Predicting local food purchase intention of domestic and international university students

By

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ABSTRACT

PREDICTING LOCAL FOOD PURCHASE INTENTION OF DOMESTIC AND INTERNATIONAL UNIVERSITY STUDENTS

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The purpose of this research was to verify the definition and purchase intention of local food by domestic and international students at a university in Canada. A total of 218 questionnaires were distributed in School of Hospitality, Food, and Tourism Management undergraduate classes at the University of Guelph in April, 2017 resulting in a response rate of 90%. Using multiple regression analysis and Theory of Planned Behavior as a theoretical framework with an additional construct, moral norm, proposed hypotheses were tested. Domestic students narrowly defined local food based on distance (food grown/raised within 100km of where a person lives) compared to international students (food grown in Canada). The multiple regression analysis revealed that 37% of variance in purchase intention is explained by the four independent variables in the model. In lined with TPB, all four constructs (attitude, subjective norm, perceived availability, and moral norm) positively influenced the local food purchase intention. A perceived availability construct revealed the strongest effect on intention to purchase local food.

Key Words: Local food; Purchase intention; Domestic students; International students; University students; Theory of Planned Behavior
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CHAPTER 1: INTRODUCTION

Consumers’ demand for locally-grown or produced food has been increasing in developed countries (Penney and Prior, 2014; Jones et al., 2004; Morris and Buller, 2003; Bianchi and Mortimer, 2015). Farmers markets in Ontario, Canada shows continued growth on annual basis according to impact study 2009 reported by Farmer’s market Ontario (Farmers’ Market Ontario, 2009). Estimated compound annual growth at farmer’s markets was 7.3% (direct sales) (Farmers’ Market Ontario, 2009). According to International Market Bureau report prepared by Agriculture and Agri-Food Canada (2010), there were 508 farmer’s markets across Canada and in 2008, with 28 million customers visiting these markets and spending $ 32.06 CAD per visit. The total value of the direct sales was estimated at $1.03 billion.

1.1 Background: Local food and the University of Guelph

The University of Guelph has close relations with the topics of the environment, agriculture, food, and local communities. The Ontario Agriculture College (OAC) was established in 1874 and it is foundation college of the University of Guelph (Ontario Agriculture College: About, 2017). According to the OAC, the University of Guelph is recognized as the largest and most well-known agriculture educational institution in Canada (Ontario Agriculture College: About, 2017). Departments within the university focus on four main areas: environment, agriculture, food, and communities (Ontario Agriculture College: About, 2017).

In keeping with these foci, student-dining services include local food in students’ menus. Menu items were created based on selected Ontario province ingredients, which include 100 percent local-beef burgers, and a variety of condiments, which are served at 100 Mile Grille restaurant at Creelman Hall (Kenny, 2014). Moreover, the University of Guelph Hospitality
Services actively supports local farmers in Ontario; their motto is “Preserving Local, Sustaining Ontario”. This is possibly one of reasons that a Globe and Mail survey recognized the University of Guelph Hospitality Services as the number one foodservice operation among Canadian universities (medium-sized) for 10 years in a row (Kenny, 2014). Overall, the consumers’ increasing interest in local food has emphasized the need for more research.

1.2 Research Objective

The research objective is to examine and compare some of the determinants of local food purchase intention of both domestic and international students at the University of Guelph campus by applying the theory of planned behavior.

1.3 Importance of research

Discovering the definition and purchase intention of both domestic and international students to purchase locally grown food at university may provide better marketing strategies for the local food growers, university hospitality service, and the food retailers serving the campus community.

1.4 Research questions

Based on the study objective, the following research questions are examined:

- How do students define local food and local food category?
- Is there a difference in how domestic and international students define local and local food category?
- What are the determinants of domestic and international university student’s intention to
purchase local food?
CHAPTER 2: LITERATURE REVIEW ON LOCAL FOOD

2.1 Definition of Local food

Numerous authors have wrestled with the question of how to define “local food”. Existing definitions tend to use distances from producer to consumer or jurisdiction identifiers (such as a province). (Brooker et al., 1987; Wilkins et al., 2000; Wilkins, 2002; Brown, 2003; Zepeda and Leviten-Reid, 2004; Conner et al., 2010; Eičaitė and Dabkienė, 2015). However, regardless of these efforts, there is no distinct universal definition of local food currently accepted (Jones et al., 2004; Chambers et al., 2007; Lang and Qu Gardyn, 2014; Bianchi and Mortimer, 2015).

