

STUDENTS AND SUSTAINABLE FOOD



Sustainable Food. Retrieved from <http://www.simplebites.net/10-tips-for-sustainable-eating/>

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EXECUTIVE SUMMARY:

This study was undertaken to understand whether or not Dalhousie students care about organic food and where their food is sourced. In addition we wanted to find out how much, if any, of these products they are purchasing, as well as if the amount that they buy is affected by the price of the food or their income.

The literature found that there is widespread concern among students about food available on campuses, as well as support for local and organic food more generally. It also found that people's willingness to purchase organic and/or local food is negatively affected by the price.

We conducted a 22 question survey of Dalhousie students on the website Kwik Survey. 125 students responded, of which 110 were fully completed. The limitations of our study was the amount of time available to have the survey live, as well as the variety of people from different faculties that we were able to send the survey to.

Results:

- When asked if they care about where food services sources their food 65% of respondents either agreed or strongly agreed.
- There was no correlation between average annual income and how much organic and/or local food the respondents purchased.
- Location and price do affect what kind of food the respondents buy.
- Despite this 86% of respondents purchase organic and/or local food as at least 25% of their overall food.
- We were unable to draw any connections between faculty and whether they purchase these products.
- We also had a low response from students who live on campus.

The implications of this study is that students do care about what kind of food they buy and where it is sourced. It also shows that students are purchasing these food despite the cost, and therefore it would be wise for Food Services to look into making more of these products available on campus. It also found that students purchase more local food than organic, so it is more important that Food Services purchase food from Nova Scotia than anything else.

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1. INTRODUCTION

The overarching theme of this project is based on the Greening of Dalhousie Campuses across Halifax and Truro. This project aims to look at the relationship between students concerns about local and organic food and their accessibility to such food. This study will be a preliminary look into possible connections between students, demographics, income and local/organic food. The project is intended to provide information on these topics in hopes of increasing the availability and student purchase of local and organic food on campus. This project will look at a small sample of Dalhousie students and compare and contrast to existing literature on similar studies.

1.1 RATIONALE

The primary objective of this study is to understand what student's opinions are regarding local and organic food, and to decide whether students would support food services using more local and/or organic foods on campus. In this study we consider temporal, geographic, and conceptual factors throughout this study.

This topic is important because it can help to gain a better understanding of student preferences and determine how certain factors, demographic or accessibility-related, compare with student opinions. This can provide insight to the potential differences between perceived preferences and actual behaviour. The study can further be used to assess the adequacy of current on-campus food services, and determine where improvements are most necessary or desired. It will provide Food Services with a better guide on where to effectively and efficiently invest resources for optimal reception and utilization of said services by the student population.

This research will provide important insight to student values with respect to food and their opinions regarding on-campus food services. In this study we aim to observe how much of a role the cost of food plays, as well as the influence of proximity from an individual's residence to a "suitable" food vendor. We anticipated differences between responses from students of different faculties and programs. For example, we expected to see more respondents from sustainability or environmental programs in favor of local and organic food.

This study will contribute to the greening of Dalhousie campuses by demonstrating that students have a preference for sustainably sourced foods, thus serving as a motivation for positive changes to on-campus food services. Such changes could include facilitation of expanding the accessibility of services such as the weekly farmer's market held in the

Student Union Building. We ultimately hope that this study will help identify barriers in “green-eating” habits for students and serve as a catalyst for the greening of Dalhousie's on-campus food services.

1.2 RESEARCH PROBLEM

How much do students at Dalhousie University care about local and organic food? To what extent is their willingness to purchase it based on accessibility¹ and/or demographics²?

1.3 SCOPE

This study will collect information surrounding the food purchasing habits of students at Dalhousie University to examine the importance of organic and local food availability on the Dalhousie campus. The results of the study will compare student attitude on food choices and determine whether the annual income of students has a direct correlation with the food they purchase.

Dalhousie University's Food Services Department can apply the general information provided on previous work, and the specific student demographic information provided in this study to customize the availability of organic and local food on the university campus.

2. BACKGROUND AND LITERATURE REVIEW

Consumption of local and organic food in Western societies has grown in popularity for various reasons, including health benefits, sustainable choices and environmental responsibility (Little, 2010). While there are various individual interpretations of the definition of organic and local food, the overall idea remains the same: they are more environmentally sustainable (Seyfang, 2006).

2.1 ECO-FRIENDLY ATTITUDES

Literature using the Theory of Planned Behavior (TPB) framework has explained reasons behind our actions (as a society) in relation to purchasing more sustainable foods. These factors are influences such as: attitude towards organic and local foods; subjective

¹ Accessibility is defined for this project as cost and geographical proximity to suitable food vendors

² Demographic refers to factors such as provenance, faculty/program of student, personal income/budget, etc

norms and social pressures to engage in certain behaviors (e.g. whether to buy sustainable food); or perceived behavioral control, which relates to the financial aspects of buying organic and/or local food (Ruiz de Maya et al., 2011). The application of the Theory of Planned Behavior framework is useful in examining sustainable food consumption as a large society, but is also applicable to smaller, more specific groups (such as a university student population).

Students have demonstrated notable interest and concern in the types of food available on their campus and the type of vendor the food is coming from (Barlett, 2011). Significant studies in this area have examined whether student awareness and attitude on organic food relates to their food consumption, and how they feel about having organic options available to them on campus (Dahm et al., 2009). Results published from Dahm et al. showed that attitude directly correlates with consumption choices and students felt positive about having organic options available on campus.

2.2 LOCAL AND ORGANIC FOOD DEMAND ON UNIVERSITY CAMPUSES

Previous articles have examined the general relationship between student demand of organic food and its availability on university campuses. An article by Klassen et al. on planning food services on university campuses highlighted the correlation between food services and quality of life on campus (2005). The authors claim that students have an overall dissatisfaction with the food available on campus for reasons such as poor selection and limited healthy options. Related surveys have shown a demand for increased emphasis on the use of local food on university campuses (Arias, 2009); and in response, some universities (such as the University of Wisconsin at Madison) are introducing more organic and locally grown produce on their menus (Klassen et al., 2005).

A few colleges in the United States of America, including Yale, are even creating organic mini-farms on or near campus. Produce from the Yale Farm is present at special events on campus and is sold weekly at the New Haven Farmer's Market. Yale Farm is run by the Yale Sustainable Food Project; a university group made up of students, faculty and staff. Their goal is for Yale to serve 100% sustainable and organic food, and progress has been rapid. Five years ago, the university served almost no organic food; and four years ago, Yale began serving some organic food in one of the dining halls. By last year, organic entrees were offered at least once daily at all dining halls and as of 2007, there were two organic meals offered daily (Liu, 2007).

The collective action and demands from students has brought more sustainable food and food practices to their campuses; additionally, student actions have prevented vendors

that sell less sustainable food from opening on campus. Students have protested universities that have tried to allow the opening of fast-food chains on campus (as was the case at Berkley, when a Panda Express was proposed to open). Many colleges in the USA are reworking policies on how their food services obtain food for the cafeterias and meal halls, and some colleges are devoting a certain percentage of their food budgets to buying from local farms or producers (Arias, 2009).

2.3 THE FINANCIALS OF LOCAL AND ORGANIC FOOD

While eco-friendly attitudes influence ideas of the types of food we ought to buy, a person's financial situation dictates whether these ideas are possible. Generally, buying organic and/or local food means a higher financial cost at the point of sale, which can lead to an inconsistency in the correlation between attitude and consumption. A survey conducted by Ruiz de Maya et al. (2011) found that almost 90% of consumers in the USA would buy organic products if they were the same price as inorganic products (Ruiz de Maya et al., 2011). The dilemma of wanting to buy food that is local and/or organic but being unable to afford the higher cost is an issue that is of particular significance to those with lower incomes – in the case of this study, students.

The study from Dahm et al. showed that taste and price held an additional influence over consumption choices (2009). The price associated with purchasing organic food can be so high that only people earning high-incomes are able to do so (Sangkumchaliang, 2010). Most students are not willing or able to pay the premium for organic and/or local goods, but they would buy them if the foods were sold at more affordable prices. Some of the other reasons for not purchasing organic and/or local foods are: lack of availability and interest, doubts about organic origin, poor taste and appearance (Sangkumchaliang, 2010).

2.4 DALHOUSIE UNIVERSITY'S SUSTAINABLE CONTRIBUTION

Dalhousie Food Services offers a variety of food options on campus that vary from large franchises to smaller, local options. Their mission is to provide “high quality, well balanced, nutritious food options for students, faculty, staff and guests” which includes food that is from “close to home” and sustainable (Dalhousie University).

Dalhousie Food Services has a variety of sustainable initiatives they take to make the university campus 'greener'. One example is the fish that they offer, which is harvested sustainably under the marine stewardship council. Food services fulfills their sustainable initiatives by following Local Produce Purchasing Programs that partner and promote

distributors Canada wide and create seasonal menus to reflect the growing season. Dalhousie University aims to buy locally produced meat, dairy and egg products; particularly those that are raised under free-range and organic practices. Dalhousie has also implemented their new program DINE (Dietary Intolerances & Nearby Eating) @ Dal, in which nearby eating includes food that is 100% local ingredients (defined by Dalhousie Food Services as produced in Atlantic Canada) or food that contains local ingredients.

2.5 OUR PROJECT

The current literature is not specific to Dalhousie University. In addition, while studies have indicated that price of organic food has influence over student consumption choices, an examination of student consumption has not been studied and been further related to student income. Studies have discussed student's attitude towards organic food availability on campus, and surveys conducted in previous studies have divided students into undergraduate and graduate students, while also including faculty and staff. This study focuses exclusively on the student body and the survey separates each student by faculty (e.g. anthropology, biology, engineering, etc), to further determine whether there is a high correlation between the faculty a student belongs to and their food purchasing priorities. Our study will also include the collection of postal code from each person completing the survey to demonstrate the relative distance to farmers' markets and local grocers using Global Information Systems (GIS); this information is relevant in determining the average distance people travel to buy local/organic food.

