Understanding Undergraduate Food Behaviours: A Spatiotemporal and Socioeconomic Analysis

by

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A thesis submitted in conformity with the requirements for the degree of Master of Arts
Department of Geography and Planning
University of Toronto

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Abstract

Food behaviours and food insecurity are complex topics, but there is minimal research on the food behaviours of post-secondary students, a population at higher risk of food insecurity. To understand the financial and temporal constraints faced by this population, this study uses a mixed-method approach. Ten semi-structured interviews were conducted, and an online survey was administered to 743 undergraduate students at the University of Toronto. The results of the analyses indicate students who live with their families’ face fewer barriers to accessing food, and students are more likely to report a healthy diet when they prioritize healthful food consumption. The findings demonstrate a need for more research on undergraduate student nutrition and lifestyle in relation to temporal and financial constraints. Such work will help universities and public health researchers gain a better understanding of how students purchase, prepare, and consume food, and ultimately contribute to student success and well-being.
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# Table of Contents

Chapter 1 Introduction ......................................................................................................................... 1

1  Project Overview ............................................................................................................................... 1

1.1 Context of Study Area ....................................................................................................................... 4

1.1.1 The University of Toronto ........................................................................................................... 4

1.1.1.1 Campus Food Retailers and Meal Plans .................................................................................. 5

1.1.1.2 Residence Dining Halls ........................................................................................................... 5

1.1.2 The City of Toronto ..................................................................................................................... 6

1.1.3 Study Site Justification ............................................................................................................... 7

1.2 Thesis Outline ................................................................................................................................. 8

Chapter 2 Literature Review .................................................................................................................. 9

2  Introduction ....................................................................................................................................... 9

2.1 Post-Secondary Students: Study Population ..................................................................................... 9

2.1.1 Transitioning to Student-Life and Responsibilities .................................................................... 10

2.1.2 Student Struggles and the Impacts on Well-Being .................................................................... 11

2.2 Spatial Aspects of Food Environment Research .......................................................................... 13

2.3 Important but Under-Considered Food Access Aspects ............................................................... 14

2.3.1 Individual Preference ............................................................................................................... 14

2.3.2 Geography and Time of Food Retail Access ............................................................................. 16

2.3.3 The Influence of Education Level and Socioeconomic Status on Food Access 18

2.4 Summary of the Literature ............................................................................................................. 18
4.2.4 Food Behaviours of Students Who Reported Higher Rates of a Healthy Diet Versus Students Who Reported Lower Rates of Healthy Diet

4.2.4.1 Students Who Report Higher Rates of a Healthy Diet

4.2.4.2 Students Who Report Lower Rates of a Healthy Diet

4.3 Summary of Quantitative and Qualitative Analysis

Chapter 5 Discussion

5 Introduction

5.1 Discussion of Quantitative Study Results

5.1.1 Living Arrangement and Food Behaviours

5.1.2 Job Status and Food Behaviours

5.1.3 Gender and Food Behaviours

5.1.4 Self-Reported Health of Diet and Food Behaviours

5.2 Discussion of Qualitative Study Results

5.2.1 Living Arrangement and Food Behaviours

5.2.2 Job Status and Food Behaviours

5.2.3 Gender and Food Behaviours

5.2.4 Self-Reported Health of Diet and Food Behaviours

5.3 Comparing and Contrasting the Quantitative and Qualitative Results

5.3.1 Living Arrangement

5.3.2 Job Status

5.3.3 Gender

5.3.4 Self-Reported Health of Diet
5.4 Study Limitations

5.4.1 Limitations of Participant Recruitment and Data Collection

5.4.2 Limitations of the Online Survey

5.4.3 Limitations of Quantitative Methods and Analysis

5.4.4 Limitations of Qualitative Methods and Analysis

Chapter 6 Conclusions

6 Study Conclusions

References
List of Figures

Figure 1 - Downtown Toronto Map ................................................................. 30
Figure 2 - City of Toronto Map ..................................................................... 31
Figure 3 - Map of the Greater Toronto Area .................................................. 32
List of Tables

Table 1 - Descriptive Statistics for Response Rate, Gender, and Student Status........34
Table 2 - Descriptive Statistics for Living Situation and Lifestyle..................................35
Table 3 - Descriptive Statistics for On-Campus and At-Home Food Behaviours ........36
Table 4 - Descriptive Statistics for Financial Constraints ..................................................37
Table 5 - Difference of Proportions - Gender .................................................................38
Table 6 - Difference of Means - Living Arrangement ......................................................40
Table 7 - Difference of Proportions - Living Arrangement .............................................40
Table 8 - Difference of Means - Self-Reported Health of Diet .......................................41
Table 9 - Difference of Proportions - Self-Reported Health of Diet ................................42
Table 10 - Difference of Means - Job Status .................................................................43
Table 11 - Difference of Proportions - Job Status............................................................43
List of Appendices

Appendix A - Online Survey Participant Consent Form.........................................................83

Appendix B - Online Survey Questions..........................................................................................84

Appendix C - Email Request to Professors to Distribute Online Survey.................................87

Appendix D - Participant Recruitment Flyer..................................................................................88

Appendix E - Email to Semi-Structured Interview Participants .................................................89

Appendix F - Semi-Structured Interview Consent Form.................................................................90

Appendix G - Semi-Structured Interview Prompt Questions.........................................................91
Chapter 1
Introduction

1 Project Overview

Food is nutritious, enjoyable, and can be a social tool that demonstrates an individual's morals while also occupying vital space within a person's time and financial budgets (Rozin, 1990). In addition to biological survival, social identity, and financial and temporal constraints influencing food choices, food behaviours can also be affected by living arrangement and the built environment (Bisogni et al., 2002). Given that individual food behaviours are affected by personal preference and the complexities of socioeconomic and spatiotemporal variables, it is important to examine how food behaviours differ between subsets of the population who may face unique and precarious life circumstances.

Young adults during their undergraduate degrees in particular, may undergo major life transitions as they move away from home, take on student loan debt, and/or get a job in addition to their studies (Baranowski et al., 1997). Despite these major changes in financial, temporal, and living arrangements, all of which we know influence food behaviours, little is known about undergraduate student food behaviours (Larson et al., 2006a; Baranowski et al., 1997).

In addition to the acknowledgement that food behaviours are poorly understood for undergraduate students, preliminary research in this area shows some contexts where post-secondary students are at risk of food insecurity, which negatively affects food
behaviours. For example, a national study conducted in the United States by Dubick et al. (2016) examined 1,800 students who experienced food insecurity. The researchers found that food insecurity could occur for students even when they had meal plans on-campus or jobs alongside school. Hughes et al. (2011) also found that students are at higher risk of food insecurity, and some students need to further supplement their livelihoods by borrowing food or money from friends and family or working more hours in addition to their studies.

Struggling to make ends meet is problematic in any circumstance, but as Bruening et al. (2017) state, food insecurity impacts students’ academic performance. They also note that it contributes to higher levels of stress and anxiety amongst undergraduate students that could further impact their academic achievement, and to that extent, their future career success. Therefore, undergraduate student food behaviours are a complex and multi-faceted topic, but so far, there is minimal understanding about post-secondary student food behaviours.

To addresses this gap in the literature, this thesis presents research on undergraduate university students at the University of Toronto, St George, by answering four research questions: 1) “Do undergraduate food behaviours differ between students who live at home versus students who live away from home?”, 2) “Do undergraduate food behaviours differ between students who have a job in addition to their studies versus students who do not?”, and 3) “Do food behaviours differ between students who identify as female, male, or in another way?”. These first three research questions explore how housing circumstances (i.e. infrastructure and roommate dynamics), job-related time
constraints, and gender, a basic demographic marker, can be predictors for more healthful or less healthful food behaviours.

The fourth and final research question, “Do food behaviours differ between students who report a healthy diet versus students who do not report a healthy diet?”, explores how reports of a more healthful or less healthful diet may be a predictor in undergraduate food behaviours. Although we know food behaviours can be influenced by a plethora of socioeconomic and spatiotemporal circumstances, this final question is important to consider when understanding undergraduate food behaviours because, as Dibsdall et al. (2003) point out, without the intention of purchasing more healthy foods, there will be limited improvement in the consumption of healthy foods. Together, these four research questions explore how undergraduate food behaviours influence, or are influenced by, housing circumstances, financial and temporal constraints, and self-reported health of diet.

An analysis of an online survey administered to 743 undergraduate students and semi-structured interviews of 10 students at the University of Toronto’s St. George Campus are presented. This mixed-method approach allows for an in-depth exploration of how housing circumstances, temporal factors, financial constraints, and self-reported health of diet influence this population’s food behaviours. The online survey captures statistical insights for significant and insignificant influences on food behaviours, and the semi-structured interviews present stories to provide more insights for undergraduate student food-related experiences. Ultimately, this research will help universities, public health researchers, and planners gain a better understanding of how undergraduate students
interact with their foodscape in addition to providing new insights into this understudied group’s food behaviours, and ultimately, their well-being.

1.1 Context of Study Area

This thesis presents a case study of the University of Toronto, St. George Campus (U of T, as it will be referred to hereinafter) undergraduate student population, and how student food access is influenced by temporal and financial constraints. The research is a case study conducted only with U of T undergraduate students and does not include other undergraduate student populations in downtown Toronto, such as Ryerson University. Further details of U of T, the city of Toronto, and study site justification are provided in the following subsections.

1.1.1 The University of Toronto

U of T is the largest post-secondary institution in Canada with nearly 90,000 undergraduate and graduate students registered across three campuses located in downtown Toronto, Scarborough, and Mississauga. Annual undergraduate tuition costs between $6,500 and $14,300 for domestic students, and between $42,000 and $47,000 for the approximate 14,000 international students. The downtown St. George campus has 61,000 students, and approximately 44,000 are registered as undergraduate students. The undergraduate student population at the St. George campus is skewed female, with approximately 55 percent of students registered as female and 45 percent registered as male (University of Toronto, 2017). This study is also skewed female and will be further discussed in later sections.
1.1.1.1 Campus Food Retailers and Meal Plans

There are over 30 food outlets at U of T, including three residence dining halls. Across the campus, there is a wide variety of food retailers including small cafes and bistros, as well as major chains such as Starbucks, Tim Hortons, and Second Cup. Any student can purchase food at any food outlet on campus.

U of T offers discounts on food purchases for students through TBucks. TBucks are funds a student can upload onto their student identification card and use as a debit card to purchase campus food. There are a variety of TBuck-packages available for students. For example, non-residence students can purchase an on-campus meal plan by uploading Tbucks onto their student card. Packages range from $150 to over $1000 per semester and are designed to accommodate any student's food and financial needs.

Residence students can receive Tbucks on their student card in addition to their residence meal plan. These Tbucks are referred to as Flex Dollars, as the student is able to purchase food outside of their residence dining hall. If a student requires more TBucks or Flex Dollars for campus food purchases, more money can be uploaded at any time at the student’s expense (University of Toronto, 2018).

1.1.1.2 Residence Dining Halls

The residence dining halls are located at Chestnut, New College, and Knox College residences. The students may choose to purchase unlimited meal plans for their residence dining hall. The dining halls are open every day from 7:30am until 10pm, and from 8:00am until 8:00pm on weekends and holidays.
All the dining halls are buffet-style, with breakfast served between 7:30am until 10:30am, lunch served between 11:30am until 1:30pm and dinner served between 4:45pm until 8:00pm. Outside of the scheduled meal times, the dining halls offer a deli, salad and pizza bar. Additional snacks such as fruit, ice cream, and a variety of beverages are available at all times.

Students are not permitted to take food out of the dining hall, with the exception of a piece of fruit, an ice cream cone, or a personal beverage container with a maximum size of 750 millilitres. All U of T dining halls follow these standards. Students from one residence, such as Chestnut, are not able to eat at another residence dining hall, such as New College, using their unlimited meal plan. Instead, the student eating in another dining hall would need to use Flex Dollars to access another dining hall. Alternatively, students can purchase a $5 bagged lunch at their own expense from their residence dining hall for the day (University of Toronto, 2018).

1.1.2 The City of Toronto

Toronto is the capital of Ontario, Canada’s most populated province, and the largest city in Canada with nearly 3 million residents and over 6.3 million people in the greater metropolitan area (City of Toronto, 2018). Similar to other large cities in Canada, such as Montreal and Edmonton, Toronto’s urban centre offers a wide variety of food outlets and grocery retailers (Larsen and Gilliland, 2008). Given that the St. George campus of U of T is located in downtown Toronto, the variety and abundance of food outlets around the campus can accommodate a wide range of food interests and dietary needs.
The city of Toronto has generally high levels of spatial access to food retailers (i.e. there are few if any “food deserts”) (Widener et al., 2017), whereas researchers have identified areas with lower levels of geographic access in mid-sized Canadian cities, such as London, Ontario (Larsen and Gilliland, 2008). However, this does not mean people in large cities do not struggle accessing healthy food. As Widener (2018) and Widener and Shannon (2014) point out, temporal, spatial, and socioeconomic dimensions all impact what food is available to a person.

