

UBC Social Ecological Economic Development Studies (SEEDS) Sustainability Program
Student Research Report

Plant-based Offerings at UBC Food Services Outlets

Nic Bertoni, Sarah Bond, Aubrey Doherty, Noni Nabors, and Madeleine Wilson

University of British Columbia

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I Executive Summary The environmental and health benefits of a global transition to a diet higher in plant-based foods are increasingly important in the context of intensifying climate change (Soret et al., 2014) and the growing economic and social burdens of diet-related disease (Reijnders and Soret, 2003; Turner-McGrievy and Harris, 2014). Plant-based diets are associated with a 25% reduction in greenhouse gas equivalents (GHGe) as compared to diets including meat (Soret et al., 2014) and emit, on average, 17 kg GHGe per kg protein produced compared to livestock production which can emit up to 750 kg GHGe per kg protein produced (Gohar and Shine, 2007; Nijdam, Room and Westhoek, 2012). University of British Columbia Food Services (UBC FS) caters events and supplies food to over 30 food retail outlets at the UBC Vancouver campus. As such, UBC FS has a large reach across the UBC Vancouver campus and influences the consumption habits of the university community. UBC FS recognizes the benefits of eating a plant-based diet and aims to increase plant-based offerings at their food outlets (David Speight, personal communication, Jan 2017). This vision aligns with the UBC Action Framework for a Nutritionally Sound Campus (2017) and UBC's Climate Action Plan (2011). The goal of this project was to support UBC FS in increasing the variety and quantity of plant-based offerings. We analyzed sales data from 10 UBC FS outlets to determine the percentage of earnings and offerings coming from plant-based food. We conducted customer surveys to understand customers' preferences regarding plant-based offerings at The Loop café and Open Kitchen dining hall. We found that plant-based offerings comprise about 50% of the menu items and contribute between 25-50% of net sales at Place Vanier and Totem Park Residence dining halls. At Open Kitchen, 41% of offerings are plant-based and represent 34% of

net sales. Survey results from Open Kitchen indicate an unmet demand for variety in plant-based offerings, both in ingredients and in types of meals. The Loop Cafe has a high percentage of plant-based offerings and sales, both over 25%, relative to other UBC FS restaurants and cafes. November 2016 sales data and survey results from The Loop show no unmet demand for plant-based offerings. However, survey results indicate that customers desire more variety within current plant-based offerings. Sage Bistro has the lowest percentage of plant-based offerings of the 10 UBC FS outlets, at 10% of the menu. However, sales of plant-based offerings increased when more plant-based menu items were offered at Sage Bistro, indicating unmet demand for plant-based offerings at this outlet. Based on these results, we recommend the following: 1) for UBC FS to increase variety within plant-based offerings, both of ingredients and types of dishes, 2) for UBC FS to increase the number of plant-based offerings at Sage Bistro, 3) for SEEDS to investigate Place Vanier and Totem Residence Dining Halls' strengths in plant-based sales, 4) for SEEDS to analyze sales data at Open Kitchen again to obtain additional months of data, and 5) for SEEDS to investigate undiscovered motivations behind plant based consumption in non-plant-based consumers.

II Introduction

The increase in the popularity of “Meatless Mondays” and in the percentage of people considering themselves “flexitarians” (vegetarians who occasionally consume meat) demonstrates a growing awareness of environmental and health benefits of reducing meat intake (Parseghian, 2016). Millennials represent the largest proportion of vegetarians, at 35% of their demographic, however vegetarianism is prevalent at all ages (Parseghian, 2016). Plant-based diets are correlated with numerous health benefits (Craig and Mendels, 2009, Fraser, 2009; Tukker et al., 2011; Takaoka & Kawakomi, 2013, Wellbery, 2016). Additionally crop production produces relatively low levels of greenhouse gas emissions as compared to livestock production (Scarborough et al., 2014; Reijnders and Soret, 2003; Nijdam, Rood, and Westhoek, 2003). These are attractive reasons to promote and support plant-based diets.

Livestock production, such as raising poultry, beef, and pork, emits more greenhouse gases (GHGs) than any other sector of the global economy (Emel and Neo, 2015). GHG emissions per kilogram of meat protein, particularly of red meats, are higher than emissions per kilogram of plant-based protein, with plant-based diets being associated with a 25% reduction in greenhouse gas equivalents (GHGs) compared to non-plant-based diets (Soret et al., 2014). Furthermore, production of plant protein requires less land area than production of an equivalent quantity of animal protein (Soret et al., 2014; Nijdam, Rood, and Westhoek, 2012). Individuals can easily substitute some of their meat consumption with plant-based meals to lessen their environmental impact (Tukker et al., 2011).

The University of British Columbia Food Services (UBC FS) is a self-funded, ancillary department at the University of British Columbia (UBC) (UBC Food services, n.d.), responsible for managing and operating over 30 separate food outlets on the Vancouver campus including residence dining halls, restaurants, cafes, and food trucks (David Speight, personal communication, Jan 2017). UBC FS has a wide reach across the UBC Vancouver campus and can influence the eating habits of the campus' population.

This project, which aims to increase plant-based offerings at UBC, aligns with three sustainability initiatives at UBC. Firstly, it complies with the "UBC Sustainable Campus Food Guide," which recognizes the need to maintain the integrity and health of ecosystems in food production and the need for increased awareness and engagement with customers about the impacts of food production (Baker-French et al., 2013). Secondly, it aligns with UBC's Climate Action Plan 2020 which pledges to reduce UBC's GHGs by 100% by 2050 relative to 2007 levels (UBC CAP Report, 2011). This will be achieved, in part, by increasing UBC FS offerings that represent eating "lower on the food chain" and promoting such behaviours within the UBC Community (UBC CAP Report, 2011). Thirdly, UBC is committed to meeting the diverse needs of a vibrant and sustainable community (Sustainability, 2012). In "Place and Promise: The UBC Plan", UBC aims to improve campus food offerings in order to better meet the needs of the community, which can be partially achieved by improving plant-based offerings to satisfy community members (UBC, 2012). By increasing the variety and quantity of plant-based offerings, without eliminating meat offerings, UBC FS will better meet the objective of the UBC Plan while satisfying all customers.

Plant-based foods are composed of fruits, vegetables, grains, seeds, nuts and legumes. The demand for plant-based offerings among UBC FS customers and their opinions about existing offerings must be understood to determine UBC FS locations around campus that are most appropriate for increases in plant-based offerings. Therefore the objectives of this project were to (1) analyze sales data to determine the percentage of plant-based offerings sold at 10 different UBC FS outlets and (2) survey customers at two of these outlets to determine their satisfaction levels and preferences regarding plant-based offerings.

III Methodology

I) Conduct a review of literature

We performed research using Google Scholar and UBC Summons. We used keywords such as: effect of meat on health; effect of meat production on environment; effect of vegetables on health; and effect of vegetable production on environment.