3. RESEARCH METHODS:

This project collected data from a range of current Dalhousie Students regarding their concerns and opinions on local and organic food as well as their willingness to purchase such food. The survey focused on several factors to ultimately find recommendations on the validity of serving local or organic food on campus. The data was used to find trends between demographics, student's major, income and the types of foods students are buying and eating.

3.1 DESCRIPTION OF STUDY DESIGN

This project investigated the thoughts and concerns that Dalhousie Students have about local and organic food and their willingness to travel and pay for such food. The project took on a qualitative and a quantitative approach for investigating the research problem to insure the results of the data collection rendered a large range of data in the final outcome. Statistical data was collected from a variety of students currently attending

Dalhousie University based on their choices of organic and local food, average money spent on such food and potential demographics affecting these choices. The Survey results also show qualitative findings in the willingness to buy local or organic food, and feelings or concerns regarding the source of their food.

The research tool developed to collect data was a survey that was created on an online survey machine, Kwik Surveys. The proposed sample size was between 100-150 depending on the amount of time the survey could be live once receiving ethics approval. The final amount of surveys completed in the end was approximately 125, and after removing a few that were not fully completed, we had 111 surveys. The survey was distributed by advertising the online link to the survey through email and social media, such as Facebook and Twitter. Distributed the surveys online made it possible to reach a larger population of students in a short amount of time to allow time for adequate data analysis. The link was distributed to a variety of Dalhousie students from the Carleton, Sexton and Studley campuses including students from a variety of majors and backgrounds. The faculty was selected, but the population within the population was chosen at random; groups of individuals in the population are represented in the sample (i.e. faculty). The survey was cross-sectional in nature in that the survey was completed only once, one period of time, rather than comparing the results over-time. The survey's aim was to collect quantitative data of trends, attitudes, and/or opinions of the sample in question. The key elements the survey aimed to collect were:

- Income information
- Employment
- Demographics
- Degree major/faculty
- Where students get food/eat on campus
- Whether or not they care about organic and local food
- Do students worry about where their food comes from

3.2 JUSTIFICATION FOR MEASUREMENT CHOICES

The sample size for this project is relatively large considering the time frame of the study; therefore it is more effective to gather qualitative and quantitative data through surveys to address a larger population of Dalhousie students. This method was chosen over an interview to cut down on time, expand our sample size, as well as broaden our audience (Kirby, Greaves, & Reid, 2006). The survey was conducted through an online database to also allow for a large variety of respondents. Using the internet to collect data provides the ability to access groups and individuals who would normally be difficult to reach in person

(Wright, 2005). By using the internet we were able to reach students that we, as a group, might normally not have access too. If we were to reach out and distribute the survey in person we might run the risk of only sampling students with similar backgrounds, thus making the sample not as diverse.

Considering the nature of the course, “Campus as a Living Laboratory”, the group decided it was more environmentally friendly to conduct most of the research in electronic form. The use of online surveys negates the costs associated with printing, postage , data entry and travel costs associated with accessing a large group of people (Wright, 2005).

Conducting interviews for this project would have been an excellent way to find qualitative data regarding the topic. Unfortunately, considering the time frame of the study, this was not possible. Even through online interviews, by email or chat forums, it can take a lot of time to receive enough data (Wright, 2005). Also, in conducting interviews there is a lot of qualitative data which can take more time to analyse (Wright, 2005).

3.3 PROCEDURES

3.3.1 LITERATURE REVIEW

The first step in study was to conduct some research on similar topics. Smaller literature reviews were completed by each member of the group to try to narrow down and define the research question. Once the research question was narrowed down to focusing on willingness to buy and students interest in sustainable food further research was done on studies with similar research questions. Literature reviews also helped in creating the survey by offering insight on good questions to ask to render applicable results. Some research was also conducted on how to construct questions in a way that it allows for people to choose the most applicable answer.

3.3.2 SURVEY CONSTRUCTION

The survey was constructed by creating a preliminary list of questions that would help to answer the research question. Initially there were 25 questions which were narrowed down to 22 questions for the the final survey. The questions were designed to give us the most information possible without creating a lengthy survey. The survey allowed us to collect qualitative information such as whether or not the respondent was concerned about the source of the food. The survey also allowed us to gain quantitative information such as the amount of sustainable food purchased.

Once the final survey questions were drafted they were submitted for ethics approval. Once approved they were slightly edited and adjusted based on the professors and mentors advice. A consent form was then drafted to allow the respondent to know the full details and obligations of completing the survey, which was posted at the beginning of the survey.

The survey was then posted to an online survey machine, Kwik Surveys, and reviewed by each group member for any flaws. Once everything was approved the survey was made live and then distributed through social media and email.

3.3.3 DATA ANALYSIS

Once the surveys were completed from the desired sample size the data was inputted into tables and graphs to analyse the results and reach conclusions. We found that tables and graphs were the most effective ways to view and see trends in the data. Some of our tables and graphs were created through the online survey machine for individual question statistics. From there the group began to compare the results of individual questions. The tables were made by assigning codes to individual answers and graphing them on a x and y axis. The tables were created using excel. The comparisons that were most effective in answering the research question were:

- Annual income vs. where do you shop for food?
- Annual income vs. where you eat on campus?
- Annual income vs. do you buy local or organic?
- Annual income vs.. does price of food affect the type of food you buy?
- Major vs. I care about, and am interested in where Dalhousie Food Services and Dalhousie food vendors, sources their food.
- Major vs. do you pay attention/notice where your food comes from? Specifically, whether it is organic or local? Or are your food purchases based solely on price, taste and/or need?

Even though the survey had 22 questions, once the data analysis process began we found that a lot of the information gathered was not related to their willingness to purchase or how much they care about local and/or organic food. All the questions were analysed to decide the validity and then a selection of them were chosen for review. The ones that were left out included information such as where students lived and their gender. We found that this information provided us with data far beyond the scope of the project, but could be used for further research on the topic.

3.4 LIMITATIONS AND DELIMITATIONS

The proposed research project was completed over a short period of time and therefore there were some limitations to the research. The data collection from the surveys was done over a two week period which limited the amount of respondents, therefore our sample size had to remain relatively small considering the entire population of Dalhousie students. Time frame also made it more difficult to reach a diverse amount of students. A lot of the respondents are from the majors and backgrounds similar to us, leaving out a range of students in the study. We also found it more difficult to get a good representation of students who live on campus due to the fact that none of us had direct connections to students living on campus.

4. RESULTS

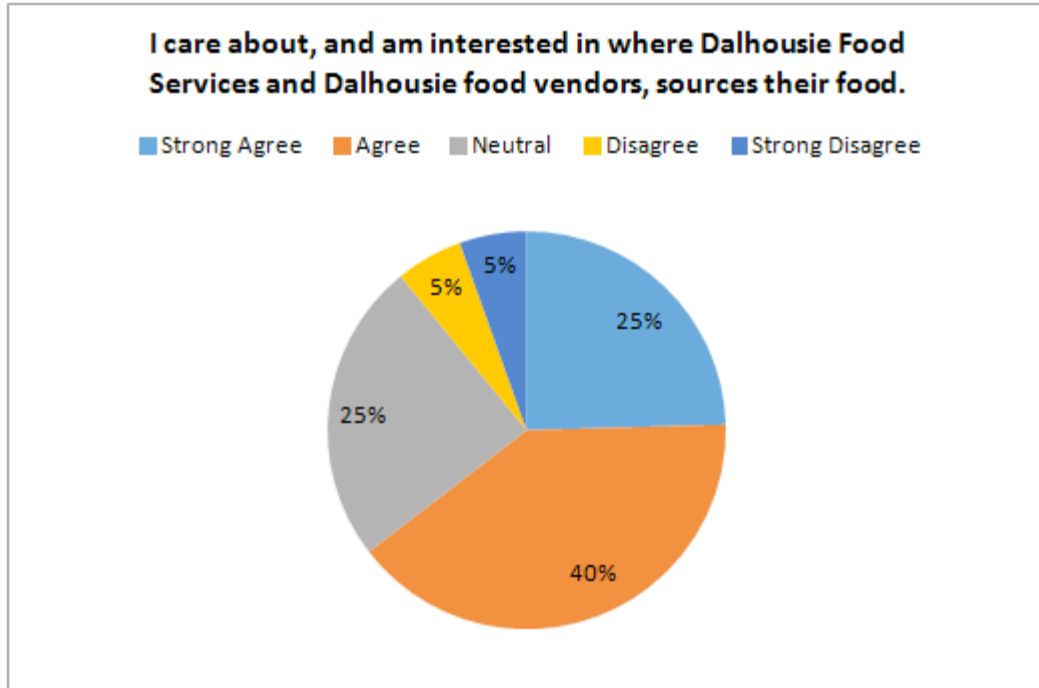


Figure 4-1: When asked if they care about where Dalhousie food services/vendors source their food 65% either agreed or strongly agreed.

