. WTP was estimated by asking students how much more would they be willing to pay on their current meal plan for more of a particular type of food option (i.e., local, organic, non-GMO, more options in general). Even in cases where parents bear the cost of paying for meal plans, students play a critical role in deciding whether eating on campus is worthwhile and are central to the decision-making process. If some students are not paying for their own meals, then we suspect that the WTP results are most likely overstated due to hypothetical bias. Furthermore, given the nature of the survey was hypothetical; the WTP values are most likely an overestimation of the true premium (Lusk and Schroeder 2004). However, the WTP estimates allow us to put an upper bound on the amount of money the university could expect to extract if they increased meal plan prices at a rate consistent with that desired by students. We also asked in-depth questions about which foods (e.g., fruit, vegetables, meat, etc.) the student would like to see in each category (i.e., local, non-GMO, and organic) and their general food purchasing habits on-campus.

With respect to the WTP question, responding students were asked to indicate on a scale from \$0-\$100 how much they would be willing to pay on top of their current meal plan price for more local, organic, non-GMO, and more options in general. Zero dollars was a natural lower bound as some students may not want to pay any extra for one or more of the options being evaluated. The \$100 upper bound was set to limit the values to a reasonable dollar amount that the university might be willing to consider raising the meal plan price. Approximately 2% of the sample indicated they would be willing to pay \$100 or more. In order to account for censoring within the data the two-limit Tobit model developed by Rossett and Nelson (1975) was utilized. The model can be represented as:

$$(1)\ y^{*}_{i} = \beta' x_i + \varepsilon_i \quad (i = 1, \ldots, n)$$

$$y_i = \begin{cases} 0 & if\ y_i^* \le 0 \\ y_i^* & if\ 0 < y_i^* < 100 \\ 100 & if\ y_i^* \ge 100 \end{cases} \quad (i = 1, \ldots, n)$$

where y_i* is a latent variable that is not observed for values below \$0 and above \$100, x is a matrix of explanatory variables, β is a vector of coefficients, and ε is an independently and normally distributed error term with zero mean and variance σ^2. As noted by Davidson and McKinnon 1993, 541), we can maximize the likelihood function in equation two to obtain coefficient estimates.

$$(2)\ \sum_{y_t^L \le y_t^* \le y_t^U} log\left(\frac{1}{\sigma}\phi\left(\frac{1}{\sigma}\left(y_t - x_t\beta\right)\right)\right) + \sum_{y_t^* < y_t^L} log\left(\phi\left(\frac{1}{\sigma}\left(y_t^L - x_t\beta\right)\right)\right) + \sum_{y_t^* > y_t^U} log\left(\phi\left(-\frac{1}{\sigma}\left(y_t^U - x_t\beta\right)\right)\right)$$

However, the estimated β coefficients are not interpretable as the marginal effect of a unit change in an independent variable (Gould, Saupe, and Klemme 1989). Using an extension of the McDonald and Moffitt decomposition to a two-limit situation we obtain the unconditional and conditional marginal effects as well as the corresponding probabilities of having a positive WTP (McDonald and Moffitt 1980). The unconditional effect of WTP accounts for both students that would not pay \$0 for extra options as well as those willing to pay some positive value, including the few students willing to pay more than \$100. The conditional marginal effects only account

for those students willing to pay some positive value between the bounds (i.e., $0 and $100). The probabilities indicate how likely a student would be to have WTP between the bounds.

Results and Discussion

Viewing WTP on a broad spectrum, we found that approximately half of meal plan participants in the survey were willing to pay more on their meal plan fees for more organic and local options with only 35% willing to pay more for non-GMO options (Table 2). A majority of students (64%) were willing to pay extra for more food options in general. With respect to the average WTP for more organic products, we find that on average a meal plan participant would add $20.69 to their meal plan, while students would pay $17.14 extra for more local options. However, the average WTP for students who noted they would pay extra for more organic and local options (i.e., excluding those with a WTP equal to zero) was $41.74 and $34.57, respectively. Amongst the WTP estimates for organic, local, and non-GMO, more organic options produced the largest premium which could be due to reacting to the perceived higher price of organic products within the marketplace. Of note, the meal plans for a semester range in price from around $2600–$2900 so students would only be willing to add between 1–2% onto their meal plan for organic, local, non-GMO, and more food options.