II) Analyze sales data from 10 UBC FS outlets to assess the portion of sales comprised by plant-based offerings

UBC FS Executive Chef David Speight selected 10 UBC FS outlets for the purpose of this project. The outlets chosen were three dining halls (Open Kitchen, Totem Park, Place Vanier), two restaurants (Sage Bistro, Point Grill), three cafes (Perugia, Ike's Cafe, Loop Café), and two food trucks (Hungry Nomad, and It's About Thai). David Speight provided sales data and menu for each outlet for the months of March and November 2015 and 2016. Sales data were limited for It's About Thai (November 2015 and November 2016) and Open Kitchen (November 2016) since these did not operate

in the other months of the study. Menu data was unavailable for Ike's and Perugia; and only partially available (i.e. missing prices or certain months) for all other outlets in the study. Sales data were analyzed in Microsoft Excel and Google Sheets, focusing specifically on the net quantity and net dollar sales. For our analysis, we selected meal items which we divided in four categories: entrees, sandwiches, soups, and salads. We also considered vegetable side dishes offered at residence halls as part of the entree category. We did not consider any other product sold at these outlets, such as beverages, fried sides, single pieces of fruit, health bars, or desserts. If an item was ambiguous either in the sales data or menus, such as a non-descript "sandwich + number of fillings", it was not counted. Soups were only included in the data analysis at The Loop, as soups at this outlet were labeled as vegetarian or containing meat. All other outlets did not clearly label the soup contents, so they could not be used for analysis. We deleted the non-meal items from the sales data to obtain total sales and total number of items sold for food items in each meal item category.

III) Design short surveys for UBC Food Services customers

David Speight expressed interest in surveying customers at one established dining hall, Open Kitchen, and one café, The Loop. The Loop Cafe has the highest plant-based net sales of any non-residence hall as well as a reputation for being environmentally friendly. Open Kitchen is the site of a new vegetarian station which sells exclusively plant-based meals. These two outlets are also important to UBC FS for future development, warranting a survey of customers.

We decided to ask if 1) UBC FS customers were satisfied with their plant-based options, 2) what they would like to see changed in current plant-based offerings, and 3) what

could convince them to buy more plant-based meals if they did not already. We performed a pre-test at Open Kitchen using a first draft of the questionnaire. This pre-test provided useful information to improve the wording of our questions, to restrict our survey to regular customers familiar with the menu and to expand the number of categories to classify open ended questions. Therefore the survey unfolded as follows:

- 1) Are you a regular customer at this outlet? If so, we provided a brief explanation of the term “plant-based options” and pursued the interview with:
- 2) Are you satisfied with the plant-based options?
- 3) What would you like to see more of in plant-based options?
- 4) What would encourage you to buy more plant-based options?

The answer categories we used to describe customer responses are:

- 1) yes or no
- 2) yes, no, maybe, or unsure
- 3) cost/affordability, nutrition, taste, variety (changing menu items), variety (different ingredients), variety (other), unsure, nothing, and other (fill in blank)
- 4) cost/affordability, nutrition, taste, variety (changing menu items), variety (different ingredients), variety (other), unsure, already eats plant-based, nothing, and other (fill in blank).

IV) Conduct survey and analyze data

We surveyed customers during the lunch hours of 11 am - 2 pm during the week of March 13-17, 2017 (Table 1, 2). We allowed interviewees to self-identify as regular customers which we defined as having a good understanding of the menu offerings. We decided there should always be at least two group members at each outlet while the

survey was being performed; one person to ask the survey questions and one person to count the number of customers during the time the survey took place to be able to evaluate the size of our sample relative to the population of customers (Table 1, 2). We recorded all survey answers into a Google Form (Appendix A and B).

Open Kitchen	
Total customers during survey hours	1,461
Total customers surveyed	272
Total customers surveyed identified as regulars	218
Total regular customers surveyed/Total customers	14.9%

Table 1. Population and sample sizes for the Open Kitchen survey. The survey took place on three consecutive days in 2017 at lunch time: Tuesday, March 14 between 11:00-12:20, Wednesday March 15 between 12:40-14:00 and Friday March 17 between 12:00-14:00.

The Loop Cafe	
Total customers during survey hours	392
Total customers surveyed	191
Total customers surveyed identified as regulars	127
Total regular customers surveyed/Total customers	32.4%

Table 2. Population and sample sizes for the Loop Cafe survey. The survey took place on three consecutive days in 2017 at lunch time: Tuesday, March 14 between 12:40-14:00, Wednesday March 15 between 11:00-12:30, Thursday March 16 between 12:15-14:00 and Friday March 17 between 11:00-12:45.

We exported all responses from Google Forms to Google Sheets, then analyzed survey data by outlet. We created graphs on Google Sheets using responses to questions by regular customers. We analyzed results from both sales data and survey data to obtain insight into the plant-based purchasing habits of regular UBC FS customers, which are explained in the next section.

V Results

Sales Data

Totem Park Residence Dining Hall

The Totem Park Dining Hall is located within the Totem Park Residence complex on West Mall. On average, plant-based offerings comprised 36.8% of net sales and 43.6% of the net quantity of items sold using March and November 2015 and 2016 sales data (Fig. 1a and 1b).

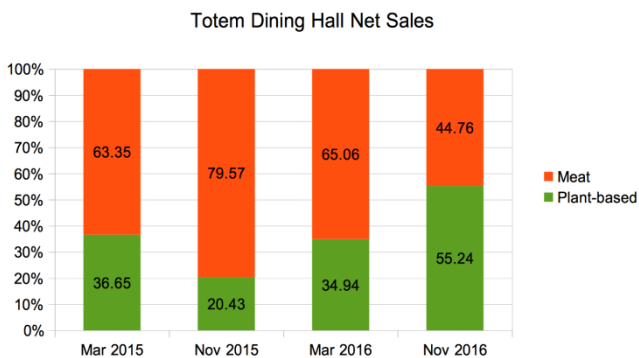


Figure 1a. Plant-based net sales relative to total net sales.

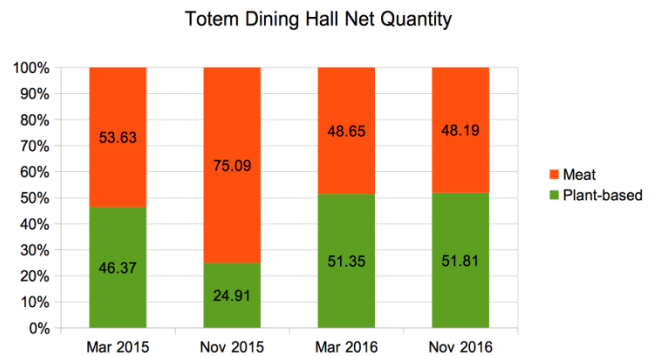


Figure 1b. Plant-based net quantity of items relative to total net quantity.

Place Vanier Residence Dining Hall

Place Vanier Dining Room is located within the Place Vanier Residence complex on Lower Mall. On average, plant-based offerings comprised 46.7% of net sales and 58.5% of the net quantity sold using March and November 2015 and 2016 sales data (Fig. 2a and 2b).