1.1.3 Study Site Justification

The majority of Canadian urban food environment research has been conducted in the provinces of Ontario, Alberta, and Quebec (Wang et al., 2016). Despite the lack of research focus in the other provinces and territories, and non-urban food environments in Canada, the volume of research on food environments overall in Canada is relatively small when compared to work done in the United States (Eckert and Shetty, 2011; Minaker et al., 2016). Therefore, Canadian food environment research, regardless of study site, is valuable for Canadians to gain an understanding of Canadian food environments as American food environments are different from Canada (Minaker et al., 2016).

There is also a lack of research on undergraduate student food behaviours (Bruening et al., 2017). By examining the students’ food behaviours at the downtown campus of U of T, this gap in the literature can be addressed and contextualized within existing research on Toronto’s food environment. Given Toronto's size, this research is also valuable as it can be comparable to other large Canadian cities in future urban food environment studies.
1.2 Thesis Outline

This thesis presents a mixed-methods research project on student food behaviours by answering four research questions: 1) “Do undergraduate food behaviours differ between students who live at home versus students who live away from home?”, 2) “Do undergraduate food behaviours differ between students who have a job in addition to their studies versus students who do not?”, 3) “Do food behaviours differ between students who identify as female, male, or in another way?”, and 4) “Do food behaviours differ between students who report a healthy diet versus students who do not report a healthy diet?”. In Chapter 2, a literature review presents food access research that focuses on different temporal, and socioeconomic constraints. The literature review also discusses research on student food access and well-being. The literature review is followed by a description of data collection and methods in Chapter 3. Next, Chapter 4 presents the online survey and semi-structured interview analysis and results, followed by a discussion of the results and the study’s limitations in Chapter 5. The conclusions of this study are provided in Chapter 6 alongside recommendations for future studies on undergraduate food behaviours.
Chapter 2

Literature Review

2 Introduction

This chapter contextualizes the research presented in this thesis. First, student health and life transitions are discussed and highlight how university is an avenue for individuals to transition from childhood into adulthood. Next, food environment research is presented with an emphasis on the various influences of food access, such as socioeconomic status, spatial and temporal constraints, and personal preference. Overall, this chapter emphasizes the lack of literature on student health in relation to temporal and financial constraints to accessing food, thus demonstrating the importance of this research project.

2.1 Post-Secondary Students: Study Population

Undergraduate students are transitioning from childhood into adulthood and are sometimes far removed from their support systems if they attend university in a different city, region or country. In students’ attempts to pursue a higher level of education, they must take on large financial responsibilities, such as tuition payments, university fees, living expenses, and rent. Familial support, financial aid and personal savings may provide financial resources during their academic careers. However, students also need to adjust to university-related stress while ensuring they cover financial costs, consume
a healthy diet, and maintain a well-balanced lifestyle. These topics are presented in the following subsections.

2.1.1 Transitioning to Student-Life and Responsibilities

Childhood food insecurity is well researched and understood to have negative consequences for developing healthy lifestyle habits, including food related habits and physical activity (Jyoti et al., 2005), maintaining a healthy weight (Casey et al., 2006), and achieving academic excellence (Alaimo et al., 2001). Due to the concerns of childhood food insecurity, food research and intervention strategies are often targeted towards school-aged children to improve prospective dietary outcomes. However, this strategy has its limitations because it assumes static dietary habits throughout an individual’s life. This is problematic because food preferences change over time, and the food an individual consumes is affected by social, cultural, and economic factors (Moore and del Biondo, 2017).

To this extent, dietary behaviours during life transitions, such as young adulthood and during university, are poorly understood (Larson et al., 2006a). However, multiple studies have identified that students are more vulnerable to food insecurity compared to other segments of the population, such as children who still live with their parents, or elderly populations. For example, recent studies by Breuning et al. (2017) and Dubick et al. (2016) proclaim that food insecurity is a complex and under-studied problem amongst post-secondary students and it contributes to stress and anxiety. These studies point to a gap in the academic literature concerning post-secondary students’ experiences of food access. This population faces unique financial and time constraints
during their pursuits to obtain higher levels of education, yet little is known how these affect their dietary habits.

In modern-day developed countries, university-level education is viewed as a prerequisite to obtaining a well-paying job (Pallas, 2003), but the financial barriers to achieve this goal are taking longer to overcome (Setterston and Ray, 2010). Potential barriers to successfully transitioning into financial independence during adulthood may be attributed to increasing undergraduate tuition fees and student debt, higher living expenses in many (urban) regions, and housing prices. These barriers may ultimately prohibit some students and young adults from moving away from home and obtaining financial independence.

Overall, student food security or insecurity depends on an individual's financial circumstances, familial support, budgeting skills, and income supplements such as financial aid and credit cards (Gaines et al., 2014). However, the potential lack of financial access to healthy diets can impede a student’s health and well-being (Hughes, 2009), and the details of personal accounts of these varying experiences are poorly presented in the current literature.

2.1.2 Student Struggles and the Impacts on Well-Being

Academic performance is directly linked to an individual's personal health. In some cases, the stress some students feel from educational loans can result in them dropping out of school (Robb et al., 2012; Roberts et al., 1999), or it can be a consequence of strains on mental health being exacerbated by their debt (Munro et al., 2013). In other cases, to reduce the financial burden some students face, they adjust their living
situation by moving home with their parents, taking on one or more jobs in addition to their studies, or borrowing money for rent, food, or other living expenses (Hughes et al., 2011).

Students who do not want or are not able to reach out to family and friends for support, often apply for university funding or student loans. However, even if a student receives financial support, food security might not be guaranteed. For example, a study by Meldrum and Willows (2006) found that some students who had student loans and actively followed a budgeting system still had insufficient funds to maintain a well-balanced and nutrient-dense diet. This reality is particularly concerning because past research has shown university students struggle to perform well academically when they are food insecure in the United States (Patton-López et al., 2014), and around the world (Munro et al., 2013).

In addition to trying to maintain enough money and food to support daily activities, students often cope with personal and social pressures about their physical appearance. For example, Lowery et al., (2009) found that amongst first-year college students, body image is of great concern, especially for women. Since food and body image are inherently linked, this could compound pre-existing stresses and impact a student’s well-being. Past work has shown that when students are feeling stressed, they tend to eat less healthy foods (Zellner et al., 2006), thus leading to a vicious cycle of mental, emotional, and physical well-being.

One coping mechanism that seems to be a common trend amongst students when accessing food is the prioritization of pre-made foods (Betts et al., 1997). Perhaps the
tendency toward students prioritizing premade and ready-to-eat foods is linked to lack of food preparation skills and training (Larson et al., 2006b), or their new living situation on-campus with roommates (Chapparo et al., 2009). In other cases, some students may simply prefer purchasing fast-foods or premade food items. We know food access is a complex and multifaceted topic, but one driving factor is that without the intention of purchasing more healthy foods, there will be limited improvement in the consumption of healthy foods (Dibsdall et al., 2003).

2.2 Spatial Aspects of Food Environment Research

Research on food environments has been extensive in recent decades, with over 430 food environment publications between 2007 and 2015 (Lytle and Sokol, 2017). This abundance of literature is helpful, particularly because food environments are seen to influence dietary behaviours. Furthermore, food environment research provides insights into understanding how and where people access food, as different types of retailers tend to stock different quantities and varieties of food with a range of nutritional quality (Caspi et al., 2012).

To date, food environment research has focused on the food desert concept, which defines regions as lacking healthy food options. For example, Burns and Inglis (2007) conducted a study in Melbourne, Australia to assess the food environment in areas with varying socioeconomic levels. They concluded that healthier, fresh foods are more accessible in wealthier neighbourhoods, whereas typically unhealthy fast foods are more abundant in poorer neighbourhoods. In another publication, Larson et al. (2009b) conducted a comprehensive review of the food environment research, and the authors
also concluded that poorer neighbourhoods have less access to fresh foods and grocery markets than wealthier neighbourhoods.

The trend with socioeconomically deprived neighbourhoods having inadequate access to fresh food outlets is concerning because it reduces the potential for people with a lower socioeconomic status to maintain healthier dietary habits (Moore et al., 2009). Another common term used in the food environment literature is “food swamp,” which is a concept defining an area as having an overabundance of food retailers with lower nutritional offerings. In the Canadian context, food swamps are typically found in urban centres, while food deserts are more prevalent in rural areas (Minaker et al., 2016). While these concepts are important, they predominantly focus on geographical proximity to food, and underemphasize other factors that contribute to food access, such as mobility, money, and time.

2.3 Important but Under-Considered Food Access Aspects

Although research on food deserts and food swamps contributes to the understanding of regional variation in food retailer geographies, more aspects need to be considered when assessing how food environments affect dietary behaviours. Specifically, spatial dimensions are not the only factor in determining how, where, and when people access food (Bao and Tong, 2017).

2.3.1 Individual Preference

To a certain extent, we know the built environment influences dietary behaviour and health outcomes (Booth et al., 2011), but the food environment and the built
environment are not the only factors that impact an individual’s food choice (Guthman, 2013; Story et al., 2008). For example, other influences found within a food environment may include social norms, including eating habits with family or friend circles, and the physical setting, meaning what food is readily available in nearby outlets (Story et al., 2008).

These aspects, and others, including public transportation, economic stability, and time use (Widener, 2018) are important when assessing access to food. In addition to this, a study by Cummins et al. (2014) revealed that improved access to a supermarket that sold fresh and healthy foods in a region thought to be a food desert did not necessarily change food choices. These findings are similar to those published by Clary et al. (2017), who claim that food access is the outcome of the interaction between individual choice and environmental exposure.

In considering the case of the downtown St. George campus at the University of Toronto, students are exposed to an abundance of food retailers, but ultimately what a student chooses to consume is dependent on a range of factors, including the built environment and individual-level preferences and constraints. Throughout the literature though, individual agency remains a vital, yet understudied role in navigating the food environment. For example, Black et al. (2014) posit that robust food environment assessments need to account for individual choices and behaviours in additional to spatial dimensions of food access in order to gain more meaningful insight into how individuals purchase and consume food.
Food choice can also be influenced by life trajectories, meaning that an individual’s past and present experiences and their economic stability, greatly define what food they consume (Devine et al., 1998). Food choice is also highly circumstantial, depending on an individual’s current situation and individual identity (Devine, 2005; Bisogni et al., 2002), and it is tremendously complex to fully analyze and define (Furst et al., 1996; Wethington, 2006) because preferences and norms play a role in food choice (Fischler, 1980; Rozin, 1990), in addition to health and financial considerations (Steptoe et al., 1995).

2.3.2 Geography and Time of Food Retail Access

Another important but underestimated component of food environment research is the temporal aspects of food access. Hanson (1980) states that research on food choice lacks the acknowledgement of multipurpose and multi-stop trips. This topic is also touched upon by Leszczyc et al., (2004), who explains that consumers tend to combine errands into one trip and do multi-purpose shopping in one day to be more efficient. It was not until recently that discussions on the spatiotemporal aspects of the food environment and food access were substantiated. Notably, proximity is not the sole indicator of food access (Widener and Shannon, 2014), and time also needs to be accounted for in discussions about food access, such as the operating hours of food retailers (Chen and Clark, 2016). Temporal constraints are an important aspect of food access research because people lead more complex lives than simply purchasing foods from the retailer closest to their residence (Widener et al., 2013). Therefore, human mobility should be considered in food access discussions (Widener et al., 2015).
Transportation modes need to be accounted for in food access assessments as well because travel expenses and commute times vary between modes of transportation such as public transit, cycling, and driving a vehicle. Also, vehicle congestion during peak hours and public transit frequency change throughout the day (Farber et al., 2014) which influences access to food retailers due to varying hours of operation (Chen and Clark, 2016). For example, grocery store access is severely diminished during early morning and late evening hours and can impact food access for people with unconventional work or study schedules (Widener et al., 2017). This is particularly important for students who may study or work late into the evening or early morning hours and cannot make it to a food retailer before closing time.

Another common barrier to healthy food choices is the perceived lack of time to make food (Clary et al., 2017; Devine, 2005; Hertzler and Frary, 1992; Pelletier and Laska, 2012). Particularly for young adults prepping food at home, Hertzler and Frary (1992) highlight that students often feel they do not have enough time to prepare food. Therefore, the authors suggest tailoring nutrition information to different population segments in order to best support young adults’ needs for accessing nutritious foods. Tailoring nutrient information to specific populations would be helpful in encouraging students to prepare more meals at home, especially because adolescents and young adults frequently tend to purchase food out more than preparing it at home (Nielsen et al., 2002). Larson et al. (2009a) also discuss how time barriers impact the enjoyment of meals, particularly with the inability of eating meals with friends, partners, or family members due to insufficient time. Therefore, perceived time constraints may limit the enjoyment of preparing and eating in addition to accessing healthy food.
2.3.3 The Influence of Education Level and Socioeconomic Status on Food Access

Some research indicates that socioeconomic status and education level have a major influence on the likelihood of an individual consuming more healthy foods. For example, the results of a study by Lallukka et al., (2007) indicate that higher socioeconomic status improves the chances of individuals reporting a healthier diet. Food security is also closely linked to source of income, and as Tarasuk et al., (2016) point out, about 60 percent of Canadian households that rely on social assistance as a source of income struggle with food security. Robinson et al., (2004) also found similar results and state that individuals with higher levels of education typically have better dietary outcomes. While people with higher education levels tend to have higher socioeconomic statuses and less time pressures, students are an interesting group because they typically have a lower economic status yet are furthering their education to obtain a higher socioeconomic status.