Table 2. Willingness to pay estimates for more organic, local, non-GMO, and general food options.

	All Students with Meal Plan		**Only Students with Meal Plans Willing to Pay More**		**Percent of Students with a Meal Plan that are WTP More**
Options	Mean	Std. Dev.	Mean	Std. Dev.	Percent
Organic	$20.69	$28.14	$41.74	$26.78	50%
Local	$17.14	$24.28	$34.57	$24.22	50%
Non-GMO	$11.58	$20.80	$33.05	$22.96	35%
More Options	$31.00	$32.80	$47.95	$29.13	64%

The WTP findings evoke interesting questions as to whether there is enough demand for and availability of local, organic, and non-GMO, as well as who should be paying for the increases? From a university perspective charging extra for only those students willing to pay more would be ideal, but this represents only half of meal plan users and would be hard to implement. So the half not charged extra could easily free ride on the payments of those choosing to pay the extra fee. Thereby, if the university is going to increase meal plan prices, charging all meal plan users at the average WTP across all meal plan users is the most viable option. However, this would only generate around $275,000 in additional revenue for the university to purchase more organic food and only $227,000 for more local food options (Table 3). This equates to 1–2% increase in the overall food budget, $17,771,697, in 2014 (University of Connecticut 2015c). Given the potential cost increases associated with sourcing new organic and local options it is not clear whether these projected revenues would cover the additional costs, especially given these additional revenues are most likely at the upper bound of what could be expected due to potentially hypothetical biases from the survey or sample. Compounding the issue would be the ability of the university to add local, organic, non-GMO foods at an economically feasible level. Warner et al. (2012) noted that the state of Connecticut has limited local food production.

Increased demand from the University of Connecticut could potentially drive up prices in the short-term further making the supply of local products more difficult.

Table 3. Potential money that could be raised by charging higher meal plan prices.

	All students pay extra [a]	Only meal plan participants [b]	Only those wanting to pay more [c]
Organic	$380,635	$274,057	$552,840
Local	$315,231	$226,966	$457,845
Non-GMO	$213,036	$153,386	$437,711
More Options	$570,245	$410,576	$635,025

Note. [a] Assuming 18,000 students each paying the average willingness to pay of all meal plan participants. This number is just for comparison as to earn this amount a non-meal plan fee would have to be added to each student.
[b] Assuming 18,000 students with 72% participating in a meal plan.
[c] Assuming 18,000 students with 72% participating in a meal plan and the percentage willing to pay more coming from Table 1.

Assuming the university pursued more options, fruits and vegetables are consistently the most popular food option students would want (Table 4). Using a 5-point likert scale we see that fruits and vegetables score between 4.4–4.6 which corresponds to students wanting to see a lot more of these products. However, other products such as meats, dairy, and grain are 3.5–4 range which corresponds to students wanting no change to a few more options. Based on these findings the university should focus on fruits and vegetables if new food options are added.

Table 4. Types of products preferred by students on a meal plan that would pay more for organic, local, non-GMO, or more food options in general.

Product	Organic	Local	Non-GMO	More Options
Fruit and Vegetables	4.6	4.6	4.4	4.4
Red Meat	3.6	3.7	3.7	3.7
Dairy Products	3.7	3.9	4.1	3.7
Grain Products	3.8	3.7	4.1	3.9
Fish/Seafood	3.5	3.6	3.6	3.5
Chicken	3.8	4.0	4.1	4.0
Other	3.5	3.4	3.3	3.5

Note. [a] Scale is between 1 = a lot less and 5 = a lot more.

Tobit Model Results

The Tobit model results are provided in Table A1 (see Appendix). Given these coefficients are not easily interpretable we do not discuss them in the paper. Further, for brevity we provide, but do not discuss the unconditional marginal effects (Table A2, see Appendix) or probabilities (Table A3, see Appendix). The focus for this paper is on the conditional marginal effects (Table 5).

Table 5. Mean conditional marginal effects of each explanatory variable for organic, local, non-GMO, and more options.