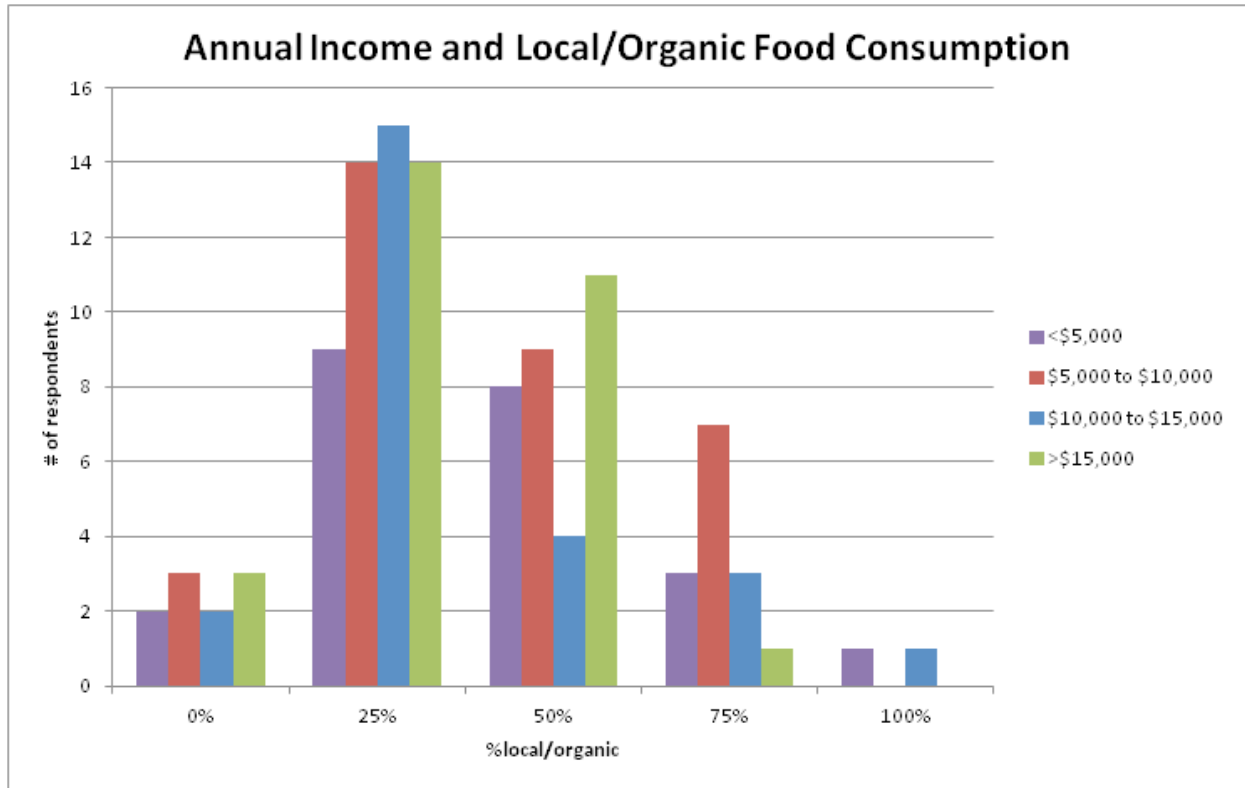


Figure 4-2: Comparison of annual income and percent local and/or organic consumed. Most respondents eat local/organic to some extent, with 25% being the most common response.



Figure 4-3: 80% of respondents shop for food at a grocery store such as Sobeys or Superstore. This can likely be attributed to the larger abundance of Sobeys/Superstore compared to Farmers Markets.

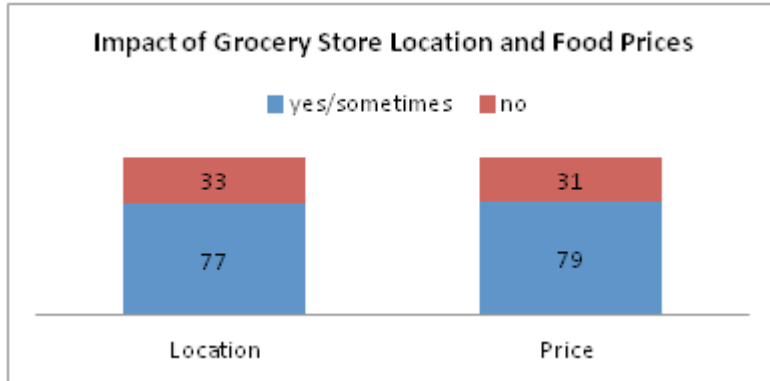


Figure 4-4: Most respondents claim that both location and price impact their consumer behaviours (70% and 72% respectively).

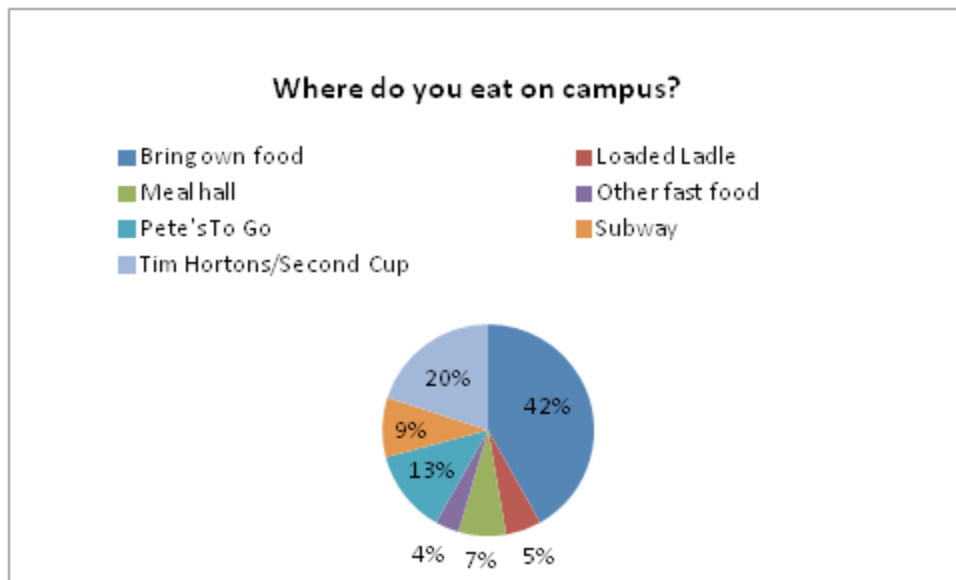


Figure 4-5: 42% of respondents bring their own food to eat on campus. The second most common response was Tim Hortons/Second Cup at 20% of respondents.

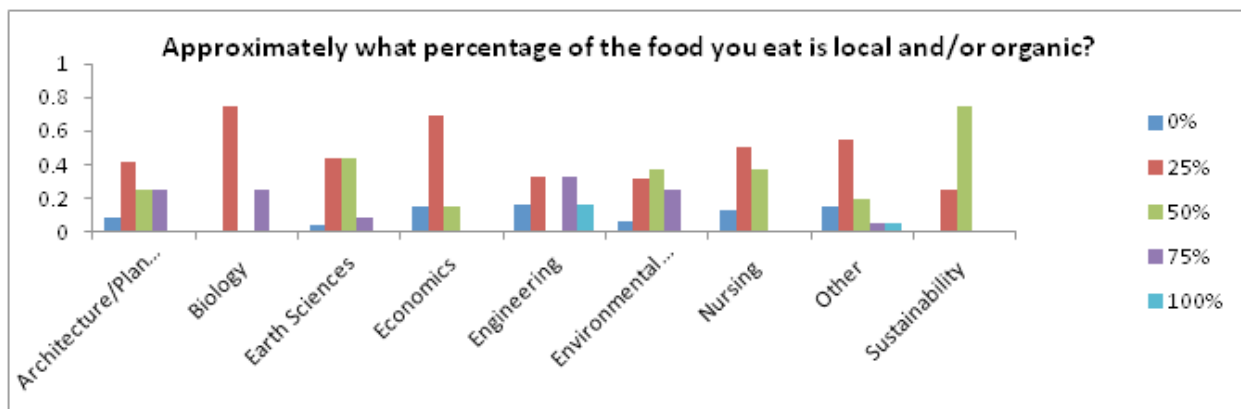
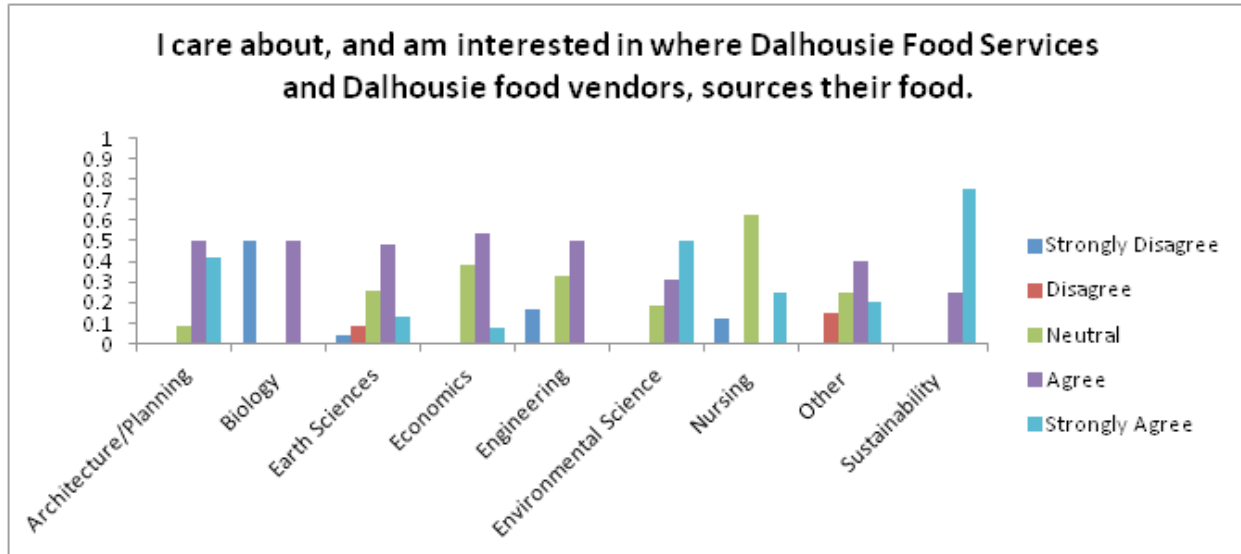


Figure 4-6 & Figure 4-7: Comparisons between study program and the extent to which the respondent cares about where Dalhousie food services/vendors source their food (4-6) and percentage of local and/or organic food consumed (4-7).

5. DISCUSSION

5.1 SUMMARY OF RESEARCH QUESTION AND PURPOSE

This study's main objective was to gain an understanding of the extent to which students at Dalhousie University care about local and organic food and what impact factors such as price and location, as well demographics such as the individuals study program, had on their consumer behaviours. The overall goal was that this study would be used to help in determining if it would be favourable for Dalhousie food services/vendors to incorporate more local and/or organic options into their menus.