To demonstrate the basic concept of local food, the following two definitions by USDA and CFIA were employed. The 2008 Food Conservation, and Energy Act from the United States Department of Agriculture’s (USDA) Economic Research Service (ERS), defines local food as food that has to travel no more than 400 miles from the place of its origin to the consumer or can originally grow in the consumer’s state (Martinez et al., 2010). The Canadian Food Inspection Agency (CFIA) adopted a slightly different definition, which recognizes “local” as: food produced in the province or territory in which it is sold, or food sold across provincial borders within 50 km of the originating province or territory” (Government of Canada, 2014). Although differing in detail specifies, the similarity of both definitions is that they are based on travel distances and origin of food.

Other units of analysis have also been used to define ‘local’, including political boundaries such as provinces, countries, states, and regions are frequently used (Herrin and Gussow, 1989; Wilkins et al. 1996). Using political boundaries as the unit of analysis was based on the fact that agricultural production data and population statics are collected in this manner by provinces,
states, countries, and regions (Wilkins, 2002). Conner et al. (2010) observed consumers’
definition of local food at farmer’s market Michigan, USA. Consumers defined local food as
grown within state (Michigan). In a case of Europe, 54.7% of Lithuanian residents’ stated local
food as produced within more than 100km from their residence (Eičaitė and Dabkienė, 2015),
whereas households from Southeast Missouri, USA defined locally grown as regional concept -
e.g. southeast Missouri region rather than the statewide concept e.g. Missouri (Brown, 2003).

Zepeda and Leviten-Reid (2004) discovered different demographic groups may define local
food differently. They used focus groups to compare definitions between two local food and two
non-local food shoppers’ groups. African-American participants from non-local food shoppers
groups defined local food in much larger geographical boundaries: within a state, nearby states
and within the USA (Zepeda and Leviten-Reid, 2004). These definitions were link to large
personal geographic networks- e.g. a participant born outside of the USA and participants
connected with other states (Zepeda and Leviten-Reid, 2004). In addition, definitions were based
on more personal context compared to other groups- e.g. produced by someone they know or
produced from relative’s garden whereas, Caucasian non-local food shoppers’ definitions were
based on distances, estimated through driving times (Zepeda and Leviten-Reid, 2004).

In the case of students, Wilkins et al. (2000) observed, at a university in USA, the awareness,
usage, and meaning of a term “local” food. According to Wilkins et al. (2000), 75% of students
had heard the term “local” food but only 27% of students used it. More than half (65%) of
students stated meaning of the “local” food based on place where food was produced (Wilkins et
al., 2000). Regardless of all these past efforts, latest study of Aprile et al. (2016) noted that no
commonly recognized single definition of “local” existing. There is little empirical research on
the relationship between students and the definition of local food. Therefore, further
investigations are needed in order to understand the relationship between students and definition of local food.

### 2.2 Social, health, environment, and economic benefit of local food

Previous research on local food was able to identify four benefits of local food: social, health, environmental, economic. Feagan (2007) was able to explain social benefit of local food that local food system (LFS) can act as reattachment to place and strengthen people’s identity. According to Feagan (2007), LFS can be a tool contributing to the reattachment to place (Feagan 2007, p.37). “When our identities are seemingly threatened by physically lengthening food chain. . . the LFS movements portend or offer some psychological solutions or antidotes to this “thinning”- the reconstitution of homo-geographicus” (Feagan 2007, p.37). Pretty (2001) mentioned that local food system can bring social benefit by creating more connection and trust between food providers and consumers at the UK. Social benefit of local food contributes to a reconnecting the relationship between producers and consumers, which can lead to better understanding between urban and rural residents (Pearson et al., 2011).