	Organic		Local		Non-GMO		More Options	
Variables [a]	Coef.	P-value	Coef.	P-value	Coef.	P-value	Coef.	P-value
Class								
Sophomore	-$6.52	0.097	$0.88	0.814	$5.68	0.131	-$1.68	0.689
Junior	**-$8.07**	0.069	$1.61	0.694	$2.03	0.614	-$3.00	0.507
Senior	**-$19.06**	0.038	-$7.36	0.294	-$2.06	0.731	-$4.19	0.496
Live on campus	$2.52	0.818	**-$22.45**	0.066	$6.96	0.409	-$0.69	0.951
Have a job (full/part-time)	$2.74	0.406	-$0.30	0.923	-$0.86	0.768	-$2.60	0.432
Meals on-campus								
Breakfast	$1.01	0.776	$3.87	0.252	$4.38	0.168	$2.70	0.443
Lunch	$2.30	0.578	$1.88	0.624	-$2.17	0.549	-$1.75	0.657
Dinner	**$9.12**	0.064	$2.74	0.510	$3.53	0.367	**$8.17**	0.075
Morning snack	-$1.13	0.827	-$9.24	0.121	-$4.33	0.401	$7.15	0.173
Afternoon snack	$1.85	0.597	$2.69	0.435	$3.85	0.214	$1.67	0.657
Evening snack	**$9.47**	0.023	**$9.65**	0.016	$5.41	0.146	$2.19	0.612
Meal plan								
Value	-$2.54	0.471	$2.64	0.438	-$0.89	0.775	**$6.53**	0.079
Custom	-$3.15	0.484	**$9.72**	0.023	-$2.58	0.530	-$2.24	0.635
Other	$14.49	0.136	$4.32	0.701	**$24.08**	0.002	$6.28	0.533
Types of food purchased on-campus per week								
Fruit/vegetable	-$0.75	0.200	**-$1.21**	0.020	-$0.52	0.277	-$0.03	0.952
Red meat	-$0.23	0.473	-$0.25	0.405	-$0.06	0.823	$0.10	0.775
Dairy products	**$0.83**	0.023	**$0.65**	0.057	**$0.69**	0.040	$0.27	0.480
Fish	$0.04	0.903	-$0.43	0.169	-$0.36	0.230	-$0.19	0.553
Chicken	$0.00	0.995	**$0.56**	0.089	$0.02	0.951	$0.44	0.213
Grain products	-$0.42	0.438	-$0.03	0.954	-$0.38	0.411	$0.08	0.880
Other products	$1.08	0.136	-$0.19	0.770	$0.32	0.581	$1.03	0.131
Constant	-$8.68	0.499	$9.53	0.474	**-$17.66**	0.090	-$9.50	0.480

Note. [a] Base categories are: class = freshman, meal plan = Ultimate.
Bolding indicates significance at the 0.1 level or less.

Conditional Marginal Effects

Organic. With respect to the conditional marginal effects, we see that juniors and seniors are willing to pay less than freshman and sophomores for more organic products within on-campus dining halls (Table 5). However, students indicating they eat dinner and evening snacks on-campus are willing to pay around $9 extra on their meal plan for more organic options. Of interest, even though organic fruits and vegetables were at the top of the list of products students wanted more of, compared to other types of food products, students that ate more fruits and vegetables from an on-campus dining hall were not willing to pay more on their meal plans. In

comparison, students that consumed more dairy products were willing to pay $0.83 more per transaction above the mean.

Local. Students living on-campus with a meal plan would pay on average $22.45 less on their meal plan for more local options (Table 5). This may indicate that students on-campus feel there are enough or too many local options currently available and would like a lower meal plan price. With respect to type of meal plan, students participating in the custom plan had a $9.72 higher WTP for more local food products in dining halls compared to students with other meal plans. This may be due to the fact that custom meal plans are generally cheaper than the other traditional meal plans; thereby, giving students room in their budget to pay for more local options. Further, students that eat an evening snack would pay $9.65 more on their meal plan for more options. In contrast to the organic model, students eating major meals, such as dinner, at an on-campus dining hall did not want to pay more for more local options.

Examining the types of foods purchased, students would pay more for dairy and chicken produced locally (Table 5). For instance, students would pay $0.65 and $0.56 more on their meal plan for each time they purchased dairy and chicken per week above the mean at an on-campus dining hall. Given dairy is an important agricultural industry in Connecticut (Lopez, Plesha, and Campbell 2015), creating a linkage to Connecticut based dairies could provide a local source of demand for dairy products. However, students eating more on-campus were willing to pay less (-$1.21) for local fruits and vegetables. This finding may indicate that students feel that local sourcing of fruits and vegetables would be less costly, so there should be a reduction in their meal plan price.