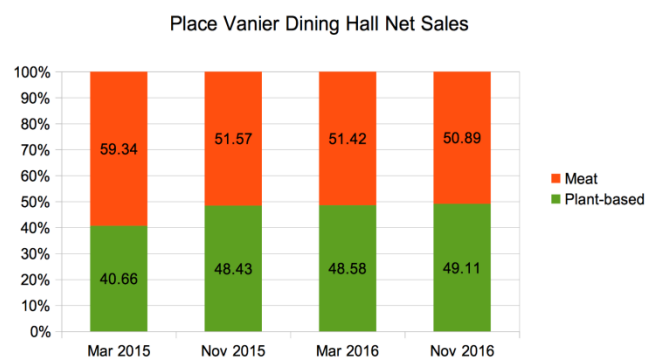


Figure 2a. Plant-based net sales relative to total net sales.

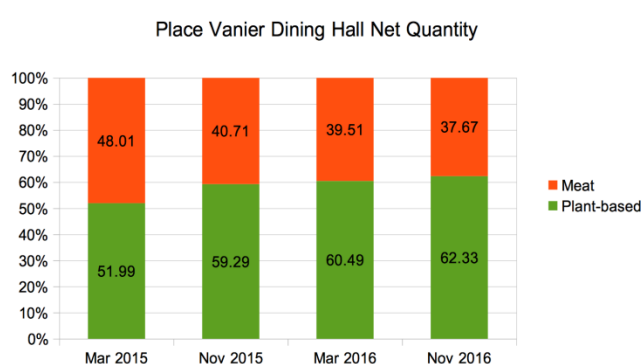


Figure 2b. Plant-based net quantity of items relative to total net quantity.

Open Kitchen Residence Dining Hall

Open Kitchen is located within the Orchard Commons on Agronomy Road. For November 2016, plant-based offerings comprised 33.9% of net sales and 40.7% of the net quantity sold using October 2016 sales data (Fig. 3a and 3b).

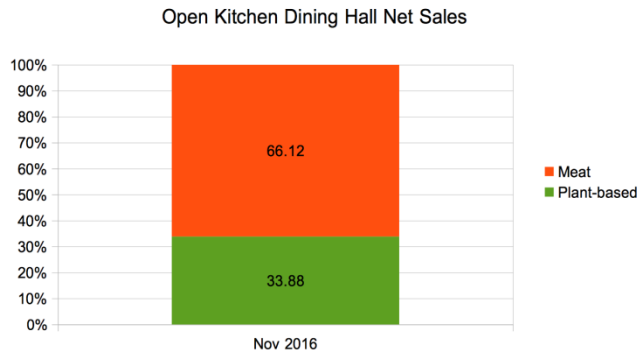


Figure 3a. Plant-based net sales relative to total net sales.

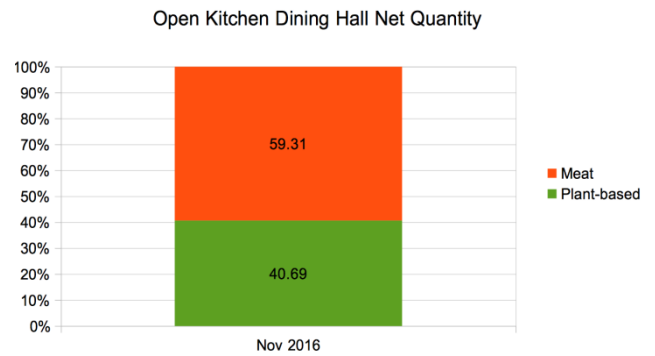


Figure 3b. Plant-based net quantity of items relative to total net quantity.

Ike's Cafe

Ike's Cafe is located in the Irving K. Barber Learning Centre on East Mall. On average, plant-based offerings comprised 22.7% of net sales and 32.6% of the net quantity sold using March and November 2015 and 2016 sales data (Fig. 4a and 4b). There is little variability from month to month, however, the sales of plant-based foods rose 5% from March 2015 to November 2016.

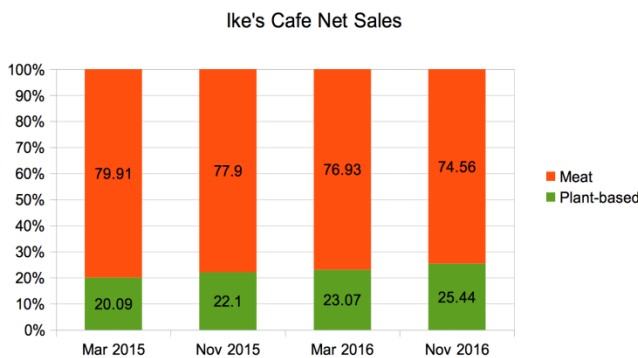


Figure 4a. Plant-based net sales relative to total net sales.

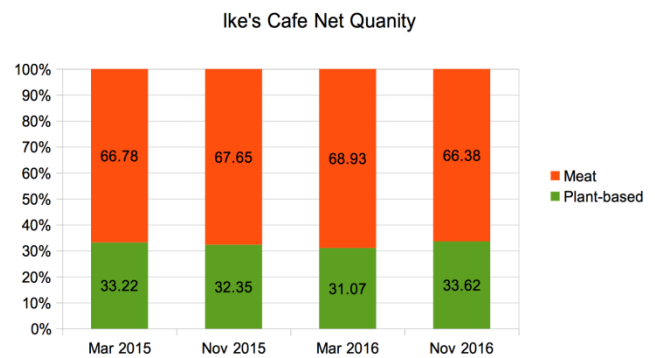


Figure 4b. Plant-based net quantity of items relative to total net quantity.

Cafe Perugia

Cafe Perugia is located in the Life Sciences Centre on Health Sciences Mall. Cafe Perugia’s menu varies monthly and consists of 47-50% plant-based offerings (Appendix C). On average, plant-based offerings comprised 35.4% of net sales and 39.0% of the net quantity sold using March and November 2015 and 2016 sales data (Fig. 5a and 5b). Plant-based sales increased 26.8% from March to November, 2015, and net quantity sold increased a corresponding 25.4% over the same time period.

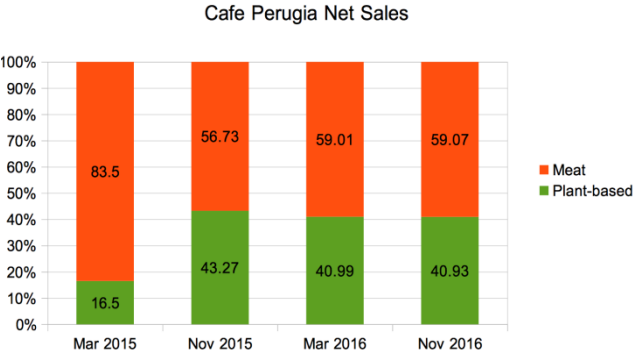


Figure 5a. Plant-based net sales relative to total net sales.