5.2 SIGNIFICANT FINDINGS

This study found that the majority of Dalhousie students do in fact care about where food on campus is sourced from, with 65% of respondents claiming they agree or strongly agree that they care. (See figure 4-1). 47% of respondents consume about 25% local and/or organic foods, 29% consume 50%, 13% consume 75%, 2% consume 100%, and only 9% consume 0% local and/or organic foods. Based on reported annual income, we were unable to identify trends correlating income to either where respondents shopped for groceries or the percentage of local and/or organic food they consumed (See figure 4-2). 78% of respondents buy groceries from Sobeys/Superstore; this is compared to 13% who shop at local grocers such as Pete's, 3% who shop at the Farmer's Market, and 4% who mostly eat out. (See Figure 4-3) The majority of respondents responded that both price and vendor location influence how much local and/or organic food they consume (72% and 70% for price and location, respectively). (See figure 4-4)

It was possible to collect some data regarding student's on-campus food consumption behaviors. The results show that 42% of respondents typically bring their own food to campus. 20% typically purchase food from Tim Horton's/Second Cup, 13% from Pete's to Go, 9% from Subway, 7% from a dining hall, 5% from the Loaded Ladle, and 4% other fast food. In the future, it would be good to look at what influences students on-campus food consumption behaviors. For example, both Tim Horton's and Second Cup have longer business hours than Pete's to Go or the Loaded Ladle, which could consequently increase the amount of consumption at Tim Horton's/Second Cup. (See figure 4-5)

5.3 CONSIDERATION OF THE FINDINGS IN LIGHT OF EXISTING RESEARCH STUDIES

These findings are important because they will not only help in Dalhousie's green campus initiative, but also could also be useful for other universities in their similar undertakings. The existing study by Jackson & Michaelis (2003), discusses that sustainable consumption can only be possible if the green activities are being taken into consideration. The campus research findings also support these statement and discussions. Williams Christine., (February 2002), also suggests that organic food is important for health as well as making a more sustainable environment. The present study deals with understanding from the student point of view whether or not organic food is good, if this will impact college students, and what impact this could have on their food habits and costs. These studies directly and indirectly help the existing research in terms of understanding perceptions about organic food, proximity and availability of food, and if this links to a

sustainable environment. This is reason that these findings can be useful to the existing researches.

5.4 IMPLICATIONS OF RESEARCH

This study concludes that in general, students at Dalhousie do care about where food at on-campus vendors is sourced. The majority of respondents consume 25% or more local and/or organic food. Given this, it can be inferred that local and/or organic options are favorable to Dalhousie Students.

5.5 FINDINGS THAT FAILED TO SUPPORT HYPOTHESIS

Due to the aforementioned limitations and delimitations (section 3.4), there is a potential for some of the analyses that that would have been good to execute and include to be skewed or unrepresentative, and thus it is difficult to make conclusive statements regarding some findings that could be considered important if it had been possible get a better representation with respect to some variables. An example of this is the unequal proportion of respondents who live on campus (11 respondents) versus those who live off campus (99 respondents). Considering the scope of this project was food services at Dalhousie, it would have been ideal to get more respondents who live on campus.

It also would have been ideal to get a more equal representation from different departments/faculties. In total, 110 students responded to the online survey. 1 respondent is majoring in Anthropology, 12 in Architecture/Planning, 4 in Biology, 23 in Earth Sciences, 13 in Economics, 6 in Engineering, 16 in Environmental Science, 8 in Nursing, 20 in "Other", 1 in "Other Health Profession", 4 in Sustainability, and 2 have not declared their major. Grouping those by faculty gives 12 in the Faculty of Architecture/Planning, 1 in the Faculty of Arts and Social Science, 6 in the Faculty of Engineering, 21 in the Faculty of Health Professions, 56 in the Faculty of Science, and 4 in the College of Sustainability. The anticipation was that a trend would be observable as a function of program of study, but due to about half of the respondents being in the Faculty of Science, it would not be accurate to make any conclusions based on declared major. Not surprisingly, no Environmental Science or Sustainability students responded less than neutral about caring where Dalhousie Food Services sources their food. (See Figure 4-6 & 4-7)

In the initial planning of this study, it was expected that trends based on demographic would be observed. However due to the time constraints and the subsequent disproportionate representations mentioned above it is not possible to conclusively confirm trends based on demographics such as study programs or proximity to grocers.

Given that organic/local food is oftentimes more expensive, it was also expected that respondents in the higher income bracket would consume more local/organic. This was not the case. Out of 110 respondents, 2 people claimed to eat 100% local and/or organic food, one of whom claimed an income of less than \$5,000 per annum, and the other between \$10,000 and \$15,000. However, it is important to note that different respondents may have been considering different factors, such as student loans or grants, allowance from family, etc., when responding to the question about income.

6. CONCLUSION:

6.1 RECOMMENDATIONS FOR ACTION

Given that so many students responded that they do care about where their food is sourced and whether it is organic, we recommend that food services look for more places to buy local and organic food. Students are purchasing both of these products enough that it is likely that students will purchase them if they are available. If there are concerns about the amount of money or availability of these products, then we recommend buying local food over organic. Our respondents were found to purchase more local food than organic, if they were buying only one or the other. When asked, two thirds of respondents stated that food from within the province is how they define local food, therefore Food Services should be looking for farms within Nova Scotia to purchase from.

6.2 RECOMMENDATIONS FOR FURTHER RESEARCH

For further research we recommend that Food Services specifically look at the opinions of students who live in residence. Only 10% of respondents to our survey lived on campus, which was not enough to get a representative sample or draw any decisive conclusions. Understanding how people who live on campus think about organic and local food would have implications for the food served in the meal halls, so it is important to gain a comprehensive knowledge about them.

We also recommend researching how students feel about the options currently available on campus. It would be important to know what students know about food service's current selection of local and organic food and whether they are aware of when such food is available. This has potential implications for the where students choose to eat and how often they bring food from home.

6.3 MAJOR CONTRIBUTION OF THE STUDY

This study shows that students care about whether their food is organic or local. Price is a concern for students, and does affect how much local and organic food they buy. Despite this, out of our respondents, 86% still purchased some local and organic food regularly.

7. ACKNOWLEDGMENTS

We would like to thank the support of our professor, Dr. Hendricus Van Wilgenburg, as well as our T.A. and mentor Jessica Ellis.

8. REFERENCES:

- Arias, C. (2009). Sustainable dining: Colleges and corporations take a fresh approach to food. *Sustainability: The Journal of Record*, 2(4), 215-220. doi: 10.1089/SUS.2009.9858
- Barlett, P. F. (2011). Campus sustainable food projects: critique and engagement. *American anthropologist*, 113(1), 101-115. DOI: 10.1111/j.1548-1433.2010.01309.x
- Dahm, M. J., Samonte, A. V., Shows, A. R. (2009) Organic foods: Do eco-friendly attitudes predict eco-friendly behaviours? *Journal of American College Health*. 58(3), 195-202.
- Dalhousie University. (n.d.). *Food Services*. Retrieved April 2014, from Dalhousie University: <http://www.ancillaries.dal.ca/default.asp?mn=1.7.53>
- Jackson, T., & Michaelis, L. (2003). Policies for sustainable consumption. *London: Sustainable Development Commission*.
- Kirby, S. L., Greaves, L., & Reid, C. (2006). *Experience research social change: Methods beyond the mainstream*. North York: University of Toronto Press.
- Klassen, K., Trybus, E., Kumar, A. (2005). Planning food services for a campus setting. *International Journal of Hospitality Management*. 24(4), 579-609. DOI: <http://dx.doi.org/10.1016/j.ijhm.2005.01.001>
- Little, R., Maye, D., & Ilbery, B. (2010). Collective purchase: moving local and organic foods beyond the niche market. *Environment and planning. A*, 42(8), 1797.
- Liu, M.E. (2007). U.S. college students' organic food consumption behavior. *Texas Tech University*, 13-70. DOI10.1068/a4262
- Ruiz de Maya, S., Lópe-López, I., Luis Munuera, J. (2011) Organic food consumption in Europe: International segmentation based on value system differences. *Ecological Economics*. 70, p. 1767-1775. doi: 10.1016/j.ecolecon.2011.04.019
- Sangkumchaliang, P, and WC.Huang. 2010. Consumers' Perception and Behavior of Organic Food in Chiang Mai, Thailand. Department of Topical Agricultural and International Cooperation, National Pingtung University of Science and Technology, Pingtung: 81.

Seyfang, G. (2006). Ecological citizenship and sustainable consumption: Examining local organic food networks. *Journal of rural studies*, 22(4), 383-395. DOI: 10.1016/j.jrurstud.2006.01.003

Williams, C. M. (2002). Nutritional quality of organic food: shades of grey or shades of green?. *Proceedings of the Nutrition Society*, 61(01), 19-24. DOI: 10.1079/PNS2001126

Wright, K. B. (2005), Researching Internet-Based Populations: Advantages and Disadvantages of Online Survey Research, Online Questionnaire Authoring Software Packages, and Web Survey Services. *Journal of Computer-Mediated Communication*, 10(00). DOI: 10.1111/j.1083-6101.2005.tb00259.x

9.APPENDICES:

9.1 PRELIMINARY PROPOSAL

Dalhousie Students and Local and Organic Food

Preliminary Proposal:

Victoria Desjardins

Breaghna Cameron

Miriam Karrel

Kari Jones

Bocheng Xu

Introduction:

The overarching theme of this project is based off of the Greening of Dalhousie Campuses across Halifax and Truro. This project aims to look at the relationship between students concerns about local and organic food and their accessibility to such food. The proposed study will be a preliminary look into possible connections between students, demographics, income and local/organic food. The project is intended to provide information on these topics in hopes of increasing the availability and student purchase of local and organic food on Campus. This project will look at a small sample of Dalhousie Students and compare and contrast to existing literature on similar studies.

Project Definition:

Purpose of the Research

Research Problem:

How much do students at Dalhousie University care about local and organic food? To what extent is their willingness to purchase it based on accessibility* and/or demographics**?

**Accessibility is defined for this project as cost and geographical proximity to suitable food vendors.*

*** Demographic refers to factors such as provenance, faculty/program of student, personal income/budget, etc.*

Objective:

The primary objective of this study is to help understand what students' opinions are regarding local and organic food and to decide whether students will support food services in a move to use more local and/or organic foods on campus. We will be considering temporal, geographic, and conceptual factors throughout the study.