2.4 Summary of the Literature

We know food access is a complex phenomenon (Furst et al., 1996; Wethington, 2006) and that the diets of those in transition between adolescence and adulthood is understudied (Baranowski et al., 1997). We also know students are typically more vulnerable to food insecurity than other portions of the population due to financial constraints (Bruening et al., 2017), perceived time pressures (Hertzler and Frary, 1992), and potentially adjusting to a more independent lifestyle for the first time. In order to gain a clearer understanding of these influences and potential dietary compromises
during post-secondary school, more attention needs to be given to the university student population. This research project explores these dietary influences and food accessibility by conducting an online survey and semi-structured interviews to gain insights into the current food behaviours of post-secondary students. In doing so, it will enable researchers to better understand the struggles some students face with their financial and time constraints to healthy dietary habits alongside their studies.
Chapter 3
Research Methods

3  Methods Overview

This project uses a mixed-methods approach with two distinct but related research sections. The quantitative data is collected from an online survey administered through Survey Monkey to undergraduate students at the St. George Campus. These data provide insights into undergraduate food behaviours. Qualitative data are collected through 10 semi-structured interviews at the same time the online survey was open. Only 10 interviews were conducted due to time limitations and funding for participant recruitment and incentives. Each interview was approximately 20 minutes in duration and complements the survey results by providing undergraduate student experiences. Ethics approval for all questions, materials, and methods was obtained from the University of Toronto’s Research Ethics Board, protocol number 00035723.

3.1  Description of Quantitative Methods

The online survey was open for four weeks between March 6th and April 1st, 2018. Participants provided consent for their information to be used in this research (Appendix A). The survey presented 20 questions that were designed to gather basic information about the participants, their food behaviours, and their temporal and financial constraints in relation to food.
The survey questions are informed by a study conducted at a university in Queensland, Australia by Hughes et al. (2011), as well as a national study conducted in the United States by Dubick et al. (2017). There are five demographic questions for participants’ age, postal code, registration status (domestic, international or Indigenous), living arrangement, and employment. There are 15 food behaviour questions that provide insights for food purchasing tendencies and/or preferences, temporal constraints, self-reported health of diet, and financial constraints for food purchases and living costs. A complete list of survey questions and responses is provided in Appendix B.

3.1.1 Survey Participant Recruitment

The recruitment of potential participants for the online survey happened at the St. George campus with social media posts, emails to professors to distribute a link to the survey to their students (Appendix C), and approximately 80 flyers placed in a variety of buildings across the St. George campus (Appendix D). As a token of appreciation to the students who participated in the survey, there was a draw for 10 winners to be randomly selected to receive a $10 Second Cup Café gift card after the survey closed.

3.1.2 Survey Response

743 students participated in the survey, and 591 responses were usable for quantitative assessment. Unusable responses included non-U of T undergraduate students, lack of consent, and duplicate participants. Of the usable responses, 75 percent of the participants were female, 25 percent male, and there were four participants identifying in another way. The average participant age is 20, with the youngest participant being
17 years old, and the oldest participant being 47 years old. The data are assessed for the occurrence of food behaviour responses within the context of this study’s four research questions: living arrangement, job status, gender, and self-reported health of diet. This assessment describes temporal and financial constraints on student food behaviours.

3.1.3 Survey Data Analysis

The categorical data from the survey is best described as incidences of reported food behaviours from the study population. The quantitative data are analysed based on the four research questions to assess how food behaviours differ in relation to living arrangement, job status, gender, and self-reported health of diet. Difference of means tests are used to compare variables with more than two outcomes between subgroups, and difference of proportions tests are used when survey variables have only two outcomes. The p values from difference of means and difference of proportions tests are used to determine which differences in undergraduate food behaviours are significant.

3.1.3.1 Difference of Means and Difference of Proportions Test Examples and Category Explanation

Difference of means tests are conducted when comparing survey questions with more than two possible outcomes. For example, “How often do you pack food for the day?”, uses a difference of means hypothesis test because potential responses include “Every day/most days,” “Sometimes,” and “Rarely/never”. On the other hand, difference of proportions tests are conducted when comparing survey questions with only two
possible outcomes. For example, “Do you feel you have a healthy diet?”, uses a
difference of proportions tests because potential responses include “Yes/mostly” and
“Not really/no”.

The response categories used to determine the use of a difference of means or a
difference of proportions test is a result of the recategorization of survey responses. The
full list of survey questions and responses provided in Appendix B demonstrate that
every question has more than two options for a student to select. However, the
quantitative analysis required regrouping of these categories to enable a clear
distinction between responses.

For example, survey questions such as “How often do you pack your food to take with
you to school/work?” had response options including, “everyday”, “most days”,
“sometimes”, “rarely”, and “never”. In this case, the responses “everyday” and “most
days” were combined into one “everyday/most days” category, “sometimes” remained
its own category, and “rarely” and “never” were combined into one “rarely/never”
category.

In other cases, the survey question, “do you purchase your own food?” had survey
response options including “yes”, “usually”, “sometimes”, and “no”. In this case, the
responses “yes” and “usually” were combined into one “yes/usually” category, and the
responses “sometimes” and “no” were combined into one “sometimes/no” category.
Therefore, this question used a difference of proportions hypothesis test to determine
significant levels. These survey response recategorization methods were applied to
every question used in the quantitative analysis.
3.1.3.2 Survey Questions Not Included in Quantitative Analysis

Some survey questions that obtained basic information about the survey participants were not included in the survey analysis. For example, “how old are you?”, was not included as the study population had an average age of 20 and a median age of 19.

Other questions, like “how was your tuition paid this semester?” and “when do you tend to purchase food for your house?”, were not included in the analysis due to data recategorization limitations that resulted from survey participants being able to select multiple responses. Although these data would have provided interesting insights about undergraduate food behaviours, the ability to select multiple options made it difficult to create well defined categories for analysis.

3.1.4 Summary of Quantitative Methods

The differences of means and difference of proportions tests are conducted using four subgroups that were informed from this study’s four research questions: living arrangement, job status, gender, and self-reported health of diet. The analysis and results of these hypothesis tests are presented in Chapter 4.

3.2 Description of Qualitative Methods

Semi-structured interviews were conducted with 10 participants at the same time as the online survey between March 6, and April 1, 2018. These participants were recruited from the previously described online survey and limited to 10 interviews due to this study’s temporal and financial constraints. The following subsections describe the semi-
structured interview recruitment process, interview methods, and a description of the analysis.

3.2.1 Recruitment of Semi-Structured Interview Participants

At the end of the online survey, participants had the option to provide their email to potentially be contacted in furthering the discussion about undergraduate food behaviours in a semi-structured interview. Eligible participants were randomly selected, and an email was sent to invite them to participate in a semi-structured interview. They were informed they would receive a $10 Second Cup Café gift card at the completion of the interview (Appendix E provides a copy of the email). For the students who responded to the email, interviews were scheduled based on the participant’s availability.

During the initial semi-structured interview scheduling phase, potential participants were contact at random. However, within the first week there was an unequal gender response rate with an over-abundance of female participants. Potential influences for a higher female response rate could be due to social pressures on female body image and food choices, and/or a lower distribution rate of the survey link to male-dominant faculties such as engineering, mathematics and physics. To increase the number of potential male interview participants, participants who identified as male were specifically contacted from the email contact list.
3.2.2 Semi-Structured Interview Process

The participants who agreed to participate in a semi-structured interview came to a designated office at the University of Toronto. Interviews were either conducted in the office or at a table in a quiet hallway. These two spaces were available to minimize chances of the interview being overheard, to ensure privacy for the participant, and to have a quiet space for the noise sensitive audio-recording device.

When participants arrived, they were welcomed and thanked for their participation in the research. The study was further explained to ensure they fully understood their role in the research, and following verbal agreement to participate in the interview, each participant signed a formal consent form (Appendix F) and assigned a random participant identification number. The interviews were recorded using an audio recording device and prompt questions (Appendix G) acted as an interview guide for the conversation. Each interview took approximately 20 minutes, with the shortest lasting 14 minutes, and the longest lasting 28 minutes.

At the conclusion of a semi-structured interview, the participant received their token of gratitude, and the interview audio file was immediately uploaded onto a password protected computer and transcribed verbatim. The audio files and interview transcriptions were backed up on a USB memory stick that remains in a locked drawer. The audio files were deleted from the recording device, and all semi-structured interview voice recordings and transcription files will be deleted by Summer 2019, in compliance with the Research Ethics Board approval for protocol number 00035723.
3.2.3 Semi-Structured Interview Analysis

The analysis of the semi-structured interviews included two thorough readings of all the transcribed interviews. Experiences and stories shared by the participants were categorized into the four research question themes: living arrangement (students who live at home versus students who live away from home), job status (employed students versus unemployed students), gender (students who identify as female versus students who identify as male) and self-reported health of diet (students with a higher rate of reporting a healthy diet versus students with a lower rate of reporting a healthy diet). All experiences are categorized into each theme based on the judgement of the author. The qualitative analysis is pivotal in sharing the story of undergraduate student food behaviours and lived experiences, and details are presented in Chapter 4.

3.3 Summary of Research Methods

This study uses a mixed-method approach to gain an understanding of undergraduate food behaviours. The quantitative analysis provides statistical insights through an online survey by conducting difference of means and difference of proportions tests. The qualitative analysis presents student stories from the information gathered from 10 semi-structured interviews. Together, these methods provide a unique perspective of undergraduate food behaviours and provide details that will help university administrations and planners further account for student health and well-being.
Chapter 4
Analysis and Results

4 Introduction

This chapter aims to answer this study’s four research questions: 1) “Do undergraduate food behaviours differ between students who live at home versus students who live away from home?”, 2) “Do undergraduate food behaviours differ between students who have a job in addition to their studies versus students who do not?”, 3) “Do food behaviours differ between students who identify as female, male, or in another way?”, and 4) “Do food behaviours differ between students who report a healthy diet versus students who do not report a healthy diet?”.

The analysis and results are addressed in two sections. First, data from the online survey are presented on maps and in descriptive statistics tables to explore the distributions of participants’ responses. Then hypothesis tests are used with these data to identify statistically significant relationships using differences of means and difference of proportions tests. Second, themes from the qualitative data are presented. The themes are used to identify trends amongst semi-structured participants and highlights the complexities of food behaviours for undergraduate students.

4.1 Analysis of Online Survey Data

The spatial distribution of survey participants is mapped to present the various distances students must commute to attend classes at U of T. The categorical data
collected from the online survey is then presented with descriptive statistics to provide an overview of survey responses and provides insights for response trends.

Next, an analysis of subpopulations is presented with difference of means and difference of proportions tests. These hypothesis tests help identify significant relationships between variables that may influence different food behaviours, and are presented in four food behaviour sections that reflect this study’s research questions.

4.1.1 Geographic Scope of Survey Respondents

Survey respondents provided their postal code at the time of the study in the online survey. The postal codes are mapped using three scales. First, the downtown Toronto Map (Figure 1) demonstrates the highest concentration of students who participated in the online survey live near U of T. Next, the city of Toronto map (Figure 2) and the Greater Toronto Area (GTA) map (Figure 3) provide an image of how far some students commute to attend classes at the St. George campus at U of T. The dissemination areas on each map are the postal code areas for the city. Each dissemination area that has survey respondents is coloured with a corresponding shade to identify the number of students living in that area.
Figure 1- Downtown Toronto Map

This map of downtown Toronto identifies U of T with a red border.
**Figure 2 - City of Toronto Map**

This city of Toronto map identifies U of T with a red border.
**Figure 3 - Map of the Greater Toronto Area**

This map of the GTA identifies Toronto with a black border.
4.1.2 Online Survey Descriptive Statistics

This section presents the descriptive statistics from the online survey in four subsections. These subsections describe each survey question’s response rate and a table is provided in each subsection. Please note that n-values differ for each survey question as not every respondent answered every survey question. For example, there are 591 usable survey respondents, but only 590 answered, “what is your gender?”, and only 589 respondents answered, “do you feel you have a healthy diet?”.