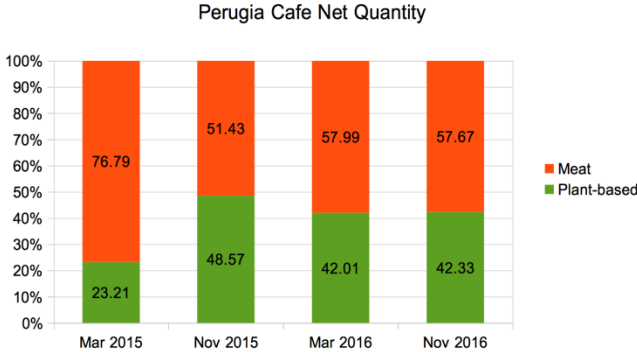


Figure 5b. Plant-based net quantity of items relative to total net quantity.

The Loop Cafe

The Loop Cafe is located in the Centre for Interactive Research on Sustainability on West Mall. The Loop’s menu varies by month and consists of 46-58% plant-based offerings (Appendix D). On average, plant-based offerings comprised 34.9% of net sales and 38.0% of the net quantity sold using March and November 2015 and 2016 sales data (Fig. 6a and 6b). From 2015 to 2016, plant-based net sales and quantity sold have decreased 13%.

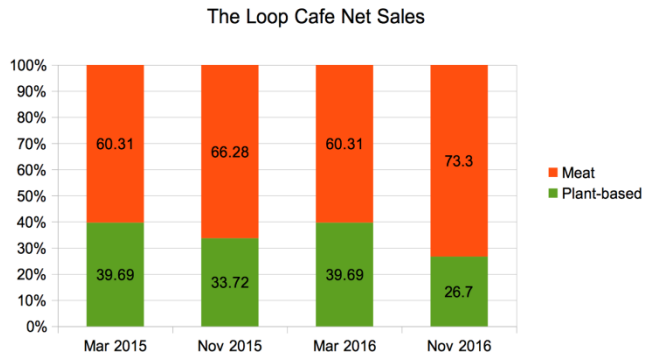


Figure 6a. Plant-based net sales relative to total net sales.

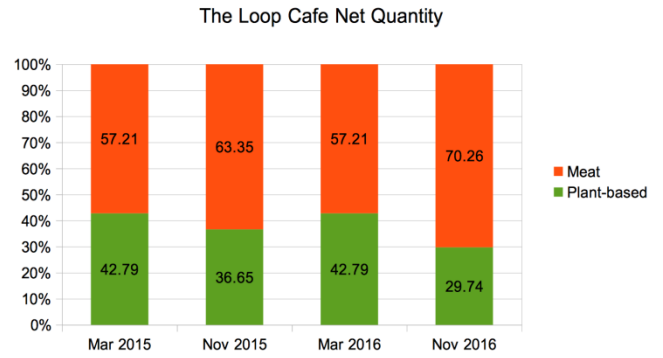


Figure 6b. Plant-based net quantity of items relative to total net quantity.

The Point Grill

The Point Grill is located within the Marine Drive Residence complex on Lower Mall. The Point Grill's menu varies monthly and consists of 21-26% plant-based options (Appendix C). On average, plant-based offerings comprised 24.1% of net sales and 24.7% of the net quantity sold based on March and November 2015 and 2016 sales data (fig. 7a and 7b).

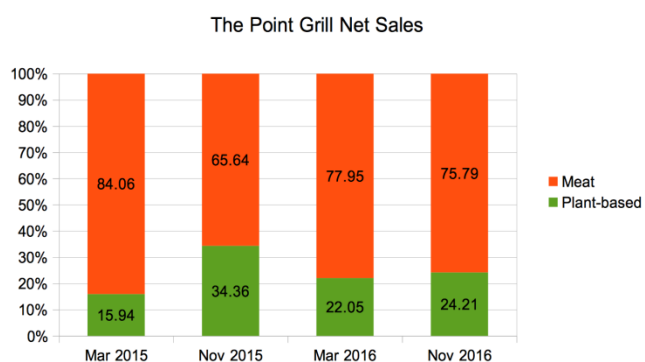


Figure 7a. Plant-based net sales relative to total net sales.

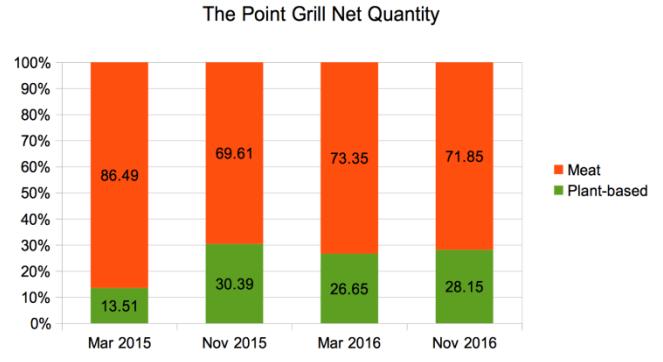


Figure 7b. Plant-based net quantity of items relative to total net quantity.

Sage Bistro

Sage Bistro is located within the University Centre on Crescent Road. Sage Bistro’s menu varies monthly and consists of 15-25% plant-based offerings (Appendix C). On average, plant-based offerings comprised 9.0% of net sales and 15% of the net quantity sold using March and November 2015 and 2016 sales data (Fig. 8a and 8b).

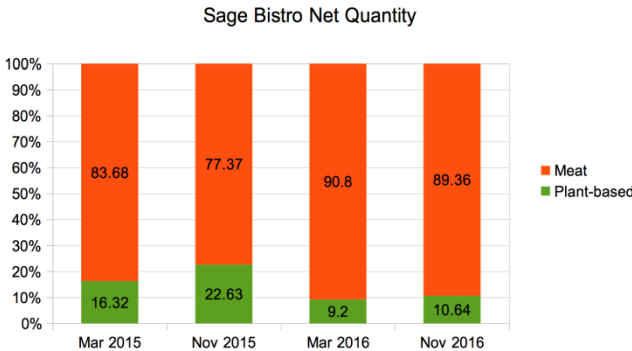
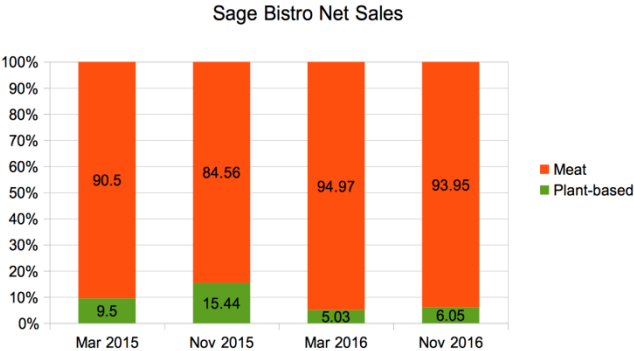


Figure 8a. Plant-based net sales relative to total net sales.

Figure 8b. Plant-based net quantity of items relative to total net quantity.