This topic is worth understanding because it can help to gain a better understanding of student preferences and determine what factors, demographic or accessibility-related, contribute to student opinions and actions. This can provide insight to the potential differences between perceived preferences and actual behaviour. The study can further be used to assess the adequacy of current on-campus food selection, and determine where improvements are most necessary or desired. It could provide a better guide on where to effectively and efficiently invest resources with respect to food services for optimal reception and utilization of said services by the student population.

The study will provide important insight to student values with respect to food and their opinions regarding on-campus food services. Ideally, spatial or demographic trends will be observed. For example, we would like to observe how much of a role food cost plays, as well as the influence of proximity from an individual's residence to a "suitable" food vendor, possibly comparing it with their normal means of transportation. Another trend we anticipate is differences between typical responses from students of different faculties and programs. For example, we would expect to see more respondents from the Sustainability program in favour of local and organic food.

We feel that this study will contribute to the greening of Dalhousie campuses by demonstrating that students here generally have a preference for sustainably sourced foods, thus serving as a motivation for positive changes to on-campus food-services. Such changes could include facilitation of expanding the availability (such as more selection, more often) of services such as the weekly farmer's market held in the Student Union Building. We ultimately hope that this study will help identify barriers in "green-eating" habits for students and serve as a catalyst for the greening of Dalhousie's on-campus food services.

Background and Rationale :

This study will collect information surrounding the food purchasing habits of students at Dalhousie University to examine the importance of organic and local food availability on the Dalhousie campus. Dalhousie University's Food Services Department can apply the general information provided on previous work, and the specific student

demographic information provided in this study to customize the availability of organic and local food on the university campus.

Previous articles have examined the general relationship between student demand of organic food and its availability on university campuses. An article by Klassen et al. (2005) on planning food services on university campuses highlighted the correlation between food services and quality of life on campus. The authors claim that students have an overall dissatisfaction with the food available on campus for reasons such as poor selection and limited healthy options. However, some universities (such as the University of Wisconsin at Madison) are introducing more organic and locally grown produce on their menus (Klassen et al., 2005). A number of colleges in the United States, including Yale, are even creating organic mini farms on or near campus (Liu, 2007). Produce from the Yale Farm shows up at special events on campus and is sold weekly at the New Haven Farmer's Market. Yale Farm is run by the Yale Sustainable Food Project; a university group made up of students, faculty and staff. Their goal is for Yale to serve 100% sustainable and organic food, and progress has been rapid. Five years ago, it served almost no organic food. Four years ago, it began to serve some organic food in one dining hall. By last year, organic entrees were offered at least once daily at all dining halls. This year, it's two meals daily (Liu, 2007). This shows that it is possible to serve local and organic food in a campus setting on a larger scale.

Students have protested universities that have tried to allow the opening of fast-food chains on campus (as was the case at Berkley, when a Panda Express was proposed to open) (Arias, 2009). So there is a known trend in university and college students who are concerned about where their food comes from and how it is produced. Many colleges in the United States of America are reworking policies on how their food services obtain food for the cafeterias and meal halls, and some colleges are devoting a certain percentage of their food budgets to buying from local farms or producers (Arias, 2009). Dalhousie would not be alone in their work to switch towards more local and sustainable options for food services.

Significant studies in this area have examined whether student awareness and attitude on organic food relates to their food consumption, and how they feel about having organic options available to them on campus (Dahm et al., 2009). The results of this study showed that attitude directly correlates with consumption choices and students felt positive about having organic options available on campus. The same study from Dahm et al. (2009) showed that taste and price held an additional influence over consumption choices. Related surveys have shown a demand for increased emphasis on the use local food on university campuses (Arias, 2009).

Organic food price differences remain the major barrier for most students to keep them away from buying. The price associated with purchasing organic food can be so high that only people earning high-incomes are able to do so (Sangkumchaliang, 2010). Most students are not able to pay a premium for organic goods, but they would be willing to buy them if there was a way to make it more affordable (Sangkumchaliang, 2010). Other reasons listed were: lack of availability and interest, doubts about organic origin, poor taste and appearance (Sangkumchaliang, 2010). Often there is desire, but the low income levels of many students can be a barrier to eating in the way that they would like to.

The current literature is not specific to Dalhousie University. In addition, while studies have indicated that price of organic food has influence over student consumption choices, an examination of student consumption has not been studied and been further related to student income. Studies have discussed students' attitude towards organic food availability on campus, and surveys conducted in previous studies have divided students into undergraduate and graduate students, while also including faculty and staff. This study focuses exclusively on the student body and the survey separates each student by faculty (e.g. anthropology, biology, engineering, etc), to further determine whether there is a high correlation between the faculty a student belongs to and their food purchasing priorities. Our study will also include the collection of postal code from each person completing the survey to demonstrate the relative distance to farmers' markets and local grocers using Global Information Systems (GIS), using this information to determine the average distance people travel to buy local/organic food.

Proposed Research Methods:

In order to complete this study data must be collected from diverse sample of Dalhousie University students. The sample must be diverse in order to seek trends between demographics, students' majors, income and the types of foods students are buying and eating. This project will take on qualitative and quantitative approach for investigating the research problem, therefore there will be a range of data in the final outcome. Statistical data will be collected from a range of university students at Dalhousie university based on their choices of organic and local food, average money spent on such food and potential demographics affecting these choices. Survey results will also show qualitative findings in the willingness to buy local or organic food, and feelings or concerns regarding the source of their food.

The proposed study focuses on the opinion of students at Dalhousie and how income affects their choice of food. Because a lot of the necessary information needed to study these opinions in qualitative data it is imperative to address students at Dalhousie. Considering the sample size should be relatively large we also feel that it is more effective

to gather qualitative and quantitative data through surveys to address a larger population of Dalhousie students. The proposed method of data collection will be through short surveys. The survey will be completed from a sample of approximately 100-150 Dalhousie University students from various backgrounds including:

- Planning/Architecture
- Earth Sciences
- Biology
- Anthropology
- Engineering
- Economics

The survey will examine the various backgrounds of the respondents to know whether we have received a large and diverse enough sample of the entire Dalhousie population. The surveys will aim to collect quantitative data of trends, attitudes, and/or opinions of the sample in question. The survey will be cross-sectional in that the survey will be completed only once, at one period of time, rather than comparing the results over-time. The population being surveyed will be collected by each group member reaching out to their particular faculty and related faculty. The faculty will be selected, but the respondents within the population will be chosen at random; groups of individuals in the population are represented in the sample (i.e. faculty). The survey will be created through an online survey generator [kwiksurveys.com] and distributed through email and online social media such as Facebook (Draft sample questions included in Appendices). The key elements the survey will aim to collect include:

- Income information
- Employment
- Demographics
- Degree major/faculty
- Where students get food/ eat on campus
- Whether or not they care about organic and local food
- Do students worry about where their food comes from

There will also be research and data collected from other research similar to this study for comparison. Texts will be examined on other similar research projects and analyzed to see if our results match larger trends.

Once the surveys are completed from the desired sample size they will be analyzed by inputting the data into tables and graphs to compare the results and form conclusions. Tables and graphs will be the most effective way to see trends in the data. Rudimentary

statistical analysis will also be done on some of the results. Research completed from other sources will be analyzed to help back-up and explain the potential trends in our results.

The proposed research project will be completed over a short period of time and therefore there may be potential limitations to the research. The data collection from the surveys will be done over a two week period and therefore it may be difficult to collect the desired amount of completed surveys to have an adequate sample size. The project aims to collect data from a variety of Dalhousie university students but because of the limited time it may be difficult to receive a diverse sample. The study will also be looking at a variety of students with different majors and considering the sample size it may be difficult to observe trends between students' major and their thoughts about organic and local food.

Tentative schedule:

Most work will be completed as a group. Each group member will be responsible for data collection in their own faculty/related faculty as well as writing and editing final reports and proposals. Each group member will be responsible for certain task where their strengths are more relevant. For example:

TASK	TARGET COMPLETION DATE
Phase 1: Preliminary Work	
1.Submission of Project proposal	Thursday, February 27th, 2014
2. Project approval	Tuesday, March 4th, 2014
3. Get in touch with Food Services Rep.	Thursday, February 27th, 2014
4. Completion of Survey	Tuesday, March 4th, 2014
5. Ethics Review Submission	Thursday, February 27th, 2014
Phase 2: Data Collection	
1. Meet with Food Services Rep.	Thursday, March 6th, 2014
2. Distribute surveys	Friday , March 7th, 2014
3. Research other studies on the topic	Tuesday, March 11th, 2014
4. Collect and Organize Data	Tuesday, March 18th, 2014
Phase 3: Final Work	
1. Final Draft of report	Tuesday, April 1st, 2014
2. Review with TA	Tuesday, April 1st, 2014
3. Edit	Tuesday, April 8th, 2014
4. Peer Assessment	No later than Friday, April 11th, 2014
5. Submit Report	No later than Friday, April 11th, 2014

- Victoria:
 - GIS mapping and for postal codes/demographic information
 - Survey distribution/ analysis
 - writing and editing
- Kari:
 - Writing and editing
 - Help with GIS/Visuals
 - Survey distribution /analysis
- Miriam:
 - Writing and editing
 - Survey distribution/ analysis
- Breaghn:
 - Writing and editing
 - Survey development
 - Survey distribution/ analysis
- Bocheng:
 - Writing and editing
 - Survey distribution/ analysis

Budget:

There will be no major costs associated with this project. Surveys will be completed online through a database and research will be conducted through Dalhousie University Library and online resources. The database being used will require a payment of \$9.00 and therefore, there will be application for funding through Dalhousie Food Services to cover the costs.

Project Deliverables:

The deliverables for this project will be a report on students' opinions on organic and/or local food and willingness to purchase it at a higher cost than normal. It will also include information on which demographics are more willing to purchase these products based on the information we gather. We understand that our findings may be too narrow or concentrated in one particular group to be able to extrapolate to the entire Dalhousie student community, so we will be including information on the number of respondents, and their faculty, age-range, gender, income level, and place of residence. At this point we do not know which, if any, of these groups may have a correlational relationship, so we cannot say at this time how much these will affect the results. We also suspect that the student's understanding of local and/or organic food, as well as their concern about these concepts will affect their willingness to purchase these products, so this is another area we will be looking into closely.