GMO. Considering the media attention that has been devoted to GMO labeling over the past couple of years, the low number of students willing to pay for more non-GMO foods is interesting (Table 2). With respect to the Tobit model conditional marginal effects, we find that students on an "other" type of meal plan (e.g., community plan) would pay $24.08 more for more non-GMO products. The plans making-up the other category are the cheapest plans in initial cost so students may feel they can afford extra to get food they want given the low initial cost or may perceive the current offerings not in-line with their needs. Further, we see that students would be willing to pay $0.69 for each additional dairy product purchased per week from an on-campus dining hall. Noticeably, we again find that even though fruits and vegetables are the types of foods wanted, students eating more fruits and vegetables from on-campus dining per week were not willing to pay more for them.

More Food Options. Overwhelmingly, students want more food options in general as can be seen by the 64% of students that would be willing to pay more (Table 2). Students that would pay extra for more options are students eating dinner and students on a value plan. Value plan participants would pay an extra $6.53 or 0.24% on their plan price. Students eating dinner on-campus would pay an extra $8.17 on their meal plan for more food options.

Implications

This study examined student WTP for various sustainably perceived production/marketing practices at a university that is considered progressive in its sustainability initiatives. Based on

this study's findings there is not a clear consensus that adding more local, organic, or non-GMO options is economically viable. From a sustainability perspective, there seems to be a demand for organic and local options as half of survey respondents with meal plans indicated they wanted more local and organic options. However, realistically the university could expect around $250,000 in additional revenue (as an upper bound) if it charged a higher price that was in-line with our WTP estimates. Considering the size and scope of adding more local and organic options, such as sourcing, transporting, certifying, etc., the economic viability is questionable. As with any enterprise, non-economic motives (e.g., community relationships and perception) must be taken into account; however, from strictly a cost perspective, adding more local, organic, and/or non-GMO options may not be feasible given constrained budgets at the state and university level.

This paper does provide some interesting insights that can be used by other institutions looking at adding more "sustainable" food options. Notably, Connecticut has progressive sustainability initiatives which for institutions that have focused less on these initiatives the economic viability of adding more organic and local options may be more of an issue. Further, how to pay for more food options will be an issue as not all students want to pay more. Should a university raise meal plan prices to placate half their student body? This paper does not attempt to answer the latter question, but rather offers insights into how students at a sustainably minded university value more perceived sustainable food options.

Conclusion

Local, organic and non-GMO food products have grown significantly in popularity during the past decade. As the popularity and positive perceptions of these options have increased, local governments have expanded their efforts to increase the amount and types of these food products for purchase and consumption. Regarding local food, FTI initiatives have emerged, putting local food in the spotlight for many large state institutions. This type of movement is clear in states like Connecticut, where the Governor's Council for Agricultural Development is pushing for increased expenditures on local food products. Given that the University of Connecticut's dining services is the state's largest local produce consumer (University of Connecticut 2016a), initiatives that increase consumption on campus could be important for the state. However, with the potential higher costs of local foods, it's essential to understand if those impacted by these types of policies actually value the products.

Key findings from the population of students sampled at the University of Connecticut include:

- WTP for more organic food options decreased as class standing (freshman to senior) went up
- Students who ate dairy products have a higher WTP for organic, local and non-GMO options
- Students who eat on-campus more often had a higher WTP for more food options
- Approximately half of the meal plan participants would pay more for organic and local foods, while only about one-third would pay more for more non-GMO foods

Furthermore, the economic viability of adding more organic, local, and non-GMO options needs to be further examined to determine if making these investments are viable from a cost perspective. Future research should examine how students at other institutions with varying levels of sustainability initiatives would respond to increasing organic, local, and non-GMO food options.

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Appendix

Table A1. Tobit regression results for organic, local, non-GMO, and more options.