Health benefits of local food are often cited as one of important drivers that encourage consumers to consume local food from previous findings (Eičaitė and Dabkienė, 2015; Bianchi and Mortimer, 2015). For environmental benefit, Pearson et al. (2011) mentioned that shorter travel distances of local food will prevent over-packaging of produces to keep the produce fresh. Conner et al. (2010) mentioned that consumers’ interest for local food is increasing because they can contribute to improve food system to be sustainable by reducing the carbon footprint and by providing new business openings for local farms. Economic benefits of local food have also been frequently cited (Pearson et al., 2011; Sacks, 2002). According to Pearson et al. (2011), local
food brings economic benefit by revitalizing local service, horticultural practices, and food infrastructures/supply chains at local community. Sacks (2002) explained that money spent to purchase local produce tends to remain longer in the local community, thus contributing to local economy growth.

Despite of all the benefits mentioned above, Born and Purcell (2006) warns of three problems associated with the localization of food, which they referred it as a “local trap”. “Local trap refers to the tendency of food activists and researchers to assume something inherent about the local scale” (Born and Purcell 2006, p.195). The assumption of local being desirable means preferring the local scale a prior to larger scales (Born and Purcell, 2006). Outcomes that are claimed arising from local production may consist ecological sustainability, social justice, democracy, better nutrition, and food security, freshness, and quality (Born and Purcell, 2006). However, Born and Purcell (2006) argued these assumptions may not be supported by evidence. For instance, by using the case studies, Born and Purcell (2006) explained that there were different outcomes from local-scale food system; one outcome as greater democracy but the other outcomes very different as oligarchy. Secondly, local trap can cause confusion between strategies and ultimate goals (desired outcomes) during the planning. This means that pursuing localization should be treated as a strategies to achieve desired outcomes such as ecological sustainability, social justice, democracy, better nutrition, and food security, freshness, and quality in community but not as ultimate goals in their own right. Lastly, local trap can blind the decision of the planners because it can conceal other more effective strategies to achieve ultimate goals (desired outcomes).
Born and Purcell (2006) provided followings advices for the planners to avoid the local trap pitfall. Firstly, use the scale as the strategy to determine the desired outcome by answering following questions:

- “Who will benefit from localization?”
- “What is their agenda?”
- “What outcomes are most likely to result from a given scalar strategy?” (Born and Purcell, 2006, p.205).

Born and Purcell (2006) suggest applying scale theory to avoid local trap during planning. For instance, pay close attention to the scale during community development by reviewing following questions:

- “At what scale is the community defined?” (Anderson and Cook, 1999; Born and Purcell, 2006, p.205).
- “What goals is community development trying to achieve?” (Born and Purcell, 2006, p.205).
- “Is the development at the scale of the community the best strategy to achieve those goals or are other scales more effective in a particular context?” (Born and Purcell, 2006, p.205).

To sum up, Born and Purcell (2006) recommend that the planners need to consider the following questions to avoid the local trap during the planning.
2.3 Research trends in local food

The following research interests of consumers and local food have been studied over the past three decades: (1) consumers and local food (Brooker et al., 1987; Eastwood et al., 1987; Bruhn et al., 1992; Wilkins, 1996; Wilkins, 2002; Brown, 2003; Zepeda and Leviten-Reid, 2004; Chambers et al., 2007; Carpio and Isengildina-Massa, 2009; Onozaka et al., 2010; Mirosa and Lawson, 2012; Penney and Prior, 2014; Bianchi and Mortimer, 2015; Eičaitė and Dabkienė, 2015; Aprile et al., 2016); (2) farmer’s market visitors and local food (Feagan et al., 2004; Schneider and Francis, 2005; Conner et al., 2010; Detre et al., 2010); (3) students and local food (Wilkins et al., 2000; Detre et al., 2010; Campbell et al., 2014). Four themes run through this literature, as noted below.

2.3.1 Definition of local food, usage of term “local” food and support for local food

Previously, the definition of local food, a usage of term “local” food and, a support for local food by consumers is a common topic (Brooker et al., 1987; Wilkins et al., 2000; Wilkins, 2002; Brown, 2003; Zepeda and Leviten-Reid, 2004; Conner et al., 2010; Eičaitė and Dabkienė, 2015). Early research undertaken by Brooker et al. (1987) identified consumers’ preferences for in-state versus out-of-state produce at retail outlets based on five products: apples, broccoli, cabbage, peaches, and tomatoes at Knox County, Tennessee, USA. Consumers from 231 households were asked to rank in state and out-of-state products by comparing them on: freshness, taste, appearance, and storage life (Brooker et al., 1987). About one-third of consumers responded that they “did not know” enough to compare against out-of-state produce (Brooker et al., 1987). Despite of this fact, it was interesting to note that 58% of consumers responded that in-state tomatoes had “better” freshness and taste when they are compare against out-of-state tomatoes.
In addition, 36% of consumers were willing to pay more to purchase locally grown tomatoes, as they were concerned about origin of tomatoes (Brooker et al., 1987).