All of this analysis of the demographic relationships is to see if it is possible to extrapolate our findings based on the demographics of Dalhousie university at large, and to see if our results match larger patterns seen in other studies on similar topics. However, it is important that this is done carefully, because our project is limited in scope due to time and resource constraints, so we may not be able to get accurate information for all possible groups at Dalhousie. This will be commented on in our final report, in the evaluation of our project and the suggestions for possible further research.

Project Communication Plan:

We will communicate our findings to both our supervisor and food services in a report. This is so that we can help food services make informed choices about whether and how much they should increase their purchasing of local and/or organic food, and where it would be most effectively made available. Our data analysis will be using mostly quantitative methods, looking for trends in willingness to purchase local and/or organic food based on a variety of factors, as well as an overall willingness to purchase these products in our entire sample. We will be examining the results compared to the respondents' age, gender, faculty, income, as well as knowledge and concern about local and/or organic food.

The survey will be available online on the seventh of March, 2014, at which point we will be inviting students to participate through email, various social media platforms and in person in our classes. The survey will close on the seventeenth of March, 2014, and we will begin to analyze the data the next day. We chose to do the survey online because we wanted to be able to reach as many students as possible, and this will be easier than if we are confined to one physical space at a given time. We also feel that the amount of time given will be enough for a large number of students to complete it. We will be able to send out a first "blast" to get the information out, and then send out a reminder a week later with time to spare for people to complete their survey.

Once we have collected our data, we will be graphing our results. First we will look at the overall willingness of our respondents to purchase organic and/or local food. We will then individually compare respondents' willingness to purchase organic and/or local food with a variety of possible variables and see if we can find any indicators of increased likelihood of purchasing these products. We intend to use as much visual representations as possible to make the data easy to understand and to highlight the trends in the simplest way possible. We will also be mapping where our respondents live using their postal codes and GIS software, to see how much their proximity to places where local and/or organic food is available affect whether they purchase it.

Our goal is to have 100 to 150 completed surveys to analyze. We also hope to have a cross section along faculties, programs, and year of study. If we can have this then we can say that our project was successful.

Conclusion:

With all of these, we feel confident that we can provide useful information to food services on what students' opinions are on local and/or organic food, whether they are willing to pay more for it, and what factors may affect the results.

References:

Arias, C. (2009). Sustainable dining: Colleges and corporations take a fresh approach to food. *Sustainability: The Journal of Record*, 2(4), 215-220. doi: 10.1089/SUS.2009.9858

Dahm, M. J., Samonte, A. V., Shows, A. R. (2009) Organic foods: Do eco-friendly attitudes predict eco-friendly behaviours? *Journal of American College Health*. 58(3), 195-202.

Klassen, K., Trybus, E., Kumar, A. (2005). Planning food services for a campus setting. *International Journal of Hospitality Management*. 24(4), 579-609. doi: <http://dx.doi.org/10.1016/j.ijhm.2005.01.001>

Liu, M.E. (2007). U.S. college students' organic food consumption behavior. *Texas Tech University*, 13-70.

Sangkumchaliang, P, and WC.Huang. 2010. Consumers' Perception and Behavior of Organic Food in Chiang Mai, Thailand. Department of Topical Agricultural and International Cooperation, National Pingtung University of Science and Technology, Pingtung: 81.

Appendices:

Survey Questions:

1. Where do you shop for food?

- a. Sobeys/Superstore
- b. Local grocers (including Pete's or other small and independent local stores)
- c. Farmers markets/ roadside stands
- d. Mostly eat out

2. Where do you eat on campus?

- a. Petes to go
- b. Loaded ladle
- c. Subway
- d. Tim Hortons/Second cup
- e. Meal hall
- f. Other fast food
- g. Bring my own food

- 3. I care about and am interested in where Dalhousie food services, and other Dalhousie food vendors, sources their food.**
- strongly disagree
 - disagree
 - neutral
 - agree
 - strongly agree
- 4. Do you pay attention to/notice where your food comes from? Specifically, whether or not it is organic or local? Or are your food purchases based solely on price, taste and/or need?**
- Yes, I do pay attention.
 - No, I buy food based on price, taste and/or need. (Please select the bottom multiple choice option for questions 5 – 13)
- 5. Do you buy organic and local food?**
- Organic
 - Local
 - Both local and organic
 - Neither
- 6. If you buy local, what type of local foods do you buy?**
- Produce
 - Dairy
 - Meat (from a deli or butcher section)
 - Packaged food
 - All of my food
 - I don't buy local food
- 7. If you buy organic, what type of organic foods do you buy?**
- Produce
 - Dairy
 - Meat (from a deli or butcher section)
 - Packaged food
 - All of my food
 - I don't buy organic
- 8. Approximately what percentage of the food you eat is local and/or organic?**
- 100%
 - 75%
 - 50%
 - 25%
 - 0%
- 9. Please choose the option you think best defines *organic* food:**

- a. Chemical-free pesticide methods (Use of integrated pest management and natural pest deterrents)
- b. Chemical-free herbicide methods (Natural weeding methods, etc)
- c. Chemical-free fertilizer methods (Complementary planting, etc)
- d. All of the above
- e. Other
- f. I don't know

10. Please choose the option you think best defines *local* food:

- a. Within my community
- b. Within my province
- c. Within my country
- d. Other
- e. I don't know

11. Does location to grocery store/market affect what type of food you buy? (i.e. do you travel farther to shop local/organic)

- a. Yes
- b. No
- c. Sometimes

12. Organic and local food can be more expensive. Does price of food affect the type of food you buy?

- a. Price does determine my food purchases (local/organic vs. other)
- b. Price does not matter

13. What is your current major at Dalhousie?

- a. Anthropology
- b. Architecture/Planning
- c. Biology
- d. Earth Sciences
- e. Economics
- f. Engineering
- g. Environmental Science
- h. Sustainability
- i. Nursing
- j. Other Health Professions
- k. Other
- l. Undeclared

14. Are you a full time or part time student?

- a. Part time
- b. Full time

15. Which campus do you spend most of your time at for classes/studying/activities?

- a. Studley
- b. Carlton
- c. Sexton
- d. Truro

16. Do you live on campus or off campus?

- a. On
- b. Off

17. Please include your postal code here: _____

18. What is your gender?

- a. Male
- b. Female
- c. Transgender
- d. Non-binary
- e. Rather not say

19. Are you an international student or a Canadian Citizen?

20. Employment:

- a. Part-time year round
- b. Full-time year round
- c. Only employed in the summer/work terms
- d. Unemployed

21. How much on average do you make in a year from employment?

- a. Under 5,000
- b. 5,000 to 10,000
- c. 10,000 to 15,000
- d. 15,000 plus

22. Do you pay for your own food or are you supported by family/relatives/other?

- a. Pay on your own (using employment income, student loan and/or student bursaries/scholarships)
- b. Supported
- c. Both

Consent Form for Survey:

Date: February, 2014

Study Name: Students and Local/Organic Food

This project will be completed by Victoria Desjardins ,Breagh Cameron ,Miriam Karrel, Kari Jones and Bocheng Xu. This project will be completed for the SUST/ENVS 3502 class at Dalhousie University. The project will be completed under the supervision of Dr. Hendricus Van Wilgenburg (hwilgenb@dal.ca) and Jessica Ellis (jess.ellis121@gmail.com).

Purpose of the Research:

You are being invited to take part in this research study because we want to understand what students' opinions are on local and/or organic food. This project is based off of the Greening of Dalhousie Campuses across Halifax and Truro. This project aims to look at the relationship between students concerns about local and organic food and their willingness to pay for such food. The proposed study will be a preliminary look into possible connections between students, demographics, income, and local and/or organic food. The project is intended to provide information on these topics to inform food services on the possible success of increasing their purchasing and distribution of local and organic food on campus. The goal is to find out if students want more local and/or organic food available on campus, and the results will be presented to Dalhousie's food services department.

The research will be comprised of a short survey that should take no longer than 10-15 minutes. The survey will ask simple questions regarding your income, major and food choices and requires no previous knowledge of local or organic type food.

We do not foresee any risks or discomfort from your participation in the research. Questions such as income, country origin and approximate location will be asked in the survey but the results will remain anonymous.

Your participation in the study is completely voluntary and you may choose to stop participating at any time. Your decision not to volunteer will not influence the nature of your relationship and academic standing with Dalhousie University either now, or in the future.

You can stop participating in the study at any time, for any reason, if you so decide. If you decide to stop participating in the study (i.e. choose to stop and leave the survey incomplete) there will be no penalty. Your decision to stop participating, or to refuse to answer particular questions, will not affect your relationship with the researchers, Dalhousie University, or any other group associated with this project. In the event you withdraw from the study, all associated data collected will be immediately destroyed wherever possible.

Unless you choose otherwise, All information you supply during the research will be held in confidence as we do not require your name and or banner number , therefore your name will not appear in any report or publication of the research. Data you submit to us will remain confidential and will not be able to be traced back to you. Only research staff will have access to this information. Confidentiality will be provided to the fullest extent possible by law.

If you have questions about the research in general or about your role in the study, please feel free to contact Dr. Hendricus A. Van Wilgenburg either by telephone at (902) 678-3844, or by e-mail hwilgenb@dal.ca. This research has been reviewed and approved by the Dalhousie University's Environmental Science Program Ethics Review Committee and conforms to the standards of the Canadian Tri-Council Research Ethics guidelines. If you have any questions about this process, or about your rights as a participant in the study, please contact Research Ethics, Dalhousie Research Services, 5th Henry Hicks Building, Rm 231, Dalhousie University, PO Box 15000, Halifax, Nova Scotia B3H 4R2 (telephone 1.902.494.3423 or e-mail ethics@dal.ca).