4.1.2.1 Participant Response Rate, Gender, and Student Status

In this survey, there was a total of 743 responses, but only 591 (80 percent) were usable. Reasons for discarding responses include participants not providing consent, invalid U of T email addresses, and non-U of T student responses. Of the usable responses, participants reported an average age of 20 (median 19), with a minimum age of 17, and a maximum age of 47. Approximately 76 percent of the respondents identified as “woman/girl”, while approximately 23 percent identified as, “man/boy”, and less than 1 percent provided another response. Around 82 percent of the participants are enrolled as domestic students, while 14 percent were international students, and less than 1 percent identify as Indigenous. Only 2 percent of students were part-time, while the remaining 98 percent were full-time. Please refer to Table 1 for an overview of these descriptive statistics.
Table 1 - Descriptive Statistics for Participant Response Rate, Gender, and Student Status

<table>
<thead>
<tr>
<th>Variable</th>
<th>Categories</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>Woman/Girl 449 (76%)</td>
</tr>
<tr>
<td>n= 590</td>
<td>Man/Boy 138 (23%)</td>
</tr>
<tr>
<td></td>
<td>Other 3 (&lt;0.01%)</td>
</tr>
<tr>
<td>Enrollment Status</td>
<td>Domestic 483 (82%)</td>
</tr>
<tr>
<td>n= 590</td>
<td>International 80 (14%)</td>
</tr>
<tr>
<td></td>
<td>Indigenous 2 (&lt;0.01%)</td>
</tr>
<tr>
<td>Registration Status</td>
<td>Full-Time 578 (98%)</td>
</tr>
<tr>
<td>n= 590</td>
<td>Part-Time 12 (2%)</td>
</tr>
</tbody>
</table>

4.1.2.2 Living Situation and Lifestyle

About 47 percent of participants reported living with parents and/or guardians, while 38 percent reported living with unrelated roommate(s), 12 percent reported living alone, less than 0.01 percent reported living alone with children, and 2 percent live with their spouse or partner. About 41 percent of students reported purchasing their own food for their household, while 50 percent reported sometimes, and 9 percent reported they do not purchase their own household food. Approximately 43 percent of respondents reported sharing food with their housemates, while 32 percent said sometimes, and 25 percent reported not sharing food with their housemates. Only 2 percent of respondents had a full-time job, while 34 percent had a part-time job, and 64 percent did not report having a job. About 25 percent of participants reported having enough time to prepare their own meals, while 26 percent said sometimes, and 48 percent reported not having enough time. Approximately 42 percent of participants reported they had a healthy diet and usually have a healthy diet, while 58 percent reported not really having a healthy
diet and not having a healthy diet. Table 2 provides a summary of these descriptive statistics.

**Table 2 - Descriptive Statistics for Living Situation and Lifestyle**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Categories</th>
</tr>
</thead>
<tbody>
<tr>
<td>Living Arrangement</td>
<td>Parents or Guardians 279 (47%)</td>
</tr>
<tr>
<td></td>
<td>Unrelated Roommate(s) 226 (38%)</td>
</tr>
<tr>
<td></td>
<td>Alone 70 (12%)</td>
</tr>
<tr>
<td></td>
<td>Alone with Children 1 (&lt;0.01%)</td>
</tr>
<tr>
<td></td>
<td>With Partner or Spouse 14 (2%)</td>
</tr>
<tr>
<td>Purchase Own Food</td>
<td>Yes and Usually 238 (41%)</td>
</tr>
<tr>
<td>n= 587</td>
<td>Sometimes 293 (50%)</td>
</tr>
<tr>
<td></td>
<td>No 56 (9%)</td>
</tr>
<tr>
<td>Share Food with Housemates</td>
<td>Yes and Usually 253 (43%)</td>
</tr>
<tr>
<td>n= 588</td>
<td>Sometimes 188 (32%)</td>
</tr>
<tr>
<td></td>
<td>No 147 (25%)</td>
</tr>
<tr>
<td>Job Status</td>
<td>Yes, Full-Time 12 (2%)</td>
</tr>
<tr>
<td>n= 590</td>
<td>Yes, Part-Time 202 (34%)</td>
</tr>
<tr>
<td></td>
<td>No 376 (64%)</td>
</tr>
<tr>
<td>Enough Time to Prepare Meals</td>
<td>Yes and Usually 149 (25%)</td>
</tr>
<tr>
<td>n= 590</td>
<td>Sometimes 155 (27%)</td>
</tr>
<tr>
<td></td>
<td>Not Really and No 285 (48%)</td>
</tr>
<tr>
<td>Reporting A Healthy Diet</td>
<td>Yes and Usually 250 (42%)</td>
</tr>
<tr>
<td>n= 589</td>
<td>Not Really and No 339 (58%)</td>
</tr>
</tbody>
</table>

4.1.2.3 On-Campus and At-Home Food Behaviours

Of the study population, 21 percent had a meal plan at U of T, and the remaining 79 percent did not have a meal plan. About 38 percent of participants reported packing a lunch for school every day or most days, while 26 reported sometimes, and 36 percent of respondents reported rarely or never. Around 28 percent of participants reported they prefer to go off-campus to purchase pre-made and ready-to-eat foods, while 46 percent reported they leave campus to purchase pre-made and ready-to-eat foods, 12 percent reported they do not prefer to leave campus, and 14 percent reported they do not
consume pre-made or ready-to-eat foods. Around 39 percent of students reported they purchase food on campus because it is convenient, 6 percent reported they purchase food on campus because there is a good selection, 37 percent reported they do not purchase food on campus because it is too expensive, and 18 percent reported they do not purchase food on campus because the selection is poor. **Table 3** provides an overview of these descriptive statistics.

**Table 3 - Descriptive Statistics for On-Campus and At-Home Food Behaviours**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Categories</th>
<th>Categories</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preference to Go Off-Campus to Buy Food</td>
<td>Yes</td>
<td>165 (28%)</td>
</tr>
<tr>
<td>n= 590</td>
<td>Depends</td>
<td>271 (46%)</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>70 (12%)</td>
</tr>
<tr>
<td>I Do Not Eat Pre-Made Foods</td>
<td></td>
<td>84 (14%)</td>
</tr>
<tr>
<td>Tendency to Purchase Food On-Campus</td>
<td>Yes, it is Convenient</td>
<td>233 (39%)</td>
</tr>
<tr>
<td>n= 590</td>
<td>Yes, the Selection is Good</td>
<td>34 (6%)</td>
</tr>
<tr>
<td></td>
<td>No, it is Too Expensive</td>
<td>217 (37%)</td>
</tr>
<tr>
<td></td>
<td>No, the Selection is Poor</td>
<td>106 (18%)</td>
</tr>
<tr>
<td>Frequency of Packing A Lunch for The Day</td>
<td>Daily and Most Days</td>
<td>226 (38%)</td>
</tr>
<tr>
<td>n= 590</td>
<td>Sometimes</td>
<td>149 (26%)</td>
</tr>
<tr>
<td></td>
<td>Rarely and Never</td>
<td>215 (36%)</td>
</tr>
<tr>
<td>Currently Have A U of T Meal Plan</td>
<td>Yes</td>
<td>124 (21%)</td>
</tr>
<tr>
<td>n= 588</td>
<td></td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>464 (79%)</td>
<td></td>
</tr>
</tbody>
</table>

4.1.2.4 Financial Circumstances

Approximately 42 percent of students said food purchases always and often contribute to financial stress, while 31 percent reported sometimes, 26 percent reported rarely, and never, and less than 0.01 percent opted out of this question. About 45 percent of students reported having enough money to be comfortable at the end of the month for rent, bills, and food, while 21 percent reported they break even for monthly finances, 23
percent reported being stressed or not having enough money, and 11 percent opted out of this question. Approximately 34 percent of students paid tuition using only family support, while 12 percent paid only using loans, 3 percent only used scholarships or bursaries, 3 percent only used personal savings, and 48 percent used a combination of these payment methods. A summary of these descriptive statistics can be found in Table 4.

Table 4 - Descriptive Statistics for Financial Constraints

<table>
<thead>
<tr>
<th>Variable</th>
<th>Categories</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tuition Payment</td>
<td></td>
</tr>
<tr>
<td>Family Only, n= 590</td>
<td>203 (34%)</td>
</tr>
<tr>
<td>Loans Only, n= 72</td>
<td>72 (12%)</td>
</tr>
<tr>
<td>Scholarship and Bursary Only, n= 16</td>
<td>16 (3%)</td>
</tr>
<tr>
<td>Personal Saving Only, n= 17</td>
<td>17 (3%)</td>
</tr>
<tr>
<td>Combination of Payments, n= 282</td>
<td>282 (48%)</td>
</tr>
<tr>
<td>Tendency of Food Purchases</td>
<td></td>
</tr>
<tr>
<td>Contributing to Financial Stress</td>
<td></td>
</tr>
<tr>
<td>Always and Often, n= 246</td>
<td>246 (42%)</td>
</tr>
<tr>
<td>Sometimes, n= 183</td>
<td>183 (31%)</td>
</tr>
<tr>
<td>Rarely and Never, n= 156</td>
<td>156 (26%)</td>
</tr>
<tr>
<td>Prefer Not to Answer 4</td>
<td>4 (&lt;0.01%)</td>
</tr>
<tr>
<td>Enough Money at The End of The Month For Rent, n= 587</td>
<td></td>
</tr>
<tr>
<td>Bills, Food, etc.</td>
<td></td>
</tr>
<tr>
<td>Enough Money to be Comfortable, n= 264</td>
<td>264 (45%)</td>
</tr>
<tr>
<td>Breakeven, n= 123</td>
<td>123 (21%)</td>
</tr>
<tr>
<td>Stressed or Not Enough Money, n= 137</td>
<td>137 (23%)</td>
</tr>
<tr>
<td>Prefer Not to Answer 63, n= 63</td>
<td>63 (11%)</td>
</tr>
</tbody>
</table>

4.1.3 Analysis of Subpopulations

This section presents the difference of means and difference of proportions tests in four categories including gender, living arrangement, self-reported health of diet, and job status. Each subsection includes a table presenting the statistically significant values between each category and food behaviours.
4.1.3.1 Food Behaviour Differences by Gender

The data were examined to identify if there is a significant difference of food behaviours between females (n = 448) and males (n = 138). Two variables are found to be significantly related to gender. The difference of proportions tests (Table 5) shows gender significantly influences “enough time to prepare meals” ($p = 0.0135$) with more men reporting enough time to prepare meals, and “food purchases contributing to financial stress” ($p < 0.001$) with more women reporting food purchases contribute to financial stress.

There were multiple insignificant relationship between gender and “healthy diet” ($p = 0.1922$), “buy own food” ($p = 0.6672$), “share food at home” ($p = 0.4473$), “meal plan at U of T” ($p = 0.6599$), “pack food for the day” ($p = 0.2837$), and “tendency to purchase campus food” ($p = 0.9840$).

**Table 5 - Difference of Proportions Hypothesis Test Comparing Gender and Food Behaviours**

<table>
<thead>
<tr>
<th>Value of Proportions</th>
<th>$p$-values</th>
<th>Category Values</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Enough Time to Prepare Meals</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Woman/girl = 0.228 (n = 447) Man/boy = 0.333 (n = 138)</td>
<td>$p = 0.0135^*$</td>
<td>Enough and usually enough time = 1 Not really and not enough time = 2</td>
</tr>
<tr>
<td><strong>Food Purchases Contributing to Financial Stress</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Woman/girl = 0.454 (n = 447) Man/boy = 0.289 (n = 138)</td>
<td>$p &lt; 0.001^{**}$</td>
<td>Always and often causes financial stress = 1 Sometimes, rarely and never causes financial stress = 2</td>
</tr>
</tbody>
</table>

* $p$ value $< 0.05$, ** $p$ value $< 0.01$, *** $p$ value $< 0.001$
4.1.3.2 Living Arrangement and Food Behaviours

Hypothesis tests for living arrangement are examined to identify living arrangement significantly influences food behaviours between students who live at home (n = 279), and students who live away from home (n = 311). All survey responses that did not report living with their parents and/or guardians were grouped together as living away from home, regardless of number of roommates, living alone, or living with a partner/spouse and/or with children. The “living at home”, and “living away from home” categories were defined by observations made from the semi-structured interviews.

Four significant values for living arrangement are found. Difference of means tests (Table 6) determined living arrangement is significantly related to whether a participant reports to “pack food for the day” (p < 0.001) with more students living at home packing their food for the day. Difference of proportion tests (Table 7) found living arrangement is significantly linked to “buy own food” (p < 0.001) with more students living away from home purchasing their own food, “share food at home” (p < 0.001) with more students living at home sharing their food, “meal plan at U of T” (p < 0.001) with more students living away from home having a meal plan.