Wilkins (2002) observed awareness, usage, and meaning of the term “local” food at U.S. chain supermarket and food cooperative (a freestanding storefront food market) consumers at New York, USA. As a result, 87% of consumers heard the word “local” food and 55% of consumers used the word “local” from both markets (Wilkins, 2002). Food cooperative consumers’ response rate was higher than chain supermarket consumers’ response rate on both categories (Wilkins, 2002). Wilkins (2002) stated that generally, consumers recognized the word “local” but usage was low.

Most consumers (77%) reported meaning of the word “local” food based on place where food was produced (Wilkins, 2002). Recently, Eičaitė and Dabkienė (2015) observed definition, frequency of local food purchase at Lithuania. Lithuanian residents stated local food as produced within more than 100km from their residence. Regarding the definition of local food, Lithuanian residents strongly agree that local food being grown or produced in Lithuania, and sold to consumers directly by Lithuanian farmers (Eičaitė and Dabkienė, 2015). Lithuanian residents purchase local food regularly (75%); at least once a week buying a local food consist 34.9% (Eičaitė and Dabkienė, 2015).

2.3.2 Characteristics of the local food shopper

The differences in characteristics of local food shoppers have been studied by several different authors (Wilkins, 1996; Weatherell et al., 2003; Detre et al., 2010; Mirosa and Lawson, 2012; Bianchi and Mortimer, 2015; Aprile et al., 2016). Wilkins (1996) compared Puget Consumers’ Cooperative (PCC) members from PCC stores and random residents of Washington
Preferences for local and seasonal food for both groups were significantly linked to environmental concerns include “packaging concerns”, “general environmental concerns”, and “use of natural resources in food production concerns” (Wilkins, 1996). However, PCC members revealed stronger preferences for local food and commitment to purchase local food to protect natural resources than non-members (Wilkins, 1996). Weatherell et al. (2003) examined the level of interest for purchasing local produce in the UK. Residents of both urban and rural communities. A study immediately took a place after Foot and Mouth Disease (FMD) outbreak in the UK (Weatherell et al., 2003). Participants were asked about their views on supporting rural communities (economically affected by the outbreak). Participants from urban community displayed negative responses, whereas all the participants from rural community displayed interest in local food and local food marketing to support the local businesses (Weatherell et al., 2003).

Brown (2003) discovered that residential locations of respondents influenced the preference for local produce in southeastern Missouri, USA. Rural residents more actively look for the local produce compare to urban residents (Brown, 2003). In addition, respondents who had a farm background (e.g. respondents or their parents who grew up on a farm) want to support family farmers by buying local produce (Brown, 2003). In contrast, Chambers et.al (2007) stated that there is no major difference on perceptions e.g. food quality and behavior e.g. support for local farmers on local food by urban and rural residents at the UK (Chambers et.al, 2007). Detre et al. (2010) was able to discover significant personal drivers of university millennial students purchasing local produce at farmer’s market. Detre et al. (2010) stated that personal motives such as students from the area, students who frequently prepare meals by using fresh produce and students who dines often at home are more expected to shop at a farmer’s market (Detre et al.,
Similarly, Mirosa and Lawson (2012) concluded that committed local food shoppers’ purchase intention influences what they consume, type of food (e.g. fresh/unprocessed food), where they purchase (e.g. at specialty shops), and how they cook (e.g. use of recipes). Among personal characteristics, local food shoppers were liberal (Wilkins, 1996; Mirosa and Lawson, 2012), ethnocentric (Bianchi and Mortimer, 2015; Aprile et al., 2016). They are environmentally and socially concerned than non-local food shoppers (Mirosa and Lawson, 2012). They are also concerned about the quality (Aprile et al., 2016; Mirosa and Lawson, 2012), and more economical compare to non-local food shoppers (Mirosa and Lawson, 2012).