By entering this survey you are consenting to participate in the Students and Local/Organic Food study conducted by SUST/ENVS 3502 Students. You are stating that you have understood the nature of this project and wish to participate. You are stating that you are not waiving any of your legal rights by continuing to the survey. This electronic signature indicates your consent

9.2 SURVEY QUESTIONS

- 1. Where do you shop for food?**
 - a. Sobeys/Superstore
 - b. Local grocers (including Pete's or other small and independent local stores)
 - c. Farmers markets/ roadside stands
 - d. Mostly eat out

- 2. Where do you eat on campus?**
 - a. Petes to go
 - b. Loaded ladle
 - c. Subway
 - d. Tim Hortons/Second cup
 - e. Meal hall
 - f. Other fast food
 - g. Bring my own food

- 3. I care about and am interested in where Dalhousie food services, and other Dalhousie food vendors, sources their food.**
 - a. strongly disagree
 - b. disagree
 - c. neutral
 - d. agree
 - e. strongly agree

- 4. Do you pay attention to/notice where your food comes from? Specifically, whether or not it is organic or local? Or are your food purchases based solely on price, taste and/or need?**
 - a. Yes, I do pay attention.
 - b. No, I buy food based on price, taste and/or need. (Please select the bottom multiple choice option for questions 5 – 13)

- 5. Do you buy organic and local food?**
 - a. Organic
 - b. Local
 - c. Both local and organic
 - d. Neither

- 6. If you buy local, what type of local foods do you buy?**
 - a. Produce
 - b. Dairy
 - c. Meat (from a deli or butcher section)
 - d. Packaged food
 - e. All of my food
 - f. I don't buy local food

- 7. If you buy organic, what type of organic foods do you buy?**

- a. Produce
 - b. Dairy
 - c. Meat (from a deli or butcher section)
 - d. Packaged food
 - e. All of my food
 - f. I don't buy organic
- 8. Approximately what percentage of the food you eat is local and/or organic?**
- a. 100%
 - b. 75%
 - c. 50%
 - d. 25%
 - e. 0%
- 9. Please choose the option you think best defines *organic* food:**
- a. Chemical-free pesticide methods (Use of integrated pest management and natural pest deterrents)
 - b. Chemical-free herbicide methods (Natural weeding methods, etc)
 - c. Chemical-free fertilizer methods (Complementary planting, etc)
 - d. All of the above
 - e. Other
 - f. I don't know
- 10. Please choose the option you think best defines *local* food:**
- a. Within my community
 - b. Within my province
 - c. Within my country
 - d. Other
 - e. I don't know
- 11. Does location to grocery store/market affect what type of food you buy? (i.e. do you travel farther to shop local/organic)**
- a. Yes
 - b. No
 - c. Sometimes
- 12. Organic and local food can be more expensive. Does price of food affect the type of food you buy?**
- a. Price does determine my food purchases (local/organic vs. other)
 - b. Price does not matter
- 13. What is your current major at Dalhousie?**
- a. Anthropology
 - b. Architecture/Planning
 - c. Biology
 - d. Earth Sciences

- e. Economics
- f. Engineering
- g. Environmental Science
- h. Sustainability
- i. Nursing
- j. Other Health Professions
- k. Other
- l. Undeclared

14. Are you a full time or part time student?

- a. Part time
- b. Full time

15. Which campus do you spend most of your time at for classes/studying/activities?

- a. Studley
- b. Carlton
- c. Sexton
- d. Truro

16. Do you live on campus or off campus?

- a. On
- b. Off

17. Please include your postal code here: _____

18. What is your gender?

- a. Male
- b. Female
- c. Transgender
- d. Non-binary
- e. Rather not say

19. Are you an international student or a Canadian Citizen?

20. Employment:

- a. Part-time year round
- b. Full-time year round
- c. Only employed in the summer/work terms
- d. Unemployed

21. How much on average do you make in a year from employment?

- a. Under 5,000
- b. 5,000 to 10,000
- c. 10,000 to 15,000
- d. 15,000 plus

22. Do you pay for your own food or are you supported by family/relatives/other?

- a. Pay on your own (using employment income, student loan and/or student bursaries/scholarships)
- b. Supported
- c. Both

9.3 ETHICS REVIEW (ATTACHED ON NEXT PAGE)

UNDERGRADUATE STUDENT SUBMISSION
RESEARCH ETHICS BOARDS
DALHOUSIE UNIVERSITY

This form should be completed using the guidance document http://researchservices.dal.ca/research_7776.html

SECTION 1. ADMINISTRATIVE INFORMATION


[File No: _____]
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Indicate the Research Ethics Board to review this research:

Health Sciences OR Social Sciences and Humanities

Project Title: Students and Local/Organic Food

1.1 Student researcher: Victoria Desjardins, Breaghn Cameron, Miriam Karrel, Kari Jones, Bocheng Xu			
Department	College of Sustainability		
Degree program	ESS		
Email	Kr854354@dal.ca	Phone	-
I agree to conduct this research following the principles of the Tri-Council Policy Statement <i>Ethical Conduct for Research Involving Humans</i> and consistent with the University Policy on the <i>Ethical Conduct of Research Involving Humans</i> .			
Student signature:			

1.2 Supervisor Name: Hendricus A. Van Wilgenburg			
Department	Environmental Science		
Email	hvanwilgenber@gmail.com	Phone	902.229.4888
I have reviewed the attached ethics application prior to its submission for ethics review, including the scientific/scholarly methods of the research project which is described in the ethics application, and believe it is sound and appropriate. I will ensure this research will be conducted following the principles of the Tri-Council Policy Statement <i>Ethical Conduct for Research Involving Humans</i> and consistent with the University Policy on the <i>Ethical Conduct of Research Involving Humans</i> .			
Supervisor signature:		 March 15, 14	

1.3 Department/unit ethics review (if applicable). Minimal risk research only.
This submission has been reviewed and approved by the research ethics committee. Auting name and signature Date of approval:

SECTION 2. PROJECT DESCRIPTION

2.1 LAY SUMMARY

In lay language, briefly describe the rationale, purpose, study population and methods.

This project is to be used as part of the Greening of Dalhousie Campuses across Halifax and Truro. This project aims to look at the relationship between students concerns about local and organic food and their willingness to pay for such food. The proposed study will be a preliminary look into possible connections between students, demographics, income, and local and/or organic food. The project is intended to provide information on these topics to inform food services on the possible success of increasing their purchasing and distribution of local and organic food on campus. The research will be conducted by gathering data using an online survey from a sample of 100-150 Dalhousie students. Data from existing research will also be collected for comparison.

2.2 RESEARCH QUESTION

State the hypotheses, the research questions or research objectives.

How much do students care about local and organic food, and to what extent their willingness to purchase based on cost?

2.3 RECRUITMENT

2.3.1 Describe how many participants are needed and how this was determined.

100-150 Survey participants are needed. This is a feasible number of responses for us to obtain, as it mean each group member will be responsible for getting 20 to 30 responses. We feel this amount will give us good sample based on this calculator (<http://www.raosoft.com/samplesize.html>), given the size of the school (McNutt, 2013, para 3) and the inherent limits we face due to the time available.

2.3.2 Describe recruitment plans and append recruitment instruments. Describe who will be doing the recruitment and what actions they will take, including any screening procedures. Describe any inclusion / exclusion criteria.

Students will be approached through email, social media and in person to complete a voluntary survey through a process of oral informed consent. The only criterion required is their enrollment at Dalhousie University.

2.4 METHODS AND ANALYSIS	
2.4.1	Discuss where the research will be conducted, what participants will be asked to do and the time commitment, what data will be recorded using what research instruments (append copies). Discuss any blinding or randomization measures. Discuss how participants will be given the opportunity to withdraw.
	The research will be conducted via online survey. There will be a preamble explaining what the research is, why we are conducting it, and explaining that it will be anonymous. After they click that, they can close the screen at any time during the survey and the survey will not be used. We will be using multiple-choice questions with a few short (one sentence or less) answer questions. It should take 10 to 15 minutes to complete.
2.4.2	Describe your role in this research and any special qualifications you have that are relevant to this study (e.g. professional experience, methods courses, fieldwork experience).
	We are writing and administering the survey, and analyzing the data. We are all currently in a research methods class in the Faculty of Environmental Science and College of Sustainability. One member has taken a qualitative research methods course previously, as well as worked for a market research company administering surveys over the phone. We will be using GIS software to map respondents' locations, as well as graphing our data to understand what factors are related to students' opinions on organic and/or local food.
2.4.3	Describe plans for data analysis in relation to the hypotheses/questions/objectives.
	We will be doing mostly quantitative analysis of our results. We will be looking at respondents' willingness to purchase organic and/or local food and looking for correlations based on our demographic questions, especially their income levels and sources.
2.4.4	Describe and justify any use of deception or nondisclosure and explain how participants will be debriefed.
	<input checked="" type="checkbox"/> Not applicable
2.4.5	Describe any compensation, reimbursement or incentives that will be given to participants (including those who withdraw).
	<input checked="" type="checkbox"/> Not applicable

2.5 INFORMED CONSENT PROCESS	
Describe the informed consent process (i.e. how and when the research will be described to the prospective participant and by whom, how the researcher will ensure the prospective participant is fully informed of what they will be asked to do). If non-written consent is proposed, describe why and the process. If a waiver of informed consent is sought, address the criteria in the guidance document and TCPS articles 3.7 and/or 5.5. Address how any third party consent (with or without assent) will be managed. Describe any plans for	

ongoing consent, and/or community consent. Discuss how participants will be given the opportunity to withdraw (their participation and/or their data, and any limitations on this).

Append copies of all consent forms or any oral consent script.

2.6 PRIVACY & CONFIDENTIALITY

2.6.1 Describe how data will be stored and handled in a secure manner, how long data will be retained and where, and plans for its destruction.

All data will be received anonymously. Information on approximate location (i.e. postal code) will only be accessible by the researching students and supervisor and will be stored in a password protected admin only part of the survey webserver.

2.6.2 Address any limits on confidentiality, such as a duty to disclose abuse or neglect of a child or adult in need of protection, and how these will be handled. Such limits should be described in consent documents.

Not applicable

2.6.3 Does your use of any survey company or software to help you collect, manage, store, or analyze data mean that personally identifiable information is accessible from outside of Canada?

No

Yes. If yes, describe your use of the company or software and describe how you comply with the *University Policy for the Protection of Personal Information from Access Outside Canada*.