The Hungry Nomad Food Truck

The Hungry Nomad’s location varies. On average, plant-based offerings comprised 21.0% of net sales and 21.1% of the net quantity sold using March and November 2015 and 2016 sales data (Fig. 9a and 9b).

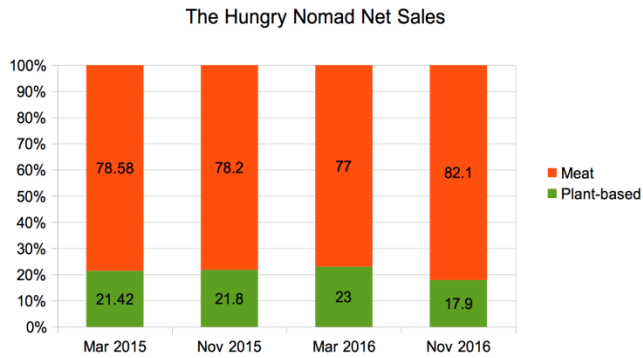


Figure 9a. Plant-based net sales relative to total net sales.

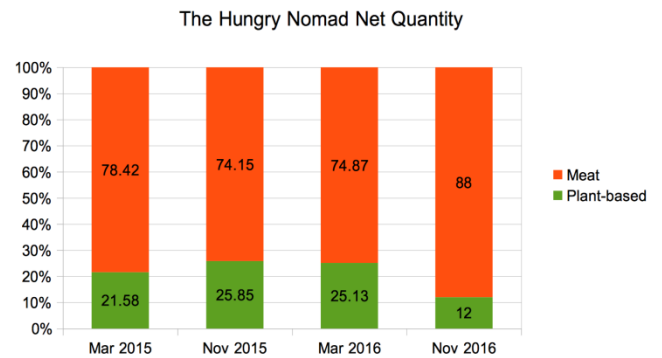


Figure 9b. Plant-based net quantity of items relative to total net quantity.

It's About Thai Food Truck

It's About Thai's location varies. It's About Thai's menu varies monthly and consists of 41.7-50% plant-based offerings (Appendix C). On average, plant-based offerings comprised 22.7% of net sales and 25.1% of the net quantity sold using March 2016 and November 2015 and 2016 sales data (Fig. 10a and 10b).

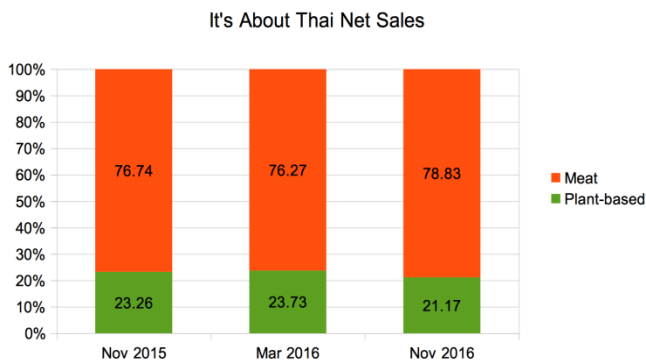


Figure 10a. Plant-based net sales relative to total net sales.

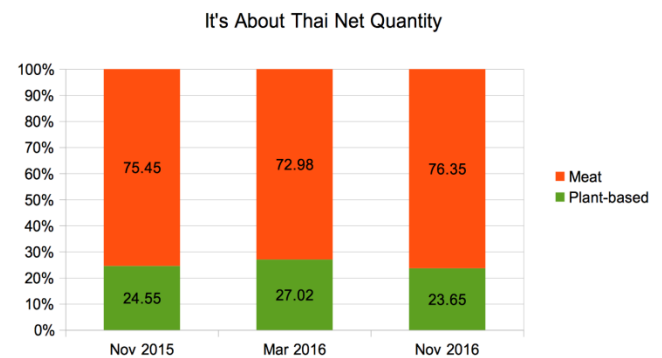


Figure 10b. Plant-based net quantity of items relative to total net quantity.

Survey Data

The Loop

We surveyed 127 customers of which 70.1% reported they were satisfied with the plant based options available at the Loop (Fig. 11a). Most people could not offer suggestions to improve the menu or sales of plant-based offerings or were unsure (Fig. 11b). Most people offering suggestions for improvement indicated more variety of ingredients and dishes. Taste was an important factor for convincing someone to buy more plant-based meals (Fig. 11c).

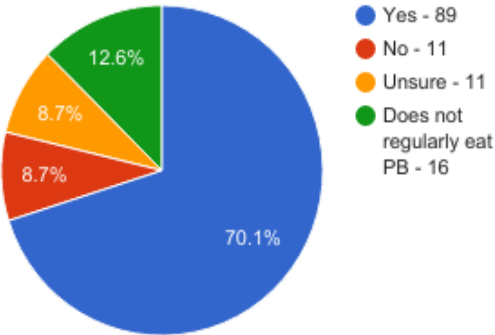


Figure 11a. Proportion of customer responses to the question "Are you satisfied with the plant-based options at this location?" at The Loop Cafe.

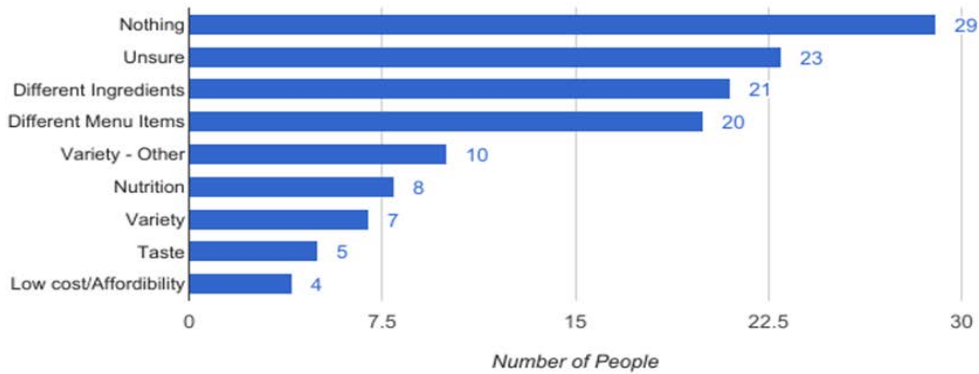


Figure 11b. Number of customer responses to the question “What would you like to see more of in plant-based meals?” at The Loop Cafe.