Living arrangement was insignificantly linked to “healthy diet” (p = 0.8337), “enough time to prepare meals” (p = 0.5157), “tendency to purchase campus food” (p = 0.1141), and “food purchases contributing to financial stress” (p = 0.4473).
### Table 6 - Difference of Means Hypothesis Test Comparing Living Arrangement and Food Behaviours

<table>
<thead>
<tr>
<th>Category Values</th>
<th>Value of Means</th>
<th>p-values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pack Food for the Day</td>
<td>At Home = 1.674 (n = 279)</td>
<td>p = &lt;0.001***</td>
</tr>
<tr>
<td></td>
<td>Away = 2.257 (n = 311)</td>
<td></td>
</tr>
<tr>
<td>Everyday and most days = 1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sometimes = 2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rarely and never = 3</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* p value < 0.05, ** p value < 0.01, *** p value < 0.001

### Table 7 – Difference of Proportions Hypothesis Test Comparing Living Arrangement and Food Behaviours

<table>
<thead>
<tr>
<th>Category Values</th>
<th>Value of Proportions</th>
<th>p-values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Buy Own Food</td>
<td>At Home = 0.312 (n = 279)</td>
<td>p = &lt;0.001***</td>
</tr>
<tr>
<td></td>
<td>Away = 0.74 (n = 308)</td>
<td></td>
</tr>
<tr>
<td>Yes and usually = 1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No and sometimes = 2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Share Food at Home</td>
<td>At Home = 0.878 (n = 279)</td>
<td>p = &lt;0.001***</td>
</tr>
<tr>
<td></td>
<td>Away = 0.191 (n = 309)</td>
<td></td>
</tr>
<tr>
<td>Yes and usually share food = 1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No and sometimes share food = 2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Meal Plan at UofT</td>
<td>At Home = 0.032 (n = 278)</td>
<td>p = &lt;0.001***</td>
</tr>
<tr>
<td></td>
<td>Away = 0.371 (n = 310)</td>
<td></td>
</tr>
<tr>
<td>Reported having a meal plan = 1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reporting not having a meal plan = 2</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* p value < 0.05, ** p value < 0.01, *** p value < 0.001

#### 4.1.3.3 Self-Reported Health of Diet and Food Behaviours

Hypothesis tests for self-reported health of diet are examined to identify if there is a significant difference in food behaviours between students who report a healthy diet, and those who do not. For the survey question, “do you feel you have a healthy diet”, students who reported, “always” and, “often” (n = 250) were defined to have a healthy diet, and students who reported “not really”, and “no” (n = 339) were defined to not have a healthy diet.
Five significant relationships for a healthy diet are found. A difference of means test identified self-reported health of diet significantly influences, “pack food for the day” \( (p = <0.001) \) with more students who report a healthy diet packing food for the day (Table 8). Difference of proportions tests identified self-reported health of diet was significantly related to four food behaviours including “enough time to prepare meals” \( (p = <0.001) \) with more students who report a healthy diet having enough time to prepare meals, “buy own food” \( (p = 0.008) \) with more students who report a healthy diet not purchasing their own food, “tendency to purchase campus food” \( (p = <0.001) \) with more students who report an unhealthy diet purchasing campus food, and “food purchases contributing to financial stress” \( (p = <0.001) \) with more students who report an unhealthy diet having food purchases contribute to financial stress (Table 9).

Healthy diet is found to insignificantly relate to “job status” \( (p = 0.1188) \), “share food at home” \( (p = 0.0586) \), and “meal plan at U of T” \( (p = 0.246) \).

**Table 8 – Difference of Means Hypothesis Test Comparing Self-Reported Health of Diet and Food Behaviours**

| Pack Food for the Day  | Healthy = 1.772 (n = 250) | Unhealthy = 2.133 (n = 339) | \( p = 0.001^{***} \) | Everyday and most days = 1
|                       |                            |                           |                      | Sometimes = 2
|                       |                            |                           |                      | Rarely and never = 3

* \( p \) value < 0.05, ** \( p \) value < 0.01, *** \( p \) value < 0.001
### Table 9– Difference of Proportions Hypothesis Test Comparing Self-Reported Health of Diet and Food Behaviours

<table>
<thead>
<tr>
<th>Value of Proportions</th>
<th>p-values</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Enough Time to Prepare Meals</strong></td>
<td>Healthy = 0.446 (n = 249)  Unhealthy = 0.112 (n = 338)</td>
<td>( p = &lt;0.001^{***} )</td>
</tr>
<tr>
<td><strong>Buy Own Food</strong></td>
<td>Healthy = 0.474 (n = 249)  Unhealthy = 0.583 (n = 336)</td>
<td>( p = 0.008^{**} )</td>
</tr>
<tr>
<td><strong>Tendency to Purchase Campus Food</strong></td>
<td>Healthy = 0.368 (n = 250)  Unhealthy = 0.518 (n = 338)</td>
<td>( p = &lt;0.001^{***} )</td>
</tr>
<tr>
<td><strong>Food Purchases Contributing to Financial Stress</strong></td>
<td>Healthy = 0.304 (n = 250)  Unhealthy = 0.502 (n = 338)</td>
<td>( p = &lt;0.001^{***} )</td>
</tr>
</tbody>
</table>

* \( p \) value < 0.05, ** \( p \) value < 0.01, *** \( p \) value < 0.001

### 4.1.3.4 Job Status and Food Behaviours

Hypothesis tests for job status are examined to identify if there is a significant difference in food behaviours between students who have a job, and students who do not. For the survey question, “Do you have a job in addition to your studies?”, students who reported, “yes” for full-time, or part-time (n = 214) were categorized together, and the remaining respondents who reported “no” to having a job in addition to their studies were categorized as unemployed (n = 376).

Four significant relationships are found to be linked to job status. Difference of means tests determined job status is significantly linked to the variable “pack food for the day” \( (p = <0.001) \) with more students who have a job packing food for the day. The values are presented in Table 10. Difference of proportions tests determined job status is
significantly linked to the variables “share food at home” \( (p = <0.034) \) with more students who have a job sharing food at home, “meal plan at U of T” \( (p = <0.001) \) with more students without a job having a meal plan at U of T, and “food purchases contributing to financial stress” \( (p = <0.01) \) with more students who have a job having food purchases contribute to their financial stress. The values are presented in Table 11.

Job status is insignificantly related to “enough time to prepare meals” \( (p = 0.5687) \), “buy own food” \( (p = 0.9601) \), “tendency to purchase campus food” \( (p = 0.3125) \), and “end of month finances” \( (p = 0.6535) \).

**Table 10– Difference of Means Hypothesis Test Comparing Job Status and Food Behaviours**

<table>
<thead>
<tr>
<th>Pack Food for the Day</th>
<th>Values of Means</th>
<th>( p )-values</th>
<th>Category Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Employed = 1.822 (n = 214) Unemployed = 2.072 (n = 376)</td>
<td>( p = &lt;0.001*** )</td>
<td>Everyday and most days = 1 Sometimes = 2 Rarely and never = 3</td>
<td></td>
</tr>
</tbody>
</table>

* \( p \) value < 0.05, ** \( p \) value < 0.01, *** \( p \) value < 0.001

**Table 11 – Difference of Proportions Hypothesis Test Comparing Job Status and Food Behaviours**

<table>
<thead>
<tr>
<th>Share Food at Home</th>
<th>Values of Proportions</th>
<th>( p )-values</th>
<th>Category Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Employed = 0.575 (n = 214) Unemployed = 0.484 (n = 374)</td>
<td>( p = 0.034* )</td>
<td>Yes and usually share food = 1 No and sometimes share food = 2</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Meal Plan at UofT</th>
<th>Values of Proportions</th>
<th>( p )-values</th>
<th>Category Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Employed = 0.098 (n = 214) Unemployed = 0.275 (n = 374)</td>
<td>( p = &lt;0.001*** )</td>
<td>Reported having a meal plan = 1 Reporting not having a meal plan = 2</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Food Purchases Contributing to Financial Stress</th>
<th>Values of Proportions</th>
<th>( p )-values</th>
<th>Category Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Employed = 0.486 (n = 214) Unemployed = 0.378 (n = 375)</td>
<td>( p = 0.01** )</td>
<td>Always and often causes financial stress = 1 Sometimes, rarely and never causes financial stress = 2</td>
<td></td>
</tr>
</tbody>
</table>

* \( p \) value < 0.05, ** \( p \) value < 0.01, *** \( p \) value < 0.001
4.1.4 Summary of Survey Data

The hypothesis tests presented above provide insights into undergraduate food behaviours by identifying significance levels in four categories: 1) gender, 2) living arrangement, 3) healthy diet, and 4) job status. These tests demonstrate how food behaviours differ for various subpopulations and will be further discussed in Chapter 5.

4.2 Analysis of Semi-Structured Interviews

This section analyzes the semi-structured interviews by identifying the common themes and shared experiences between participants. The themes are presented in four sections that reflect this study’s research questions. First, how food behaviours are shaped by living arrangements is explored, comparing the experiences of students who live at home versus students who live away from home. The impact of students having a job in addition to their studies is then explored. Next, differences in food behaviours based on gender are explored, and the final section examines how students understand and work towards healthy diets.

4.2.1 Food Behaviours of Students Who Live at Home Versus Students Who Live Away from Home

Of the 10 semi-structured interview participants, four of the interviewees lived at home with their family, four lived with other roommates, and two lived alone. All of them lived off-campus at the time of the interview, though three had lived on campus in previous years of their undergraduate degree at U of T.
4.2.1.1 Students Who Live at Home

Participants living at home reported their parents often cook meals and pack lunches for them, and three participants reported regularly bringing lunch for the day. The one participant who lived at home and did not regularly pack food for the day explained they would prefer to pack food as it would be healthier, but this participant prefers purchasing pre-made foods in order to save time. The participant explained, “It is convenient because that way I can wake up later and just grab food when I get here”. This student prefers to purchase food in the mornings to avoid the lunchtime rush.

The other three participants living at home reported they bring food but struggle to pack enough food as the food containers are too bulky. For example, when one participant was asked if their food behaviours changed between high school and university, they reported, “Definitely! When I am down here [U of T] I eat a lot less, and that is something my mom bugs me about, but it’s just because I don’t want to carry so many containers”. This student commuted approximately an hour one-way on public transportation and wanted to minimize the number of bags they needed to bring.

Two of the other participants living at home also explained they tend to only pack a piece of fruit or sandwich since these foods occupy minimal space. Even though the participants’ parents tried to send leftovers, one student explained they choose not to bring the containers as the food is too messy. As such, when classes are finished for the day, the students reported high levels of hunger. One participant explained they sometimes purchase a snack on campus, so they can focus better while studying for an hour before commuting home. However, this student stated they do not like to eat much after class as they prefer to have a home-cooked meal prepared by their parents.
The other participant stated, “By 6 o’clock [when classes are over], I’m usually starving, but then it is a bit tricky because if I eat during that time, I ruin dinner at home, so I just tough it out for an hour until I get home”. This student also said food downtown is too expensive, and they prefer to eat out in their local neighbourhood as they can consume more food for a cheaper value. This participant stated,

*If I were to go to a Chinese restaurant uptown and order a pretty big dish, it would cost me maybe $6, and it would be good, but if I am down here and I am getting Chinese food from somewhere on Spadina [Chinatown], it would cost $11 and it would not be as big of a portion size.*

All of these students reported general satisfaction with their diet. The students tolerated their hunger at the end of the day, or minimally satiated themselves, as they preferred to return home to a large and affordable (or cost-free) meal. The one participant who lived at home who preferred to purchase pre-made meals said it was more convenient, but reported they wished to eat more homecooked meals to improve their health.

### 4.2.1.2 Students Who Live Away from Home

Six semi-structured interview participants lived away from home, and all of them reported residing within a 20-minute walk to campus at the time of the interview. Three students report they enjoy walking to their favourite food retailers between classes or at the end of the day. One student explained it is a nice break to eat off-campus with friends between classes. Majority of the students reported to eat out due to lack of time.

In other cases, the students who live away from home report they are sometimes too tired to prepare meals. The consumption of pre-made foods increased when students
report higher rates of stress. One student stated, “If I am stressed, I hit up an Indian curry place”, and further explained they eat out even if they are financially stressed.

Another student who lived away from home reported to often be stressed financially. This student purchased a flexible meal plan in order to consume more expensive food items in the dining halls, such as meat products. This student stated, “Meat is expensive. I eat meat when I am at the dining hall, but not when I am at home,” and continued to explain, “I am very conscious of my budget, and I also eat a lot, so if I started buying steaks, it would get very expensive, very fast”.

In some cases, students who lived away from home reported dissatisfaction with their meal plans when they lived on campus. One student was unhappy with their unlimited meal plan in first year as it was only available in their residence dining hall. The student explained if the residence was within 5-minute walking distance from campus, the residence-specific meal plan would have been sufficient food access. However, this participant lived at a residence that was approximately a 15-minute walk from campus, and the student did not have time to commute between classes. This participant also explained using the subway was not cost effective.