2.6.4 Describe the measures to be undertaken for dissemination of research results and whether participants will be identified (either directly by name or indirectly). If participants will be quoted in reports from the data, address consent for this, including whether quotes will be identifiable or attributed. Describe how participants will be informed of results that may indicate they may be at risk (in screening or data collection), if applicable.

Only the investigators conducting the research will see the raw data. The report analyzing the results will be seen by Professor Hendricus Van Wilgenburg, the TA - Jessica Ellis, and some staff at food services. The surveys will be completed anonymously, so no one will know who the respondents are. We will not be quoting anyone.

2.7 RISK & BENEFIT ANALYSIS

2.7.1 Discuss what risks or discomforts are anticipated for participants, how likely risks are and how risks will be mitigated.

No applicable risk or discomforts. Questions such as income and gender are being asked. Participation in the study is voluntary and but are voluntary and they may withdraw from the survey at any time without penalty, should they feel uncomfortable, and so forth. We will not be asking for the respondents' names. The only identifying information taken, such as their postal codes or faculty, but such will not be enough to identify who is the respondent.

2.7.2 Identify any direct benefits of participation to participants (other than compensation), and the indirect benefits of the study (e.g. contribution to new knowledge)

Participation in this study will contribute to our understanding of students' opinions on local and/or organic food. If there is enough interest in, and willingness to pay for, this food, then food services is likely to increase their use of these products on campus. The findings of this study has the potential to benefit local farmers and by extension the local economy, by purchasing more from them rather than from larger or farther away competitors.

2.8 CONFLICT OF INTEREST

Describe whether any conflict of interest exists for any member of the research team in relation to potential research participants (e.g., TA, fellow students), and/or study sponsors, and how this will be handled.

Not applicable

SECTION 3. APPENDICES

3.1 Appendices Checklist. Append all relevant material to this application. This may include:

- Recruitment Documents (posters, verbal scripts, online postings, any invitations to participate, etc.)
- Screening Documents
- Consent Forms (see section 3.2 below)

- Research Instruments (questionnaires, surveys, interview or focus group questions, etc.)
- Debriefing Forms
- Permission Letters (Aboriginal Band Council, School Board, Director of a long-term care facility)

3.2 Consent Form

Guidance on the information to be provided in the consent form is described in *Guidance for Submitting an Application for Research Ethics Review – Undergraduate Students*, available on the Research Ethics website.

A sample consent form follows and may be used in conjunction with the information in the *Guidance* document to help you develop your consent form. Remember to use clear, simple language (grade 8 comprehension level and no technical jargon or acronyms) in a readable font size.

References:

McNutt, R. (2013, October 31). 18,500 and counting, *Dal News*. Retrieved from:
<http://www.dal.ca/news/2013/10/31/18-500-and-counting.html>

Raosoft (2004). *Sample size calculator*. Retrieved from: <http://www.raosoft.com/samplesize.html>

Directions for survey:

Note: The information you provide in this survey remains confidential and anonymous. Your answers will be used only for statistical information purposes on behalf of Dalhousie University Food Services.

1. Click on the link provided.
2. Select the answer to each question that best represents your current ideas and lifestyle situation. You may only select one.
3. Once you have answered each question, click the submission button at the bottom of the survey.

Survey Questions:

1. Where do you shop for food?

- α. Sobeys/Superstore
- β. Local grocers (including Pete's or other small and independent local stores)
- χ. Farmers markets/ roadside stands
- δ. Mostly eat out

2. Where do you eat on campus?

- α. Petes to go
- β. Loaded ladle
- χ. Subway
- δ. Tim Hortons/Second cup
- ε. Meal hall
- φ. Other fast food
- γ. Bring my own food

3. I care about and am interested in where Dalhousie food services, and other Dalhousie food vendors, sources their food.

- α. strongly disagree
- β. disagree
- χ. neutral
- δ. agree
- ε. strongly agree

4. Do you pay attention to/notice where your food comes from? Specifically, whether or not it is organic or local? Or are your food purchases based solely on price, taste and/or need?

- α. Yes, I do pay attention.
- β. No, I buy food based on price, taste and/or need. (Please select the bottom multiple choice option for questions 5 – 13)

5. Do you buy organic and local food?

- α. Organic
- β. Local
- χ. Both local and organic
- δ. Neither

6. If you buy local, what type of local foods do you buy?

- α. Produce
- β. Dairy
- χ. Meat (from a deli or butcher section)
- δ. Packaged food
- ε. All of my food
- φ. I don't buy local food

7. If you buy organic, what type of organic foods do you buy?

- α. Produce
- β. Dairy
- χ. Meat (from a deli or butcher section)
- δ. Packaged food
- ε. All of my food
- φ. I don't buy organic

8. Approximately what percentage of the food you eat is local and/or organic?

- α. 100%
- β. 75%
- χ. 50%
- δ. 25%
- ε. 0%

9. Please choose the option you think best defines organic food:

- α. Chemical-free pesticide methods (Use of integrated pest management and natural pest deterrents)
- β. Chemical-free herbicide methods (Natural weeding methods, etc)
- χ. Chemical-free fertilizer methods (Complementary planting, etc)
- δ. All of the above
- ε. Other
- φ. I don't know

10. Please choose the option you think best defines local food:

- α. Within my community
- β. Within my province
- χ. Within my country
- δ. Other
- ε. I don't know

11. Does location to grocery store/market affect what type of food you buy? (i.e. do you travel farther to shop local/organic)

- α. Yes
- β. No
- χ. Sometimes

12. Organic and local food can be more expensive. Does price of food affect the type of food you buy?

- α. Price does determine my food purchases (local/organic vs. other)
- β. Price does not matter

13. What is your current major at Dalhousie?

- α. Anthropology
- β. Architecture/Planning
- χ. Biology
- δ. Earth Sciences
- ε. Economics
- φ. Engineering
- γ. Environmental Science
- η. Sustainability
- ι. Nursing
- φ. Other Health Professions
- κ. Other
- λ. Undeclared

14. Are you a full time or part time student?

- α. Part time
- β. Full time

15. Which campus do you spend most of your time at for classes/studying/activities?

- α. Studley
- β. Carlton
- χ. Sexton
- δ. Truro

16. Do you live on campus or off campus?

- α. On
- β. Off

17. Please include your postal code here: _____

18. What is your gender?

- α. Male
- β. Female
- χ. Transgender
- δ. Non-binary
- ε. Rather not say

19. Are you an international student or a Canadian Citizen?

20. **Employment:**
- α. Part-time year round
 - β. Full-time year round
 - χ. Only employed in the summer/work terms
 - δ. Unemployed
21. **How much on average do you make in a year from employment?**
- α. Under 5,000
 - β. 5,000 to 10,000
 - χ. 10,000 to 15,000
 - δ. 15,000 plus
22. **Do you pay for your own food or are you supported by family/relatives/other?**
- α. Pay on your own (using employment income, student loan and/or student bursaries/scholarships)
 - β. Supported
 - χ. Both



Oral Informed Consent Form

Date: February, 2014

Study Name: Students and Local/Organic Food

This study is being conducted by [Victoria Desjardins](#), [Breaghn Cameron](#), [Miriam Karrel](#), Kari Jones and Bocheng Xu. The study is a course-based project for SUST/ENVS 3502 at Dalhousie University. The project will be completed under the supervision of Dr. Hendricus Van Wilgenburg (hwilgenb@dal.ca) and Jessica Ellis (jess.ellis121@gmail.com).

Purpose of the Research:

You are being invited to take part in this research study to understand what students' opinions are about local and/or organic food. This project is based on the Greening of Dalhousie Campuses across Halifax and Truro. This project aims to look at the relationship between students concerns about local and organic food and their willingness to pay for such food. The proposed study will be a preliminary look into possible connections between students, demographics, income, and local and/or organic food. The project is intended to provide information on these topics to inform food services on the possible success of increasing their purchasing and distribution of local and organic food on campus. The goal is to find out if students want more local and/or organic food available on campus, and the results will be presented to Dalhousie's food services department.

The research will be comprised of a short survey that should take no longer than 10-15 minutes of your time. The survey will ask simple questions regarding your income, major and food choices and requires no previous knowledge of local or organic type food.

We do not foresee any risks or discomfort from your participation in the research. All of the data will remain confidential such as income, country origin, and approximate location, and you will remain anonymous.

Your participation in the study is completely voluntary and you may choose to withdraw from the study at any time, without penalty. Your decision to withdraw will not influence the nature of your relationship and academic standing with Dalhousie University either now, or in the future.

You may not benefit directly from this study. Alternatively, your participation may benefit others in terms of a wider range of food options and/or benefit the local economically.

You may choose to withdraw from the study at any time, for any reason, if you so decide. If you decide to stop participating in the study (i.e. choose to stop and leave the survey before completion) there will be no penalty. Your decision to stop participating, or to refuse to answer particular questions, will not affect your relationship with the researchers, Dalhousie University, or any other group associated with this project. In the event you withdraw from the study, all associated data collected will be immediately destroyed wherever possible.

Unless you choose otherwise, all information you supply during the research will be held in confidence as we do not require your name and or banner number, and hence your name will not appear in any report or publication of the research. Data you submit to us will remain confidential and will not be able to be traced back to you. Only research staff will have access to this information. Confidentiality will be provided to the fullest extent possible.

If you have questions about the research in general or about your role in the study, please feel free to contact Dr. Hendricus A. Van Wilgenburg either by telephone at (902) 678-3844, or by e-mail hwilgenb@dal.ca. This research has been reviewed and approved by the Dalhousie University's Environmental Science Program Ethics Review Committee and conforms to the standards of the Canadian Tri-Council Research Ethics guidelines. If you have any questions about this process, or about your rights as a participant in the study, please contact Research Ethics, Dalhousie Research Services, 5th Henry Hicks Building, Rm 231, Dalhousie University, PO Box 15000, Halifax, Nova Scotia B3H 4R2 (telephone 1.902.494.3423 or e-mail ethics@dal.ca).

Note: By completing this survey you are consenting to participate in the Students and Local/Organic Food study conducted by SUST/ENVS 3502 Students. You are acknowledging that you have understood the nature of this project and wish to participate. You are acknowledging that you are not waiving any of your legal rights by continuing to the survey. This electronic signature indicates your consent.