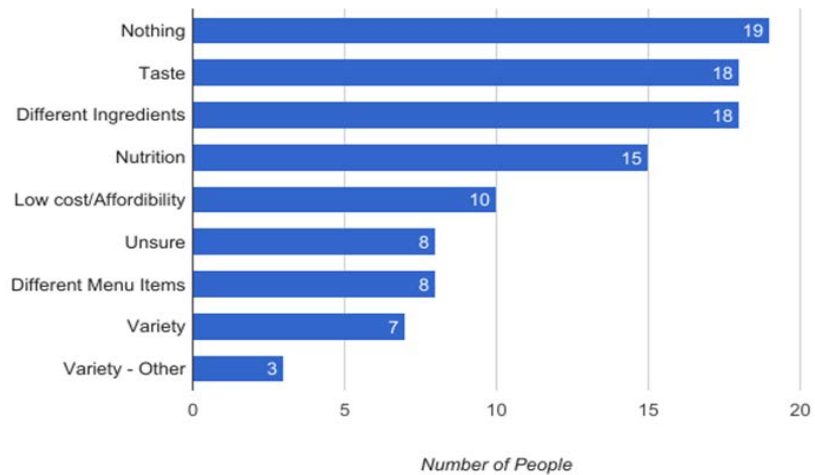


Figure 11c. Number of customer responses to the question “What would encourage you to buy more plant-based meals?” at The Loop Cafe.

Open Kitchen

We surveyed 218 customers of which 59% reported they were satisfied with the plant based options available at Open Kitchen (Fig. 12a). Increasing the variety within ingredients and dishes were the most common suggestions for improving current plant-based offerings (Fig. 12b). Low cost and affordability was the most convincing factor for increasing plant-based sales (Fig. 12c).

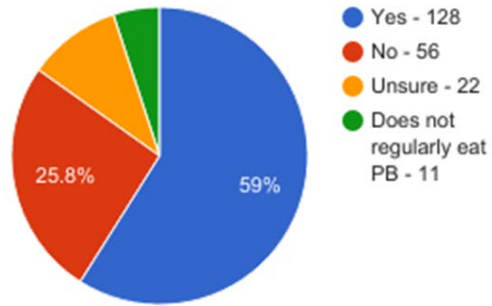


Figure 12a. Proportion of customer responses to the question “Are you satisfied with the plant-based options at this location?” at Open Kitchen

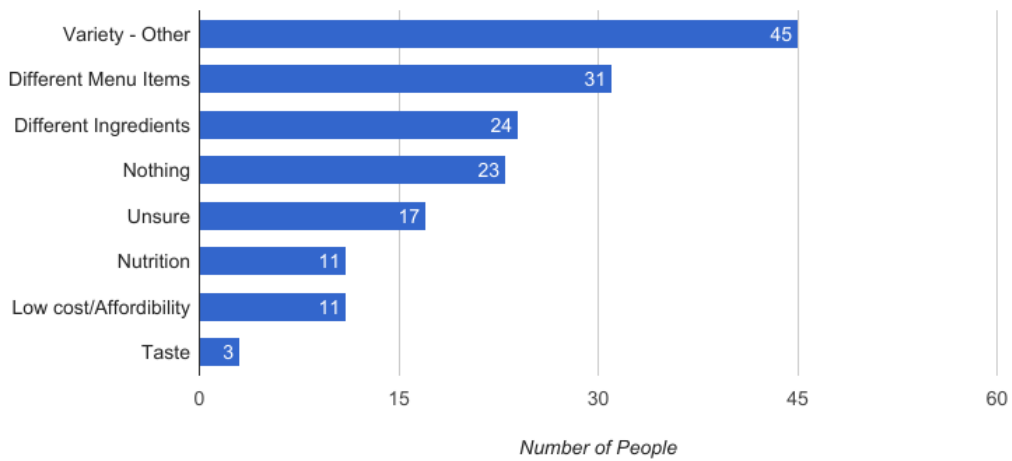


Figure 12b. Number of customer responses to the question “What would you like to see more of in plant-based meals?” at Open Kitchen.

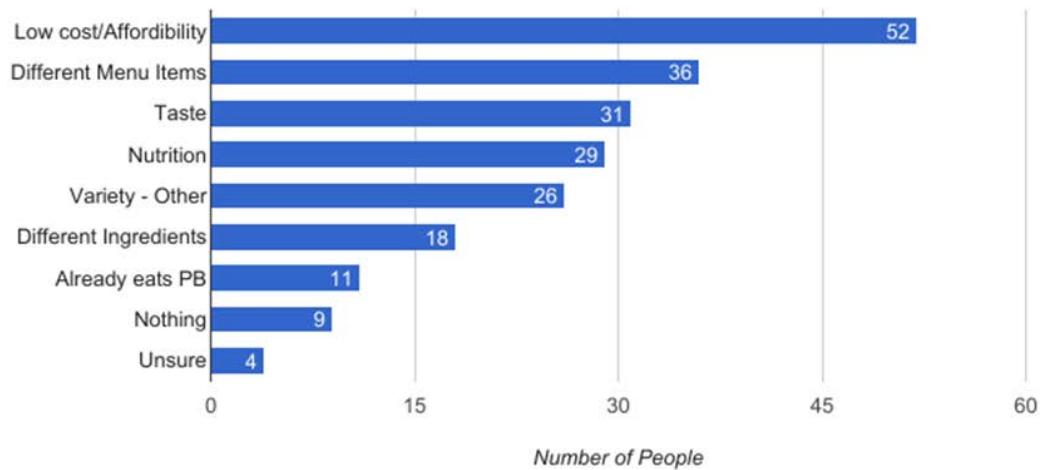


Figure 12c. Number of customer responses to the question “What would encourage you to buy more plant-based meals?” at Open Kitchen.

VI Discussion

Residence Dining Halls

Place Vanier sold more plant-based items (47% of sales averaged over 4 months) than Totem Park (37% of sales averaged over 4 months) and Open Kitchen (34% of sales over one month) (Fig. 6b, 7b and 8b). Close to a quarter of customers at Open Kitchen (24%) mentioned lower prices as a factor that could draw them to purchase more plant-based foods (Fig. 12c). Affordability is especially relevant in a student residence dining hall where students have purchased a meal plan and prefer the funds to last as long as possible. Customers also indicated that an increase in variety of ingredients and types of dishes in plant-based offerings since the offerings available to them do not change (Fig. 12b). Interestingly, Open Kitchen has a set menu while Totem and Vanier have rotating menus. Without having surveyed customers at

Totem Park and Place Vanier, we do not have information to suggest whether they may also perceive a lack of plant-based variety, yet the difference in menus may help explain why Totem Park and Place Vanier sell more plant-based offerings. The set menu may give customers the perception that they have less variety available to them. In addition, the plant-based station at Open Kitchen may inadvertently send the message that there are not plant-based options at the other stations. One customer commented that it is “boring to have the same foods every day” in regards to plant-based offerings (Appendix E).

Totem and Vanier dining halls data show approximately half of main meal offerings (entrees, salads, sandwiches) as plant-based. Proportion of items sold approach 50% and even surpass this mark in some months, and net sales for Vanier are around 50% (Fig. 1a-b, 2a-b). Vanier and Totem dining halls’ customers appreciate plant-based offerings more than the other outlets studied.

The Loop

The Loop (Fig. 7b) had higher sales for plant-based offerings compared to Point Grill (Fig. 7b), Ike’s (Fig. 4b) and Sage Bistro (Fig. 8b) and its plant-based sales quantity were substantially higher in March than in November for both years (Fig. 7b).

Understanding seasonal preferences could increase plant-based offering sales.