Another student who lived in residence further from the main part of campus during a previous academic year explained they were unable to return to the residence during the day to eat a meal. To remain satiated, this participant would eat large, calorically dense meals in the morning in attempt to minimize hunger for as long as possible. The student expressed overall dissatisfaction with the meal plan as they invested their entire
food budget for the academic year into the meal plan. Consequently, this student could not afford to purchase snacks. This student stated,

*I felt guilty if I bought food from anywhere else, because I purchased an unlimited meal plan and it was really expensive. I had a few flex dollars, but they ran out after first semester. So, if I went out for dinner with my friends, I would feel guilty because I could have eaten for “free” because I already paid for food back at the residence. That was annoying for me. But, at least compared to some of the other residences I went to, mine had a really good selection and variety. Well, at least until the very end because it gets repetitive by the end of the year.*

This student also explained they were unable to pack food with them for the day as they only had access to a shared kitchen space on their residence floor. The student stated the kitchen on the floor felt too dirty and was often too crowded to prepare food. Another student who lived in residence during their first year reported they did not pack food for the day due to roommate tension in their 6-bedroom residence condo. This student also did not have time to return to the residence and prepare food during the day when the other roommates were in class. As such, this student reported diet dissatisfaction and unintentional weight loss.

Some of the students who lived away from home and rented accommodation off-campus explained to purchase smaller amounts of groceries more frequently, as they are not able to carry a large amount of groceries at one time and/or because of limited kitchen storage space in their shared living arrangement.
One student explained to have created a schedule that enables them to cook meals, as it had been a struggle when they first started their post-secondary school studies. This student enjoyed cooking as a way to unwind after a day on campus and stated, “Cooking for me is kind of like therapy. I find it relaxing and I enjoy taking my sweet time to do things that I love”. Another student reported to prepare meals on the weekends which was an improvement from earlier years in their undergraduate degree.

The students who live away from home face a variety of circumstances when purchasing, preparing and consuming foods. In some cases, students do not have a kitchen or the funds to purchase desirable foods or sufficient amounts of food. In other cases, students are unable to prepare and consume foods at home due to poor housing infrastructure or roommate dynamics.

4.2.2 Food Behaviours of Students Who Have a Job in Addition to their Studies Versus Students Who Do Not Have a Job in Addition to their Studies

Four interview participants reported a job in addition to their studies. Only one of these students had a full course load and worked two jobs totaling approximately 30-hours per week. The other three employed students worked flexible hours ranging from four to 12 hours a week. The other six semi-structured interview participants did not have a job in addition to their studies, however two students volunteered on student committees.
4.2.2.1 Students Who Have a Job in Addition to their Studies

Three of the participants who had a job in addition to their studies worked flexible jobs that enabled them to choose hours that best accommodated their school schedule. Two of these participants reported working four to eight hours a week. These two students received emails approximately a month in advance from their employer that listed available shifts and enabled these students to create their work schedule. The participants reported satisfaction with this scheduling arrangement. One participant explained,

*I had so many other customer service jobs in the past, but I couldn't deal with them while also going to school because I had to work so much. But with my current job, I get the schedule a month beforehand, so I look at my school schedule and I just pick whatever shifts I want.*

These two students reported typically packing food with them for the day, and regularly adhering to a healthy diet. One of these participants prepared foods in bulk on the weekend, then portioned meals as needed throughout the week. The other participant relied on their family to purchase and prepare food.

Another participant reported working eight to 12 hours a week and noted they work in a flexible customer service role. This participant reported to typically be scheduled Friday through Sunday. However, this participant said they give away shifts during the academic semester to have more time for their studies. This student reported they do not pack food for school or work; they preferred to purchase food on the commute as they find eating out to be more efficient at food retailers like Subway or Tim Hortons.
The part-time employed students report they keep a job in addition to their studies to earn savings or support lifestyle habits. These students did not report their job position as a necessity or priority during the academic year. The participant who reported working approximately 30-hours a week in addition to their studies stated they had to work a lot in order to pay tuition and rent. This student reported employment scheduling satisfaction as it was highly flexible; the student worked as a research assistant and a teaching assistant, so the student used their laptop to complete all work-related tasks.

This participant explained to have a self-created and highly structured schedule to meet deadlines and complete tasks. The student stated, “I plan my time out well for work. I just take work a lot more seriously than school”. This student was in the sixth year of their undergraduate degree and took an additional two years to complete their studies. The student explained, “I have a lighter course load every semester to work and because it is cheaper tuition because you pay per course”.

Despite this student having student loans and two jobs, they reported having a strict budget and residing in poor quality housing. For example, during first year, this participant lived with eight roommates in a shared house with a rodent infestation. At the time of the interview, this student lived in a basement suite without many windows. They explained they prefer to eat on campus with their on-campus meal plan. This student further explained to be distracted preparing meals at home and that they adhere better to their schedule when they allocate a time-frame to purchase and consume food.

The three students that reported a flexible part-time job in addition to their studies reported the income supports lifestyle habits and contributes to savings. Two of the
students with a job in addition to their studies had time to prepare meals for school and work. The other two students reported eating meals out as they preferred to save time from preparing food.

4.2.2.2 Students Who Do Not Have a Job in Addition to their Studies

Six semi-structured interview participants did not have a job in addition to their studies. Two of these students lived away from their families and reported general satisfaction with their diets. These two students reported to try and pack food for the day, however they reported to eat out two to three times a week. Two other students who did not have a job in addition to their studies lived with their families and reported regularly consuming their parents’ food. All of these students did not report temporal constraints or financial constraints that impacted their food behaviours.

Two participants who did not have a job in addition to their studies reporting extra-curricular activities, as both of these students lived away from home and wanted to make social connections. These students reported enjoyment in preparing meals at home, but explained to eat out regularly when they are busy as they do not have time to prepare their own meals. One student reported,

*On my busy days, I usually wake up and have a granola bar on my way out the door. I have class from 9:00am to 1:00pm, then I walk off-campus with friends for food. Then I have class from 2:00pm to 5:00pm, and afterwards I usually find some more food somewhere, and then I go study. For example, yesterday I studied from 5:30pm until 11:00pm before walking home.*
The students’ schedules vary tremendously due to work commitments, extra-curricular activities, commute times, and general lifestyle activities. The participants who did not have a job in addition to their studies generally still enjoyed eating out two or three times a week, or were able to exercise regularly.

4.2.3 Food Behaviours of Students Who Identify as Female Versus Students Who Identify as Male

Six semi-structured interview participants identified as female. Four participants identified as male.

4.2.3.1 Students Who Identify as Female

Three of the female semi-structured interview participants had a flexible, part-time job in addition to their studies. Two female participants reported adhering to a well-structured budget, while the other four did not report following a budget.

Half of the female participants reported regularly packing for the day. One of these participants had a 40-minute commute on regional transit and did not want to bring many food containers, and instead packed food in disposable wrappers. The other two females who reported occasionally packing food for the day explained a higher tendency to bring a small container with rice and veggies. However, these two participants did not always have time to prepare food. The other three students who did not typically pack food for the day reported a lack of time for food preparation. Only one participant preferred purchasing pre-made or ready-to-eat foods to save time.
The six female participants reported varying life circumstances that influence their food behaviours, however there are no common trends amongst all female participants.

4.2.3.2 Students Who Identify as Male

Three of the four male participants were in their final year of their undergraduate degree. All of them reported enough time to prepare meals, however only two students regularly brought food with them for the day. The other two participants reported they did not have enough time to regularly prepare meals, or that they preferred to eat out. All of the male participants reported to try to exercise and follow a healthy diet, however only two reported to regularly exercise multiple times a week. One student reported to only cook quick and efficient meals at home and prefers to eat out to save time. There were no reports of food behaviours dissatisfaction amongst the male participants.

4.2.4 Food Behaviours of Students Who Reported Higher Rates of a Healthy Diet Versus Students Who Reported Lower Rates of Healthy Diet

This section presents self-reported health of diet as an influence on food behaviour. The experiences of six participants who explicitly report a healthy diet or report a higher tendency of consuming food prepared at-home are presented in, “Students who report higher rates of a healthy diet.” The experiences of the other four participants who reported a desire to change their eating habits, and higher consumption rates of pre-made foods are presented in “Students who report lower rates of a healthy diet”.
4.2.4.1 Students Who Report Higher Rates of a Healthy Diet

One semi-structured interview participant reported a healthy diet and rigorous tracking of caloric food intake due to strength training goals. This student reported to manage a healthy diet in addition to a full course load and working approximately 30-hours by scheduling tasks according to levels of importance. This student detailed these priorities and stated,

Taking care of myself is number one. I have a cork board at home that is a list of priorities I have to take care of, and it is listed first with work, then my own health, and then school.

This student also reported they do not cook regularly at home as they find it time consuming. This student stated,

I largely eat at New College dining hall but I eat out quite a bit in general. When I cook, the meals are really simple, otherwise I get carried away planning meals because I strictly count my calories and macronutrients because I weight-lift and am trying to put on weight in a healthy way. So, when I am cooking for myself, I am always cooking the same thing: frozen vegetables, bannock, eggs, that’s it.

Another participant who reported a healthy diet explained it is a by-product of their self-care. This student explained to regularly take breaks from university-life and commute 40-minutes on the weekend to visit family. They reported a dramatic improvement in their overall health when they consume nutritionally dense foods throughout the week and when they socialize with family on the weekends. They stated,
I do not have a lot of family, and the thing with my parents is that we are not a very vocal family. So, in a lot of ways, we love each through food. I have been lucky that I get to go back and get the traditional food that my parents cook.

This student also explained consuming pre-made foods was uncommon due to financial constraints. However, this student also reported to struggle preparing food during times of academic stress. As such, they report purchasing pre-made foods when coping with temporal constraints, regardless of financial constraints.

Two students who reported a healthy diet preferred eating their parents homecooked meals. Both of these students had a full-time course load, and reported adequate time to study, hangout with friends, and exercise. One student explained,

I am able to balance a work-study placement, plus do a bit of leisurely activity and go to the gym and still focus on my studies. The fact that I do not have to prepare food at home is a big plus because that really saves me a lot of time. I do not have to go grocery shopping, I do not have to prepare food in advance, I do not have to meal prep every week, so I think having parents cook for me really saves time. I just go home and there is food and I do not have to worry.

These six participants reported higher rates of a healthy diet due the prioritization of their health through exercise and/or mental breaks from university life. These students reported general satisfaction with their food behaviours and a healthy work-study-life balance.
4.2.4.2 Students Who Report Lower Rates of a Healthy Diet

One student reported to consume pre-made foods daily from Tim Hortons, Subway and McDonalds to save time. This participant reported a desire consume more foods at home, however this student reported eating out is more time efficient. This student did not report temporal constraints but did report prioritizing their school work in order to earn competitive grades for graduate school applications.

Two students reported regular consumption of pre-made foods as it is more time effective and easier to coordinate kitchen storage space with roommates. One student reported they did not prepare many meals at home as they enjoyed eating out with friends. This student reported moderate satisfaction with their diet, and expressed it was a dramatic improvement from their previous years as they struggled finding time between classes to eat. This student reported dissatisfaction in their food behaviours during this time as they would only be able to consume large meals in the mornings and evenings.

One other student reported food behaviour dissatisfaction due to consuming infrequent, but large meals. This student tended to purchase meals at all-you-can-eat restaurants or residence dining halls to maximize food consumption. This student also reported not enjoying cooking at home and would only have cereal and fruit in the kitchen.

4.3 Summary of Quantitative and Qualitative Analysis

This section presented descriptive statistics from the online survey, followed by a quantitative analysis. Hypothesis tests including difference of means and difference of
proportions tests were conducted to identify significant differences in food behaviours amongst sub-groups, stratified by living arrangement, gender, job status, and self-reported health of diet. The semi-structured interview analysis provided more lifestyle details and presented various influences on food behaviours in the same four themes used for the quantitative analysis. A discussion of the results is provided in Chapter 5.
Chapter 5
Discussion

5 Introduction

The study’s quantitative results are discussed in the first section, followed by a discussion of the qualitative results in the second section. Next, the common threads found in both the quantitative and qualitative results are identified, followed by a presentation of the differences between the quantitative and qualitative results. These discussions are contextualized and compared with the current literature on student health and food behaviours. In later portions of this chapter, recommendations for future studies are provided, and the limitations of this study are discussed.

5.1 Discussion of Quantitative Study Results

The quantitative results are discussed in four sections and contextualized within the current literature.

5.1.1 Living Arrangement and Food Behaviours

The online survey results indicated the four food behaviours significantly linked to living arrangement include, “purchasing their own food” with more students living at home not purchasing their own food, “sharing food at home” with more students living at home sharing food with the people they live with, “having a U of T meal plan” with more students living away from home having a meal plan, and “likelihood to pack food for the day” with more students living at home packing food for the day.
Moore and del Biondo (2017) explain food consumption is influenced by social, cultural, and economic factors, and the authors identify meals shared with friends and/or family provide an opportunity for individuals to express themselves. The authors also explain that social engagement during meals is important for self-confidence and self-actualization as it is a biological process developed over millennia. The quantitative results indicate living arrangements may influence \((p = <0.001)\) the likelihood of students sharing food with the people they live with, and that students who live at home are more likely to share food at home. Although a student sharing food with the people they live with does not explicitly mean food is consumed together, it does suggest a greater likelihood of not eating meals alone. This could be linked to an increase in opportunities for socializing, which as previously mentioned, can have positive health and well-being impacts.

5.1.2 Job Status and Food Behaviours

More than half of the survey participants (64 percent) reported they were unemployed. 34 percent of survey participants reported a part-time job, and just 2 percent had a full-time job in addition to their studies.