	Organic		Local		Non-GMO		More Options	
Variables [a]	Coef.	P-value	Coef.	P-value	Coef.	P-value	Coef.	P-value
Class								
Sophomore	**-$25.55**	0.090	$2.84	0.815	$21.76	0.151	-$6.10	0.689
Junior	**-$32.12**	0.059	$5.12	0.698	$7.97	0.621	-$10.93	0.505
Senior	**-$101.50**	0.005	-$27.27	0.231	-$8.57	0.721	-$15.55	0.486
Live on campus	$9.88	0.812	-$56.74	0.154	$33.06	0.329	-$2.47	0.951
Have a job (full/part-time)	$10.47	0.404	-$0.98	0.923	-$3.44	0.770	-$9.36	0.435
Meals on-campus								
Breakfast	$3.83	0.776	$12.64	0.249	$17.77	0.165	$9.80	0.443
Lunch	$8.91	0.572	$6.20	0.617	-$8.42	0.562	-$6.27	0.66
Dinner	**$37.84**	0.046	$9.15	0.497	$14.85	0.345	**$30.78**	0.067
Morning snack	-$4.36	0.825	**-$35.93**	0.065	-$18.97	0.360	$25.06	0.189
Afternoon snack	$6.94	0.602	$8.47	0.448	$14.80	0.235	$5.99	0.659
Evening snack	**$33.38**	0.038	**$27.92**	0.033	$20.04	0.181	$7.85	0.616
Meal plan								
Value	-$9.67	0.471	$8.47	0.443	-$3.58	0.775	**$23.51**	0.083
Custom	-$12.32	0.472	**$28.18**	0.044	-$10.73	0.514	-$8.16	0.633
Other	$48.72	0.189	$13.03	0.720	**$72.26**	0.024	$22.06	0.546
Types of food purchased on-campus per week								
Fruit/vegetable	-$2.83	0.203	**-$3.91**	0.023	-$2.09	0.280	-$0.12	0.952
Red meat	-$0.89	0.474	-$0.82	0.407	-$0.26	0.824	$0.35	0.776
Dairy products	**$3.15**	0.025	**$2.11**	0.060	**$2.74**	0.043	$0.97	0.482
Fish/seafood	$0.15	0.903	-$1.40	0.172	-$1.42	0.233	-$0.69	0.555
Chicken	-$0.01	0.995	**$1.79**	0.092	$0.07	0.952	$1.60	0.216
Grain products	-$1.59	0.439	-$0.09	0.954	-$1.51	0.413	$0.30	0.880
Other products	$4.09	0.140	-$0.63	0.770	$1.29	0.583	$3.71	0.134
Constant	-$32.89	0.501	$30.72	0.475	**-$70.58**	0.093	-$34.31	0.482
Log likelihood	-305.87		-298.88		-239.33		-376.43	
Pseudo R2	6%		6%		5%		3%	
Lower Censored	52%		54%		66%		38%	
Upper Censored	4%		2%		0%		7%	

Note. [a] Base categories are: class = freshman, meal plan = Ultimate.
Bolding indicates significance at the 0.1 level or less.

Table A2. Mean unconditional marginal effects of each explanatory variable for organic, local, non-GMO, and more options.