A substantial menu restructuring happened concurrently with this decline in plant-based sales. The menu expanded in November 2016 to include 15 new plant-based soups. While the new soups sold well in November 2016, the other categories for plant-based offerings (entrees, sandwiches and salads) decreased substantially relative to sales between March and November 2016 (Appendix D). Overall, the new menu at the

Loop did not result in an increase in plant-based purchases (Fig. 6a-b).

UBC FS is considering converting The Loop into an entirely plant-based outlet, with the option to add meat for an additional price. Our November 2016 data show that The Loop appears to be meeting demand for plant-based foods, as a recent increase in the proportion of plant-based items in the menu did not result in increased sales (Fig. 7a). It will be interesting to see if the trend will be different when the menu is completely restructured to reflect a new concept that may draw a different customer base.

Sage Bistro

Sage Bistro may be a choice location for expanding plant-based offerings. Sage has the lowest proportion of plant-based offerings and the lowest plant-based sales of all outlets studied (Fig. 8a-b). In November 2015, the plant-based menu offerings increased from 17% to 25% and sales increased accordingly. Many plant-based appetizers were presented in the menu along with the suggestion to purchase a combination to eat as an entrée. From November 2015 to March 2016, plant-based menu offerings decreased from 25% to 16% and the sales and quantity sold decreased as well (Fig. 8a-b). These data suggest that increased supply is met by an increased demand at Sage Restaurant and indicate that Sage Bistro is likely to be an outlet favorable to the expansion of plant-based offerings.

Survey Insights

Customers at The Loop and Open Kitchen provided diverse suggestions for increasing variety in plant-based offerings in both types of dishes and ingredients while others provided nutrition-based answers (Appendix E). One customer in particular

suggested that providing samples of plant-based meals might convince them to buy those foods more often indicating that some customers may be unsure of the plant-based options and question whether or not they would enjoy them. Two other customers brought up awareness of the plant-based options as being important for being able to purchase them more often. Some customers distanced themselves from the idea of trying plant-based foods and even suggested that the survey did not apply to them, as they did not identify as vegetarian. This indicates that some view plant-based foods as associated with vegetarianism rather than being a part of balanced omnivorous diet. Overall, the plant-based offerings at UBC FS outlets were cheaper than those with meat. Affordability was a motivation to buy plant-based offerings for 24% of regular customers at Open Kitchen. Generally speaking, customers at Open Kitchen appear more willing to try plant-based offerings than customers at The Loop since "nothing" and "unsure" were the least common responses to the question about factors which could increase the sales of plant-based offerings. Conversely, customers at The Loop most often answered "nothing" to the same question.

VII Recommendations

We have five recommendations for UBC FS and SEEDS. The first two are intended for UBC FS, while the final three are areas to research for future collaborations between the SEEDS program and UBC FS.

1. UBC FS: Increase variety within plant-based offerings, both of ingredients and types of dishes

Variety was the most frequently cited answer to our question, “What would you like to see more of in plant-based meals?” both in terms of ingredient variety as well as menu variety, when an answer other than nothing/unsure was stated. This was particularly evident at Open Kitchen where the menu is fixed.

2. UBC FS: Increase the number of plant-based offerings at Sage Bistro

Sage Bistro reported the lowest sales and offerings of plant-based foods compared to the other outlets analyzed. Plant-based sales would likely benefit from an increase in representation on the menu, as demonstrated by the increased sales following increased representation in November 2015.

3. SEEDS: Investigate Vanier and Totem Dining Halls’ strengths in plant-based sales

For future SEEDS projects, we recommend surveying customers at Place Vanier and Totem Park to understand why plant-based options at these outlets are popular.

4. SEEDS: Analyze sales data at Open Kitchen again to better assess their performance with additional months of data

Only one month of sales data from Open Kitchen was available for analysis at the time of this project. Future SEEDS projects should assess Open Kitchen sales data to

determine if its plant-based sales eventually match or keep lagging behind those of other dining halls.

5. SEEDS: Investigate the motivations behind plant based consumption in non-plant based consumers

Not everyone who eats plant-based foods will be a vegetarian or vegan. Understanding non-vegetarian motivations is crucial to boosting plant-based sales. It is possible that labelling counters or products as “vegetarian” signals to non-vegetarians that the product is not for them, as reported by some individuals in our survey. Future research could include collaboration between SEEDS, LFS 450 and the Department of Psychology to investigate the effects of labelling of plant-based options on non-vegetarian purchasing habits. Ultimately, transitioning to sustainable food options as part of the campus wide commitment to sustainability requires a thorough analysis of non-vegetarian and vegetarian motivations alike.

VIII List of References

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VIII Appendices

Appendix A: Survey used at Open Kitchen on March 14, 2017.

UBC FS PB option survey - OK

Intro: "Excuse me, can I ask you 4 quick questions about the food here?" (If yes, proceed; if no, don't)

1. Do you regularly eat at this location?

Mark only one oval.

- Yes
 No

At this point, clarify "plant based options"

Suggestion: "We're doing a survey about plant-based foods at this location. Just to clarify, by plant-based, we mean meatless meals."

2. Are you satisfied with plant-based options at this location?

Mark only one oval.

- Yes
 No
 Unsure

3. What would you like to see more of in plant-based meals?

Check all that apply.

- Low cost/Affordability
 Variety
 Nutrition
 Taste
 Other: _____

4. What would encourage you to buy more plant-based meals?

Check all that apply.

- Low cost/Affordability
 Variety
 Nutrition
 Taste
 Other: _____

Appendix B: Survey used at Open Kitchen on March 15 and 17, 2017 and the Loop on March 14, 15, 16 and 17, 2017

UBC FS PB option survey - LC

Intro: "Excuse me, can I ask you 4 quick questions about the food here?" (If yes, proceed; if no, don't)

1. Do you regularly eat at this location?

Mark only one oval.

- Yes
 No

At this point, clarify "plant based options"

Suggestion: "We're doing a survey about plant-based foods at this location. Just to clarify, by plant-based, we mean meatless meals."

2. Are you satisfied with plant-based options at this location?

Mark only one oval.

- Yes
 No
 Unsure
 Does not regularly eat PB options

3. What would you like to see more of in plant-based meals?

Check all that apply.

- Low cost/Affordability
 Variety - Changing menu items
 Variety - Different/more ingredients
 Variety - other (please clarify in "other" section)
 Nutrition
 Taste
 Unsure
 Nothing
 Other: _____

4. What would encourage you to buy more plant-based meals?

Check all that apply.

- Low cost/Affordability
 Variety - Changing menu items
 Variety - Different/more ingredients
 Variety - other (please clarify in "other" section)
 Nutrition
 Taste
 Unsure
 Already eats PB
 Nothing
 Other: _____

Appendix C: Proportions of plant-based offerings in menus and plant-based sales relative to total sales for five different UBC Food Services outlets.