2.3.3 Willingness to pay for local food

Consumers’ willingness to pay for local produce has been studied by numerous researchers (Eastwood et al., 1987; Wilkins, 1996; Kezis et al., 1998; Brown, 2003; Schneider and Francis, 2005; Carpio and Isengildina-Massa, 2009; Campbell et al., 2014). An early study by Eastwood et al. (1987) looked at consumers’ preferences on selected fresh produces (local vs. out-of-state) in Knoxville, Tennessee, USA. As a result, consumers from Knox County did not have strong preferences for or against local foods (Eastwood et al., 1987). They did find that the price levels of local foods should be less than or equal to the out-of-state produce with similar quality (Eastwood et al., 1987). Among the fresh produces, tomatoes selected as the most frequently purchased product and customers were most worried about the origin (Eastwood et al., 1987). Respondents including homemakers and professionals were willing to pay the equal or extra for local tomatoes (Eastwood et al., 1987). Similarly, respondents in a southeastern Missouri study expressed a preference for local produce at southeastern Missouri, USA further; Brown (2003) discovered that environmentalists were willing to pay a higher price for local produce. Kezis et al. (1998) identified that 72% of farmer’s market shoppers from Maine were willing to pay an
average premium of 17% for local produce (Kezis et al., 1998). More recently, a study by Carpio and Isengildina-Massa (2009) observed South Carolina (SC) resident’s willingness to pay for local food as well as their motivations explaining why. Those finding disclosed that SC residents have strong support for local produce and are willing to pay an additional 4.2% premium for local produced foods (Carpio and Isengildina-Massa, 2009). The main motivations for purchasing local food include supporting SC farmers and economy (Carpio and Isengildina-Massa, 2009). In the case of university students at USA, Campbell et al. (2014) identified two factors: product involvement and product quality reveal positive relationship to WTP. Also, noticed that university students recognize local food as better quality and higher value than other food (Campbell et al., 2014). These finding addressed need of active marketing by creating events (local food week), and emotional appeal: e.g. emphasizing health and environmental benefit of local food to reach out to student population better (Campbell et al., 2014). Recent findings were able to demonstrate that consumers expressed willingness to support local food by paying a premium.

2.3.4 Drivers and barriers to consuming local food

Drivers and barriers to the purchase or consumption of local food have been investigated for at least three decades (Bruhn et al., 1992; Feagan et al., 2004; Chambers et al., 2007; Onozaka et al., 2010; Penney and Prior, 2014; Bianchi and Mortimer, 2015). Weatherell et al. (2003) found a number of reasons for purchasing local food and which can be generally divided into personal motivation or social motivation. Personal drivers to local food include enhanced taste, freshness, and superiority of produce (Chambers et al. 2007; Murphy, 2011; Penney and Prior, 2014; Bianchi and Mortimer, 2015). Consumers recognized local food as fresher (Bruhn et al., 1992; Chambers et al., 2007; Onozaka et al., 2010) and pick freshness as the main driver of local food
(Feagan et al., 2004; IGD, 2008). When it comes to social motivations, major social drivers to local food are support for local community’s economy and local producers (Bruhn et al., 1992; Weatherell et al., 2003; Onozaka et al., 2010; Penney and Prior, 2014; Chambers et al., 2007). Additionally, social factors are increasing local food consuming motivations (Penney and Prior, 2014; Aprile et al., 2016). For instance, consumers are willing to build personal connections with local producers (Zepeda and Leviten-Reid, 2004) and Murphy (2011) discovered that consumers like visiting farmers’ market because they are able to have personal interactions with local producers.

At the same time, barriers to local food purchases were investigated from previous literatures. Bruhn et al. (1992) suggested that consumers want price of local produce to be similar or less than non-local food. In addition to, accessibility and availability were recognized as barriers to purchase the local food (Chambers et al., 2007; IGD, 2008; Onozaka et al., 2010; Penney and Prior, 2014). However, these findings do not imply specific diverse non-local consumers. Bond et al. (2008) mentioned that increasing numbers of consumers are different and their preferences are diverse based on their unique values and culture. This argument supports that drivers and barriers of these diverse communities need to be researched further to accommodate their wants and needs in local food market.