The quantitative analysis indicate that students who have a job are more likely to share food with the people they live with, pack food with them for the day, experience food related financial stress, and live at home. A study from Hughes et al. (2011) suggest students choosing to live at home is to reduce the cost of living during university. This finding may explain why this study’s quantitative results indicate that students who have a job in addition to their studies are also more likely to live at home and experience financial stress related to food purchases.
The data also demonstrate job status did not significantly influence food behaviours such as “enough time to prepare meals”, “buy your own food”, and “tendency to purchase campus food”. Therefore, it is difficult to discern whether there is a clear positive or negative impact on food behaviours and job status, as the results could indicate employment occurs with students who may need the money to remain in school. However, there may be more structure in their meals, as seen with students packing meals and sharing food with their housemates.

5.1.3 Gender and Food Behaviours
The majority of the survey participants identified as female (76 percent), while 23 percent identified as male. Gender is found to influence students reporting “enough time to prepare their meals”, with more men reporting they have enough time to prepare their meals, and “food purchases contributing to financial stress”, with more females reporting food purchases contribute to financial stress.

Many other aspects of food behaviour remained uninfluenced by gender though, including buy own food”, “share food at home”, “meal plan at U of T”, “pack food for the day”, and “tendency to purchase on campus food”. Therefore, in the context of this study, other influences such as living arrangement and self-reported health of diet may be better points of comparison than gender to understand undergraduate student food behaviours.

5.1.4 Self-Reported Health of Diet and Food Behaviours
The survey responses indicate 42 percent of students report a healthy or mostly healthy diet, while 58 percent report consuming a not very healthy or unhealthy diet.
The quantitative analysis results identify the five food behaviours significantly related to reports of a healthy diet include, “enough time to prepare meals” with more students who report a healthy diet having enough time to prepare meals, “buy own food” with more students who report a healthy diet not purchasing their own food, “pack food for the day” with more students who report a healthy diet packing food for the day, “tendency to purchase campus food” with more students who report an unhealthy diet purchasing campus food, and “Food purchases contributing to financial stress” with more students who report an unhealthy diet having food purchases contribute to financial stress.

Recent literature has noted that perceived lack of time is the most common barrier to young adults making healthy food choices (Clary et al., 2017; Devine, 2005; Hertzler and Frary, 1992; Pelletier and Laska, 2012). The quantitative analysis indicates similar results; students who report a healthy diet are more likely to report having enough time to prepare meals and are also more likely to report packing food to bring with them for the school day.

Multiple factors need to be considered when attempting to understand why some students feel they have enough time to prepare their own meals and pack food for school days. Dibsdall et al. (2013) suggest that without the intention of having more healthy food, there will be limited improvement in the consumption of healthy foods. Presumably then, a student who reports a healthy diet would purchase healthy food. However, the quantitative analysis indicates significant results ($p = 0.008$) that most students who report a healthy diet do not purchase their own food, thus suggesting these students rely on their families to purchase and prepare meals for them.
Students’ financial constraints may result in some students having a poorer quality diet due to a lack of funds (Meldrum and Willows, 2006; Patton-López et al., 2014). The survey analysis demonstrates self-reported health of diet is significantly influenced by the amount of financial stress caused by food purchases, and that students who report an unhealthy diet also experience financial stress related to food purchases. Self-reported health of diet is also significantly influenced by “end of month finances”, with the more students who report a healthy diet have enough money at the end of the month for living expenses.

5.2 Discussion of Qualitative Study Results

The qualitative results are discussed in four sections and contextualized within the current literature.

5.2.1 Living Arrangement and Food Behaviours

In their 2008 paper titled “Creating healthy food and eating environments”, Story et al. highlight the importance of social context when consuming food, such as social norms during meal times with family and friends. The semi-structured interview prompt question, “Do you make exceptions to the types of food you want given your social/personal circumstances?” resulted in conversations about the physical and social settings students are exposed to which may influence food behaviour. All of the participants who live away from home reported they felt lonely at one point or another during meal times throughout their academic career. The reports of loneliness for these students are unsurprising as they are removed from their routine and family at home.
In contrast, participants who live at home during university did not report feelings of loneliness during meal time. Instead, the participants who still lived with their families reported their preference of returning home for meals because they enjoyed their parents cooking and the comforts of their home.

Both groups of students who live at home, and students who live away from home also reported to sometimes enjoy eating meals alone while watching Netflix or studying as it helps them unwind. Therefore, eating alone is not inherently detrimental to mental health, however students living at home have increased access to consuming food with others, thus preventing potential feelings of loneliness during meals, compared to students who live away from home.

Another aspect to consider when discussing living arrangement and its influence on food behaviours include students who live away from home and who have a residence meal plan. Although residence dining halls may foster and promote a setting for social engagement, which is important for student mental health (Moore and del Biondo, 2017; Story et al., 2008), some students reported dissatisfaction with their meal plans as they struggled finding enough time between classes to commute to the dining hall and consume a meal, despite social engagement opportunities. Instead, these students reported dissatisfaction as they were limited to consume only two large meals a day due to time constraints in commuting to the dining hall between classes. This aligns with a finding by Booth et al. 2011 who reported the built environment influences dietary behaviour and health outcomes.
In some cases, students may choose to pack food to bring with them for the day to avoid campus influences on their food behaviours, such as limited time between classes or higher priced food options. However, some of the semi-structured interview participants who lived away from home indicated they were unable to prepare food in their dorm because they did not have a kitchen, and/or did not desire prepping food in the shared kitchen.

In comparison, the semi-structured interview participants who lived at home reported packing food more frequently, thus avoiding potential food access limits in navigating the campus food environment. Therefore, navigating the campus food environment as an option, instead of a requirement, enhances a student’s food behaviours as they have more options to purchase and consume foods.

5.2.2 Job Status and Food Behaviours

Only four semi-structured interview participants had a job in addition to their studies. One of these four students reported a reduced course load in order to work more hours and pay reduced tuition payments every semester. A study by Robb et al. (2011) also suggest some students need to reduce their course load to minimize student loan debt and to maximize working hours. However, the other three students who reported a job in addition to their hours reported their income was to supplement their lifestyle and to save funds for future academic endeavours.

The other six participants who did not report a job in addition to their studies reported to participant in other activities, including volunteering in faculty clubs and community groups.
5.2.3 Gender and Food Behaviours

A study by Lowery et al. (2005) suggests female body image amongst first year college students is typically poorer than males. However, the qualitative data suggest food behaviours and general satisfaction of diet generally did not differ between female and male participants. One female participant reported preference to eating pre-made and ready-to-eat foods in order to save time, but this participant also stated they would like to eat more homecooked meals as it would be more healthful. A male participant also reported a preference to eat out in order to save time, however this participant reported to regularly dine at restaurants or dining halls instead of ready-to-eat food retailers as they rigorously tracked their caloric food intake.

Another study by Larson et al. (2006b) highlights women are typically more involved in preparing food and consuming meals with their families, however the qualitative data did not reflect this finding. Instead, one female and one male semi-structured interview participant reported they enjoyed cooking as it helped them relax after a day on campus.

5.2.4 Self-Reported Health of Diet and Food Behaviours

Most of the semi-structured interview participants reported the quality of their diet decreased during times of stress. A study by Zellner et al. (2006) also found that students tend to consume less healthful food during times of stress. In other cases, the qualitative data demonstrate interview participants reported diet dissatisfaction when they had a residence meal plan as they were financially restricted to only consume foods in their residence dining hall. Another factor contributing to reports of diet dissatisfaction amongst participants with residence meal plans included discomfort
preparing food in the shared kitchen, and inadequate time between classes to commute and consume a meal.

These reports of diet dissatisfaction align with a study by Larson et al. (2006a) that found students were more likely to report a more balanced diet when they purchased groceries and prepared meals at home. While some semi-structured interview participants reported a healthful diet and purchasing groceries regularly, three of these participants did not regularly purchase groceries and prepare meals as they relied on their parents to provide food.

The food environment in downtown Toronto can be classified as a food swamp, which is an area with an overabundance of food retailers with lower nutritional offerings (Minaker et al., 2016). One of the participants reported food quality is poorer, portion sizes are smaller, and prices are more expensive in downtown Toronto, in comparison to suburban neighbourhoods. This participant avoided these food options and preferred relying on their parents to purchase and prepare foods outside of downtown Toronto.

The food options in downtown Toronto may be a concern for some students who live close to campus, as they may have limited options to commute to suburban regions for cheaper food options. Other factors such as limited kitchen storage space, restricted public transit funds, and only being able to purchase as many groceries as an individual can carry may decrease a student’s access to healthful foods. These decreased food access options are problematic because we know students are at a higher risk of food insecurity (Dubick et al., 2016; Hughes et al., 2011),
Participants who reported consuming a healthy diet explained they make healthy food consumption a priority for their mental and/or physical health, or that their parents prepare food and pack lunches for them. Participants who reported an unhealthy diet explained to not have enough time to prepare their own meals and/or regularly opted for ready-to-eat foods. Overall, financial and temporal constraints may limit students from consuming a healthy diet and fully enjoying their post-secondary school experience, as Hughes (2009) found that students struggling to consume healthy foods may experience negative impacts on their health and well-being.

5.3 Comparing and Contrasting the Quantitative and Qualitative Results

The similarities and difference between the quantitative and qualitative results are presented in four sections that reflect this study’s research questions.

5.3.1 Living Arrangement

The quantitative and qualitative data demonstrated similar results for student food behaviours depending on their living arrangement. For example, the online survey data indicate students who live at home are less likely to purchase their own food and are more likely to share food with the people they live with. The semi-structured interview data found similar results, and that students who lived at home relied on their parents to purchase food and prepare meals. The interview participants also reported they enjoyed returning home to consume meals with their family.
Two of the interview participants who reported regularly consuming meals with their family reported it was more cost effective. A study by Hughes et al. (2011) similarly found that students tend to live at home to save money, and this suggests students may choose to live at home to reduce their cost of living during their university. In doing so, students may be able to maintain balanced food behaviours. Finally, the online survey indicated more students living away from home have a meal plan, and all of the semi-structured interview participants who reported to have a U of T meal plan also lived away from home.

5.3.2 Job Status
Half of the semi-structured interview participants who had a job in addition to their studies were not responsible for errands and other household tasks as they were taken care of by the family members they lived with. These students reported they were able to maintain a job in addition to their studies because they were unconcerned with household chores and meal preparation. One semi-structured interview participant with a job in addition to their studies reported to work two jobs in addition to their studies. This student reported two jobs were required to supplement their student loans in order to afford tuition fees and rent.

A study by Munro et al. (2013), and Meldrum and Willows (2006) also found that students with financial aid were more susceptible to experience food insecurity despite supplemental monetary support. The quantitative data also suggest that students who work in addition to their studies experience financial stress related to food purchases. These similar results indicate that students coping with financial stress may also face temporal stress in order to maintain a job in addition to their studies.
5.3.3 Gender
Quantitative and qualitative data both demonstrate gender is not a major influence on undergraduate student food behaviours. However, the higher female response rate for this study may suggest females are more conscious of food consumption and food behaviours. For example, Lowery et al. (2005) indicate that females are more conscious of their food consumption due to dietary concerns and body image.

5.3.4 Self-Reported Health of Diet
The quantitative results indicate that students who reported an unhealthy diet are more likely to experience financial stress related to food purchases. However, the qualitative data does not explicitly suggest reports of an unhealthy diet are due to financial constraints. For example, two students who reported an unhealthy diet preferred to consume ready-to-eat foods regularly, while others reported to eat ready-to-eat foods during stressful times.

In other cases, two semi-structured interview participants reported moderate dissatisfaction with their diets due to budget constraints. Both of these students invested their food budgets into residence meal plans and were unable to eat during the day as they did not have enough time to return the dining hall and could also not afford food from other food outlets. Therefore, both the qualitative and quantitative results reflect other studies that demonstrate that university fees and living costs during undergraduate degrees may limit funds for food (Roberts et al., 1999; Robb et al., 2012).
Finally, Dibsdall et al. (2003) point out, without the intention of purchasing more healthy foods, there will be limited improvement in the consumption of healthy foods. This study found similar results. The quantitative data demonstrate students who report a healthy diet are more likely to have enough time to purchase and prepare their own foods. The qualitative data are show students who report a healthy diet prioritize consuming healthy foods in addition to financial and temporal pressures.

5.4 Study Limitations

This study has attempted to gather sufficient quantitative data through an online survey, and sufficient qualitative data through semi-structured interviews. These methods attempted to gain insights into undergraduate student food behaviours. Despite the efforts to produce robust and detailed results, this study has a number of limitations.