	Organic		**Local**		**Non-GMO**		**More Options**	
Variables [a]	Coef.	P-value	Coef.	P-value	Coef.	P-value	Coef.	P-value
Class								
Sophomore	-$10.49	0.112	$1.30	0.813	$7.65	0.111	-$3.59	0.691
Junior	**-$12.73**	0.088	$2.37	0.691	$2.65	0.606	-$6.35	0.512
Senior	-$20.60	0.183	-$9.46	0.355	-$2.49	0.744	-$8.66	0.511
Live on campus	$4.04	0.826	**-$37.70**	0.035	$7.00	0.515	-$1.48	0.951
Have a job (full/part time)	$4.54	0.412	-$0.44	0.923	-$1.11	0.767	-$5.61	0.429
Meals on-campus								
Breakfast	$1.69	0.777	$5.59	0.257	$5.48	0.176	$5.77	0.445
Lunch	$3.76	0.589	$2.69	0.631	-$2.88	0.534	-$3.78	0.654
Dinner	$13.58	0.101	$3.89	0.522	$4.21	0.399	**$16.52**	0.093
Morning snack	-$1.87	0.830	-$11.31	0.193	-$4.89	0.457	$15.97	0.155
Afternoon snack	$3.16	0.591	$4.00	0.427	$5.16	0.192	$3.60	0.655
Evening snack	**$17.51**	0.013	**$15.17**	0.009	$7.57	0.110	$4.76	0.607
Meal plan								
Value	-$4.24	0.474	$3.88	0.436	-$1.13	0.776	**$14.05**	0.077
Custom	-$5.08	0.502	**$15.26**	0.015	-$3.12	0.551	-$4.72	0.640
Other	**$28.31**	0.083	$6.61	0.687	**$40.91**	0.000	$13.99	0.517
Types of food purchased on-campus per week								
Fruit/vegetable	-$1.26	0.200	**-$1.77**	0.020	-$0.67	0.277		0.952
Red meat	-$0.39	0.473	-$0.37	0.405	-$0.08	0.823		0.775
Dairy products	**$1.39**	0.023	**$0.95**	0.057	**$0.88**	0.040		0.480
Fish	$0.07	0.903	-$0.63	0.169	-$0.45	0.230		0.553
Chicken	$0.00	0.995	**$0.81**	0.089	$0.02	0.951		0.213
Grain products	-$0.70	0.438	-$0.04	0.954	-$0.48	0.411		0.880
Other products	$1.82	0.136	-$0.28	0.770	$0.41	0.581		0.131
Constant	-$14.59	0.499	$13.89	0.474	**-$22.52**	0.090		0.480

Note. [a] Base categories are: class = freshman, meal plan = Ultimate.
Bolding indicates significance at the 0.1 level or less.

Table A3. Mean probability change associated with not being censored for each explanatory variable by organic, local, non-GMO, and more options.

	Organic		Local		Non-GMO		More Options	
Variables [a]	Coef.	P-value	Coef.	P-value	Coef.	P-value	Coef.	P-value
Class								
Sophomore	**-0.198**	0.092	0.029	0.815	0.191	0.139	-0.034	0.682
Junior	**-0.246**	0.064	0.052	0.697	0.069	0.616	-0.062	0.485
Senior	**-0.505**	0.066	-0.257	0.266	-0.071	0.731	-0.095	0.434
Live on campus	0.078	0.812	-0.396	0.327	0.226	0.435	-0.013	0.952
Have a job (full/part-time)	0.082	0.402	-0.010	0.923	-0.030	0.768	-0.050	0.446
Meals on-campus								
Breakfast	0.030	0.776	0.129	0.250	0.149	0.171	0.054	0.435
Lunch	0.070	0.570	0.063	0.618	-0.074	0.552	-0.033	0.674
Dinner	**0.282**	0.055	0.093	0.500	0.121	0.369	**0.191**	0.034
Morning snack	-0.034	0.824	-0.322	0.102	-0.147	0.407	0.098	0.342
Afternoon snack	0.054	0.603	0.087	0.447	0.130	0.221	0.032	0.669
Evening snack	**0.240**	0.054	**0.272**	0.040	0.180	0.159	0.040	0.637
Meal plan	-0.076	0.470	0.087	0.442	-0.031	0.775	**0.122**	0.095
Value								
Custom	-0.097	0.472	**0.274**	0.053	-0.088	0.530	-0.047	0.613
Other	0.295	0.309	0.132	0.722	**0.508**	0.059	0.090	0.649
Types of food purchased on-campus per week								
Fruit/vegetable	0.022	0.200	**0.040**	0.020	0.018	0.277	0.001	0.952
Red meat	0.007	0.473	0.008	0.405	0.002	0.823	-0.002	0.775
Dairy products	**-0.025**	0.023	**-0.022**	0.057	**-0.024**	0.040	-0.005	0.480
Fish	-0.001	0.903	0.014	0.169	0.012	0.230	0.004	0.553
Chicken	0.000	0.995	**-0.018**	0.089	-0.001	0.951	-0.009	0.213
Grain products	0.013	0.438	0.001	0.954	0.013	0.411	-0.002	0.880
Other products	-0.032	0.136	0.006	0.770	-0.011	0.581	-0.020	0.131
Constant	0.259	0.499	-0.315	0.474	**0.606**	0.090	0.187	0.480

Note. [a] Base categories are: class = freshman, meal plan = Ultimate.
Bolding indicates significance at the 0.1 level or less.