2.4 Identified gaps from previous literature on local food

The following gaps are identified from the preceding literatures on local food. Firstly, there is a high degree of variability in definition of “local food”. Previous literature includes various definitions of local food (Brooker et al., 1987; Wilkins et al., 2000; Wilkins, 2002; Brown, 2003; Zepeda and Leviten-Reid, 2004; Conner et al., 2010; Eičaitė and Dabkienė, 2015). Despite this,
little progress has been made in the developing a consensus of the definition of local food. Not only are definitions of local food varied, how students define local food is poorly understood.

Secondly, there are only limited number of previous studies that focus on student (Millennial Generation) and local food (Wilkins et al., 2000; Detre et al., 2010; Campbell et al., 2014). Previous research were able to explain purchasing power, environmental concerns, and characteristic of Millennial Generation (Farris et al., 2002; Gardyn, 2002; Wolburg and Pokrywczynski, 2001; Neuborne and Kerwin, 1999; Detre et al., 2010). According to Farris et al. (2002), “Today’s Generation Y teenagers have grown up with a greater degree of affluence than any generation before them” (Farris et al., 2002, p. 89). “Offspring of the Baby Boomers, today’s teenagers, the leading edge of the Generation Y market, are defined by two things: time and money” (Farris et al., 2002, p. 89).

Farris et al. (2002) states that the Millennial Generation has $150 billion in direct purchasing power, and $500 billion in indirect purchasing power, much more than their parents had. Purchasing power of millennial (university and college-age group) was estimated $200 billion annually in the USA (Gardyn, 2002). Furthermore, because of size of the market, trend-setting ability, and other attractive characteristics, Wolburg and Pokrywczynski (2001) stated college market is a highly desirable consumer segment for the marketers (Wolburg and Pokrywczynski, 2001). According to Neuborne and Kerwin (1999), millennial (university and college-age group) in the U.S. were brought up to be environmentally conscious; they want fresh and clean products that does not contain testing on animals or potential damaging on the ozone layer (Neuborne and Kerwin, 1999). Overall, they are socially responsible (Farris et al., 2002). Detre et al. (2010) stated that understanding fresh food shopping patterns of Millennial Generation student is
important for success of U.S. farmer’s market in the future as they move onto higher paying careers and start families (Detre et al, 2010).

There are only limited number of studies observing perceptions of local food and temporary residents (those from other nations). For this reason, this current study is designed to compare the differences in definitions of local food and purchase intention of local food by domestic and international students. For instance, Campbell (2013) observed locally produced foods purchase intentions and behavior difference between Hispanic and Caucasian consumers at the USA. As a result, there were differences between Hispanic and Caucasian consumers. Product availability is important for Hispanic consumers yet their positive attitude toward local food and greater perceived availability did not turn into purchase intention or behavior when compared to Caucasian consumers. However, these findings are limited to only certain nationalities.

Lastly, local food and international students is a significant topic to be discussed because population of international students are increasing in Canada. The Canadian Bureau of International Education, or CBIE, (2015) reported that 353,000 international students (all levels of study) are in Canada. Regionally, 86% of the 336,497 international students in Canada are reside in the province of Ontario, British Columbia or Québec (CBIE, 2015). Between year of 2008 and 2015, number of international students increased 92% in Canada (CBIE, 2015). This is 8% increase over the year 2014 (CBIE, 2015). CBIE (2015) stated that the Canada is 7th most popular destination around the world for the international students. According to CBIE (2015), international students in Canada are from following top five countries: China (33%), India (12%), South Korea (5.8%), France (5.7%), and Saudi Arabia (4%). In addition to, number of international students from Nigeria (+25%), Vietnam (+16%), Brazil (+15%), and France (+15%) are rapidly growing based on 2013-2014 report from CBIE (CBIE, 2015). CBIE (2015)
reported that 95% of international students suggested Canada as an educational destination and international students satisfied with their experience reported at 91%. International students picked Canada as an educational destination because quality of Canadian education system, tolerant/non-discriminatory culture, and safe environment (CBIE, 2015). More than half of all international students 58% are studying at universities and 7% are attending a college in Canada (CBIE, 2015). Top fields of program international students pursue in Canada include engineering, business, and the natural and social sciences according to CBIE (2015). In 2015, CBIE international student survey discovered that 51% of international students plan to apply for the permanent residence ship in Canada and 37% of international students plan to stay in Canada for more education (CBIE, 2014). The economic impact of International students in Canada is significant. Annually, Canada receives approximately $8 billion from expenditures of international students, including tuition and living expenses (CBIE, 2015). More than 81,000 jobs were created and more than $445 Million were generated in government revenue because presence of international students (CBIE, 2015). These facts strongly support the need of discovering international students’ perceptions and local food because international student consumers have great present and future market potential. To sup up, comprehending the intentions of diverse students at university community can help local food suppliers, university hospitality service, and local food supply chain operations to reach out to these populations better in the future.