5.4.1 Limitations of Participant Recruitment and Data Collection

This study’s results are statistically (in)significant for the female student body population at the St. George campus of U of T because of the high female response rate (76 percent of respondents). Improved male-only recruitment methods for the online survey would have resulted in a more equal response rate that better reflects the U of T student body gender divide. Additionally, the total usable survey respondents (n = 590) likely did not capture students who do not regularly check their course emails, students who do not come to campus to see campus posters, and students who are not active on campus-related social media platforms.
Another limitation of the study population is that all of the semi-structured interview participants were recruited from the online survey. This recruitment method is problematic as students who may be experiencing the most intense temporal and financial constraints may not have participated in the survey, and are therefore unaccounted for in this study.

5.4.2 Limitations of the Online Survey

To maximize potential survey respondents, the survey was designed to be brief and contained only 20-questions. This time-sensitive strategy was used to attract as many participants as possible. However, this survey designed limited the variety of questions that could be asked. Additional questions that would have been helpful to include are questions related to grade average and academic performance, food preparing and consumption satisfaction levels, living arrangement satisfaction levels, school-related stress levels, happiness and/or loneliness during meal times, and food consumption in relation to stress levels.

Also, the survey did not define a healthy diet. Instead, the question was, “Do you feel you have a healthy diet?”. This question leaves room for interpretation and students may have inadvertently reported an inaccurate (un)healthy diet.

5.4.3 Limitations of Quantitative Methods and Analysis

The quantitative analysis used difference of means and difference of proportions tests to determine statistically (in)significant outcomes for the data. Though this method is helpful in identifying meaningful influences of student food behaviour between groups, it
does not fully capture the complexities of student food access. Additionally, the recategorization of survey questions and elimination of certain survey questions prevented this study presenting more robust and highly detailed results. If analyses were to be conducted using this data in the future, those studies would likely benefit from the inclusive and in-depth review of the survey questions, “how was your tuition paid this semester?”, and “when do you tend to purchase food for your house?".

Future assessment using this data would likely benefit from including multivariate regression models as they would provide insights into the overlapping variables that influence a student’s food behaviours and would therefore provide a more complete picture of undergraduate student food behaviours. Also, a Geographic Information System (GIS) analysis conducted with the participant postal code information would provide detailed geographic insights to where student access food and how space influences student food behaviours.

5.4.4 Limitations of Qualitative Methods and Analysis

The assessment of the semi-structured interviews is inherently biased because the primary investigator led the interviews and attempted to build a rapport with them. Therefore, the questions would have likely been phrased in a way that unintentionally influence participant responses. The questions and conversations were also unintentionally influenced by the primary investigator’s racial, gender, and economic positionality. These interviews also lacked explicit questions about monthly budgets, tuition payments and self-reported health of diet, all of which would have provided a direct insight into how these factors influence students’ food behaviours.
Chapter 6

Conclusions

6 Study Conclusions

Food behaviour and food insecurity are multifaceted topics that are difficult to assess and understand. Undergraduate students are at a higher risk of food insecurity as they are in a life transition between childhood and adulthood. There is little understanding of how dietary habits and food behaviours are impacted during life transitions, such as during university, even though we know undergraduate students are at a higher risk of food insecurity (Hughes et al., 2011).

This study examined undergraduate food behaviours through a mixed methods approach to answer four research questions: 1) “Do undergraduate food behaviours differ between students who live at home versus students who live away from home?”, 2) “Do undergraduate food behaviours differ between students who have a job in addition to their studies versus students who do not?”, 3) “Do food behaviours differ between students who identify as female, male, or in another way?”, and 4) “Do food behaviours differ between students who report a healthy diet versus students who do not report a healthy diet?”. An online survey was conducted in March 2018, at the University of Toronto and used data from 743 online survey respondents and 10 semi-structured interview participants to assess these research questions and to improve our understanding of undergraduate food behaviour. The participants for the study were recruited via email, social media postings, and campus posters.
The quantitative data demonstrate living arrangement influences food behaviours as students who live at home typically rely on their families to purchase and prepare foods. In comparison, students who live away from home are responsible for their own food consumption. Also, the quantitative data demonstrate students who report a healthy diet are more likely to have enough time to prepare food and pack meals for the day, whereas students who reported an unhealthy diet are more likely to report financial stress related to food purchases.

The qualitative data also suggest that living arrangement influences undergraduate food behaviour. For example, students who live at home typically enjoy meals with their families and are able to have a healthy work-study-life balance. On the other hand, students who live away from home are required to allocate enough time and money to purchase and prepare food in addition to their studies. Additionally, the qualitative data demonstrate that students who report a healthy diet are more likely to prioritize healthful food consumption by following a schedule and allocating enough time to purchase and prepare food.

Overall, these results indicate healthful food behaviours amongst undergraduate students can be attributed to personal preference and dedication to consuming high nutrient quality food. However, we know food access is complex and that students in particular face unique barriers to purchasing, preparing and consuming healthy food. Therefore, this study has attempted to capture the multiple factors that need to be considered in understanding undergraduate food behaviours.
This study demonstrates that a mixed-methods approach examining undergraduate food behaviours provides a deep insight for university students health and well-being. Universities and public health researchers should consider these research methods when planning post-secondary school programs and course schedules as the university’s structure and requirements have a dramatic influence on students’ food behaviours, and therefore, their academic performance. Overall, research about undergraduate food behaviours conducted by universities, public health researchers, and planners will result in a deeper understanding of how students view and navigate their foodscape, thus ultimately contributing to student success and well-being.
References


Appendices

Appendix  A - Online Survey Participant Consent Form

The following consent form was provided at the beginning of the online survey for students chose to provide consent to participate in the survey:

“I consent to my survey response being used for this research. I understand that my responses may be used for further analysis for the research project *Understanding Undergraduate Food Behaviours*.

I understand I can skip a question or quit the survey at any time. Further, I understand that by providing my email address, I will be eligible to win one of 10 gift cards to Second Cup worth $10 if I complete the entire survey.

Any personal identifying information will be kept in a secure, password protected computer at the University of Toronto, and not disclosed in any form or at any time. Personal identifying information will be deleted at the conclusion of this research project in May 2019.”

*Participants select yes or no*
Appendix B - Online Survey Questions

These are the questions online survey participants completed.

**Please enter your University of Toronto Email address:**
*Write in text box*

**How old are you?**
*Number box*

**What is your gender?**
Female
Male
I identify in another way (please specify):
*Write in text box*

**Are you an undergraduate student at U of T, St. George Campus?**
Yes, full-time
Yes, part-time
No

**Are you registered as a Domestic, Indigenous, or International student?** *Select all that apply*
*Check boxes*

**How was your tuition paid this semester?** *Select all that apply*
Loans
Family
Personal Savings
Scholarship/ Bursary
Other (please specify)

**What is your postal code?**
*Write in text box*

**Do you live with roommates, family, alone, etc.?** *Select all that apply*
Alone
Alone with children
With 1 roommate unrelated
With more than 1 roommate unrelated
With parents, guardians, or other family members
With my partner/spouse
With my partner/spouse with children
Other (please specify)
Do you purchase your own food?
Yes
Usually
Sometimes
No

Do you share food with the people you live with?
Yes
Usually
Sometimes
No

Do you have a job(s) in addition to your studies?
No
Yes, part-time (less than 20 hours a week)
Yes, part-time (20 to 30 hours a week)
Yes, full-time (30 or more hours a week)

Do you currently have a meal plan at U of T?
No
Yes, and I eat most of my meals on campus
Yes, but I only occasionally eat on campus

When do you tend to purchase food for your house? Select all that apply
On my commute home from school/work
On a specific day of the week (i.e. Sunday is grocery shopping day)
When I get paid
I do not typically purchase food for the house
I prefer to eat out/grab take-out
Other (please specify)

How often do you pack your food to take with you to school/work?
Everyday
Most Days
Sometimes
Rarely
Never

Do you feel that you have enough time to prepare your own meals?
Yes
Usually
Sometimes
Not really
No
Do you feel you have a healthy diet?
Yes
Mostly
Not really
No

Do you tend to purchase food on-campus?
Yes, it is convenient
Yes, I like the selection
No, it is too expensive
No, I do not like the options
Other (please specify)

If you eat pre-made/ready-to-eat food, do you prefer to go off campus?
Yes
Usually
Depends
No
I do not tend to eat pre-made/ready-to-eat foods

In general, does purchasing food contribute to financial stress for you?
Always
Often
Sometimes
Rarely
Never
Prefer not to answer

At the end of the month, do you feel you have enough money for rent, bills, and food?
More than enough money
Enough money to be comfortable
Break even
Stressed for next month's rent, bills, living expenses
Not enough money
Prefer not to answer
Appendix  C - Email Request to Professors to Distribute Online Survey

The following is an email draft that was sent to 117 professors requesting that they distribute the link to their students to participant in my online survey:

“Dear Dr. ____,

My name is Hannah Wilkinson and I am a master’s student in the department of Geography and Planning under the supervision of Dr. Michael Widener. Currently, I am administering an online survey about undergraduate student food access in relation to time and financial constraints, and I am recruiting students from across all departments and faculties at U of T.

I would like to request that you please kindly distribute the link to my survey. The survey distribution is relevant to the students in your ____ lecture(s) because it provides an opportunity for them to share their unique food access experiences. Additionally, food access and physical well-being is linked to academic performance.

The survey has 20 brief questions and only takes approximately 3 minutes to complete. Also, I have written an email for your convenience to be copied and pasted at your will:

“Greetings students,

Please take 3 minutes to complete the following 20 question survey about student food access. You will be contributing to graduate research on how time and financial constraints influence undergraduate food (in)security. Also, if you successfully complete the survey, you will be entered in a draw for a chance to win 1 out of 10 gift cards for Second Cup valued at $10.

https://www.surveymonkey.com/r/uoftstudentfood

Thank you for your participation."

Please let me know the outcome of your decision and if you have any further questions and/or comments. Thank you for your time, and I hope to hear from you soon.

Sincerely,

Hannah Wilkinson

This study is Research Ethics Board approved”
Appendix D - Participant Recruitment Flyer

This flyer is the on-campus advertisement that was placed on bulletin boards in multiple buildings across the St. George campus.

Do You Eat Food?

Survey Participants Wanted
Online Survey
About Undergraduate
Food Access

Quick and Painless!
Only 20 Questions &
Just 5 Minutes

What’s in it for you?
$10 Second Cup Gift Card
Chance to Win 1 of 10 in Random Draw!

Participate
Uoftstudentfood.wixsite.com/food

Grab the Info to Access the Online Survey
Appendix E - Email to Semi-Structured Interview Participants

The following email is the draft that was sent to potential participants who provided their email address in the online survey to be contacted for a semi-structured interview.

“Greetings ___(name)___.

My name is Hannah Wilkinson and I am conducting the study titled Understanding Undergraduate Food Behaviours for my master’s research. Thank you for completing the online survey on ___(date)___ about food access and expressing your interest in a semi-structured interview.

The nature of a semi-structured interview is relaxed and conversational. If you were to participant, I will ask general questions about your demography and academic studies in relation to your food access and time management.

Before deciding to participate and scheduling an interview, please understand the following terms and conditions:

• The interview will be audio-recorded and may be used for further analysis for this research. At the beginning of the interview, you will be requested to provide consent.
• Upon the successful completion of the semi-structured interview, you will be automatically given a $10 gift certificate to Second Cup. Therefore, your name will be removed from the online survey draw for a $10 gift certificate. However, if you choose to withdraw from the interview, your name will be added back into the online survey draw.
• In order to participate in a semi-structured interview, you must be an undergraduate student at the St. George campus of the University of Toronto.

If you would like to proceed in scheduling a 20-minute semi-structured interview to talk about your food access experiences, please respond with your available times to meet.

Thank you again for your interest and participation. I greatly appreciate your contribution.

Sincerely,

Hannah Wilkinson

This study is Research Ethics Board approved”
Appendix  F - Semi-Structured Interview Consent Form

Below is the consent form that semi-structured interview participants signed to acknowledge they understand the study and provide consent for their interview to be transcribed and used for further analysis.

PARTICIPANT INTERVIEW CONSENT

This is the agreement form that the volunteer will sign if they decide to participate in a semi-structured interview:

I _________________________ agree to participate in a semi-structured interview administered by Hannah Wilkinson for the study titled Understanding Undergraduate Student Food Behaviours. I understand that the information I share may be used for analysis in the study, and that I can withdraw at any time or refuse to answer a question. I also understand that if I do not complete the interview, I will not receive the $10 gift card to Second Cup.

____________________________________   __________________________
Signature                                      Date
Appendix G - Semi-Structured Interview Prompt Questions

The following questions are the prompt questions that were used as my guide during the semi-structured interviews. These questions were not explicitly asked, but rather, points to refer to ensure the conversation was being directed toward the research questions.

SEMI-STRUCTURED INTERVIEWS

These are the prompt questions for the semi-structured interviews

What area in the Greater Toronto Area do you live in, and who with? (Roommate relations, affordability, etc.) – gender and age

Do you work in addition to school or have other commitments? How do these other commitments affect your responsibilities and your day-to-day life?

How do you allocate your time and resources to ensure you can access food?

Do you feel you face any barriers to accessing food? Do you make exceptions to the types of food you want given social/personal circumstances?