	Perugia		Point Grill		Sage		It's About Thai		The Loop	
	<i>Menu %</i>	<i>Net Quantity Sold %</i>	<i>Menu %</i>	<i>Net Quantity Sold %</i>	<i>Menu %</i>	<i>Net Quantity Sold %</i>	<i>Menu %</i>	<i>Net Quantity Sold %</i>	<i>Menu %</i>	<i>Net Quantity Sold %</i>
March 2015	47.3	23.21	21	13.5	17	16.32	-	-	46	42.79
Nov 2015	47.3	48.57	26	30.39	25	22.63	50	24.5	52	36.65
March 2016	48.7	42.01	26	26.65	15	9.20	41.7	27	46	36.65
Nov 2015	50	42.33	Un-known	28.15	17	10.64	41.7	23.7	58	29.74

Appendix D: Quantity and Sales of plant-based and meat-based foods at The Loop in March and November 2015 and 2016.

Loop						
Mar 2015	NET QUANTITY			NET SALES		
		Vegetarian	Meat		Vegetarian	Meat
	Total	42.79	57.21	Total	39.69	60.31
	Entree	37.26	62.74	Entree	33.87	66.13
	Sandwich	26.04	73.96	Sandwich	23.11	76.89
Nov 2015	NET QUANTITY			NET SALES		
		Vegetarian	Meat		Vegetarian	Meat
	Total	36.65	63.35	Total	33.72	66.28
	Entree	31.91	68.09	Entree	29.78	70.22
	Sandwich	28.32	71.68	Sandwich	24.31	75.69
Mar 2016	NET QUANTITY			NET SALES		
		Vegetarian	Meat		Vegetarian	Meat
	Total	42.79	57.21	Total	39.69	60.31
	Entree	37.26	62.74	Entree	33.87	66.13
	Sandwich	26.04	73.96	Sandwich	23.11	76.89
Nov 2016	NET QUANTITY			NET SALES		
		Vegetarian	Meat		Vegetarian	Meat
	Total	29.74	70.26	Total	26.70	73.30
	Entree	28.47	71.53	Entree	26.06	73.94
	Sandwich	14.01	85.99	Sandwich	11.95	88.05

Appendix E: Miscellaneous answers reported under category 'Other' to survey questions conducted at Open Kitchen (OK) and The Loop.

Other responses related to question "What would you like to see more of in plant-based meals?":

(Open Kitchen):

Weight loss, Asian foods, Salad bar needs improvement. More like totem., They're okay., More ice cream, More sweets and fruit., Usually options that i wouldn't eat, Less carbs, more premade salad, Asian food, Asian food. Long time transition (between switching menu meals). More, Condition of vegetables, More international., Less sodium, oil, more protein, vegetables, More whole foods. E.g. baked yams. I get sick of the options fast., Pb yogurt. Coconut yogurt., Rarely vegan soups! Vegan mayo. Vegan options. Vegan cheese., More kinds of salads., More rotation at VK. Same things., The options are good but they never switch., More filling, Less salty, Beans and lentil. Tofu is not enough., Avocado, A bit basic. Mix more things. Side dishes are too oily., More salad options. Salad bar never changes. More smoothies. Fresh fruit., Larger portions, Salad bar is insufficient. Too much fat. Hard to be healthy when it's so fatty. Otherwise expensive at salad bars. Shouldn't be as expensive as Starbucks or Jugo juice., Accurate calorie counts. Bowls are too caloric on advertising. Wants more calories. Vegetarian kitchen is good, but even cheaper would be awesome., More spicy Chinese foods "salty spicy", Fresh fruit. Berries. Fresher salad., Fresh fruit. Better pasta. More fresh everything., Less salt., No fries with burger. Too separate. Right corner is cheaper but has no veg option. Don't get much for price at vegetarian kitchen. More substantial you have to buy more meals., Tofu, kale, black beans., Prices are great but quantity is poor., Chinese food., Less greasy food., Vegetarian station closes first., Other stations give more food. Vegetarian kitchen portions are not enough. His friends reiterated this. Fresh fruits. Fruit bowls like vanier. Seasonal fruits., Chinese food. Diversity of foods. Boring to have e the same foods every day., Potatoes. Cucumber. Broccoli. Tofu., Different protein sources other than tofu., Sauteed vegetables., Baby carrots to snack on., Sushi., Labelling! A little plant or V to show what's vegetarian and what's not., Exploiting the health and environmental consciousness by charging more. warm options. Not just salads and sandwiches. E.g. casseroles., Really likes VK. More like that., grains in the salad bar., Tofu broccoli potato., Veggies burger., More Asian food., Sidebar needs more variety, more soups, Options with Less starchy vegetables., More variety in side bars salads, vegan cheese, more veggie options at the comfort food station, more fresh fruit., More foods that taste like meat, smoked tofu., Veggie pizza., More options for salads, a salad bar where someone prepares the salad., Asian foods. Kim chi. Korean foods., Smoothies., Balanced offerings at the non veggie bars., Nothing to eat after hours., Gluten free, more protein options besides tofu F, polenta, more breakfast options, dairy free cheese ice cream, Salad bar and pasta are more expensive than a burger., olive oil and vinegar at the salad bar, veggie options at the pasta bar.]

(The Loop):

Veggie patties, more tofu, more options for salads, Gluten-free Bread., Option with a little meat but still lots Of veggies., Burritos., Portion is too small., Roasted vegetables. Fruits., Sandwiches, Wraps., More appeal visually., Bigger portion, more Asian food.,

Other responses to question "What would motivate you to purchase more plant-based meals?":

(OK):

Faux meat, Stronger meatless Monday, If you could add in stuff, Appeal to non-vegetarians., Lower calorie., If i knew more about it., At every station., Side of meat for those options., Vegan, Too slow at VK., Meatless Monday. More advertising., Too expensive all over., Less salt., More specials, Already interested. Advertising would be better., More advertising cause the menu changes., I always go if they promote a change. E.g vegetarian curry., I'm a meat eater. I wouldn't., Yogurt is so expensive! I never touch salad bar cause i can make it myself. they don't care about health., Vegetarian kitchen is safer for me with allergies. Dairy nut and peanut. Cross contaminations.,

(The Loop):

Advertise better, Has specific cultural tastes. Likes Indian foods., Usually PB options are really warm/ taste heavy like curries (wants lighter fare)., Better compliments to the dishes like sauces and spices., More proteins like nuts, seeds, and legumes., Veggie is too similar to meat (will choose meat since so similar)., More fake meat options., South East Asian type meals, Quinoa, Lower fat options, for example cheeses., Finds flavours bland. Wants more vibrant flavours., More hot entrees, Meals with healthier fats like avocados and coconuts., Non gmo soy based., Visually appealing., Gluten free., Better Eco to go containers., More warm rather than focusing on the salad bar., More steamed veggies. A little greener. They get overcooked., New Memphis food style. Faux meat., Salads are too expensive., Add beans and cheese. Also food is too salty., Visual appeal., Brown rice, appearance, portion size, More protein quantity and portion size., More curries, Falafel., Better ingredient labeling