2.5 Research Rationales

Local food and relationships between consumers have been studied for about past three decades. Many previous studies have offered definitions of local food. However, there is a high degree of variability in definition of local food. While considerable research has been devoted to
general consumers, rather less attention has been paid to observe the perception of temporary residents and especially the students. There is only limited research on local food and university students. Students at campus are from diverse communities and thus represent a complex market. Uncovering the relationship between local food and students can provide better marketing strategies for the local food suppliers, university hospitality service, and the food retailer serving the campus community. Furthermore, local food and students’ perspectives have great potential to be explored further since Millennial Generation have great future market potential because of purchasing power, environmental concerns, and characteristic of Millennial Generation.
CHAPTER 3: THEORETICAL FRAMEWORK- THEORY OF PLANNED BEHAVIOR

In this research, the Theory of Planned Behavior (TPB) will be applied to measure the local food purchase intentions of both domestic and international students. TPB is a useful empirical predictive tool of intentions and behavior proposed by Ajzen (Ajzen, 1991). TPB is the extension of the Theory of Reasoned Action (TRA) (Fishbein, 1967; Fishbein and Ajzen, 1975). TRA predicts a person’s behavior based on the basis of attitude and subjective norms (Fishbein, 1967; Fishbein and Ajzen, 1975; Al-Swidi et al., 2014). However due to a shortcoming of the TRA, e.g. handling behaviors over which people have incomplete volitional control, an additional construct called perceived behavioral control was added (Ajzen, 1991). The TRA assumes that behavior is completely voluntary (Liao et al., 2007; Kaiser et al., 1999). Whereas, TPB can accommodate both voluntary and involuntary aspects of behavior (Yazdanpanah and Forouzani, 2015).

TPB assumes that a person’s intention to carry out a certain behavior is influenced by a person’s attitude, subjective norm and perceived behavior control. Firstly, “attitude towards the behavior is the degree to which a person has a favorable or unfavorable evaluation or appraisal of the behavior in question” (Ajzen, 1991, p.188). Secondly, subjective norm is the “perceived social pressure to perform or not to perform the behavior” (Ajzen, 1991, p.188). Lastly, perceived behavioral control is “perceived ease or difficulty of performing the behavior and this is assumed to reflect past experience along with anticipated impediments and obstacles” (Ajzen, 1991, p.188). “As a general rule, the more favorable the attitude and subjective norm with respect to a behavior and the greater the perceived behavior control; the stronger should be an individual’s intention to perform the behavior under consideration” (Ajzen, 1991, p.188).
The Theory of planned behavior is a useful and widely used predictive tool among consumer behaviors (Conner and Sparks, 1995), health (Godin and Kok, 1996), and food choice (Vermeir and Verbeke, 2008; Alam and Sayuti, 2011; Campbell, 2013; Bianchi and Mortimer, 2013; Yazdanpanah and Forouzani, 2015).

3.1 Theoretical framework: TPB and moral norm

In this study, an additional construct called moral norm is added to original framework of TPB. Moral or normative issues are acknowledged as significant in influencing behavior (Etzioni, 1988; Harsanyi, 1982). In the original model of TPB, “all moral and normative influences on behavior are assumed to be mediated via the measures of subjective norms and attitudes” (Ajzen and Fishbein, 1980, p.247; Manstead, 2000). Subjective norm is defined as “the perceived social pressure to perform or not to perform the behavior” (Ajzen, 1991, p.188). According to Harré and Lamb (1986), “social norms are usually seen as socially shared rules of what is right and wrong” (Harré and Lamb 1986, p.234). However, Arvola (2008) argued that measuring moral norm based on the original TPB is inappropriate because subjective norm focus on the groups while moral norm emphasis on standards of behavior from a person (Arvola, 2008).

Moral norm was introduced by psychologist Schwartz’s (1977) norm-activation theory of altruism. Schwartz (1977) states that pro-environmental actions take place because of reaction to personal moral norms about them. In addition, these actions are initiated by a person who believes he or she can prevent an environmental hazard that threatens other people, species, or the biosphere. According to Neuborne and Kerwin (1999), the Millennial Generation in the U.S. are environmentally conscious, they want fresh and clean products that do not involve animal
testing and potential environmental damage. Overall, they have a well-developed sense of social responsibility (Farris et al., 2002).

The object of this study is to observe perceptions of Millennial Generation students. In this reason, observing the significance of moral norm and Millennial Generation students can discover whether their environmental support is relating to their local food purchasing behavior. For instance, Yazdanpanah and Forouzani (2015) examined Iranian students’ intention to purchase organic food. Yazdanpanah and Forouzani (2015) compared an original TPB model and an extended TPB model by adding additional constructs of a moral norm construct and a self-identity construct. These additional constructs were found to be statistically significant and a subjective norm construct and a perceived behavior control construct were found to be insignificant.

3.2 Previous literatures on local food and Theory of Planned Behavior

Following previous researches on the local food used TRA and TPB. Bianchi and Mortimer (2015) examine antecedents of local food purchase intention in Chilean and Australian by using TRA. Results revealed that consumers who have positive attitudes such as support for local business and consumer ethnocentrism toward consuming the local produce tend to buy local food in both markets. However, ethnocentrism is more important for Australian consumers compare to Chilean consumers. Followed by Campbell (2013) observed locally produced foods purchase intentions and behavior difference between Hispanic and Caucasian consumers. As a result, there were difference between Hispanic and Caucasian consumers. Product availability is important for Hispanic consumers yet their positive attitude toward local food and greater perceived
availability did not turn into purchase intention or behavior when compared to Caucasian consumers.

### 3.3 Model development

Given the historical and theoretical explanation regarding to the TPB above, an extended model of TPB was proposed. In this study, the context of attitude was overall perceptions of the local food such as health, quality, and supports on local community were positively linked to local food purchase intention. The context of subjective norms was social influences such as friends, university community, and family of which those factors were positively linked to local food purchase intention. The context of perceived availability was ease of access, identification, and availability of local food were positively linked to local food purchase intention. Lastly, the context of moral norm was inter-personal obligations within a person were positively linked to local food purchase intention.

Based on the model, the following hypotheses were proposed:

- **H1**: There is a positive relationship between attitude and intention to purchase local food.
- **H2**: There is a positive relationship between subjective norms and intention to purchase local food.
- **H3**: There is a positive relationship between perceived availability and intention to purchase local food.
- **H4**: There is a positive relationship between moral norm and intention to purchase local food.

Previous research on local food and students discussed only college students in American (Wilkins et al., 2000). However, different perceptions on local food between different

22
nationalities were identified (Campbell 2013; Bianchi and Mortimer 2015). Therefore, differences between domestic and international students on each constructs were tested with the following hypotheses in current research:

- **H1 a)**: There is no difference between domestic and international students’ attitude and intention to purchase local food.
- **H2 a)**: There is no difference between domestic and international students’ subjective norms and intention to purchase local food.
- **H3 a)**: There is no difference between domestic and international students’ perceived availability and intention to purchase local food.
- **H4 a)**: There is no difference between domestic and international students’ moral norm and intention to purchase local food.

*Figure 1. Conceptual model: local food purchase intention*
CHAPTER 4: METHODOLOGY

4.1 Sample

A convenience sample of domestic and international students from Hospitality, Food and Tourism department classes at the University of Guelph was employed as the purpose of this research is to collect students’ perceptions on local food. The difficulty of recruiting an adequately sized statistically representative random sample led to the decision to use a non-probability convenience sampling method. A total of 218 surveys were distributed at three undergraduate classes. Following standard ethical guidelines at the university, participation in the survey was voluntary.

4.2 Operational definition of variables on the survey

Following two questions were created to determine how students define local food and identify local food categories. In addition, to determine whether there is a difference in how domestic and international students define local food and identify local food categories. The questionnaire used in this research is provided in appendix A. Firstly, definitions of local food for this research were based on a modification of Aprile et al. (2016)’s consumers’ definitions of local foods questions, in which they used the following definition-based questions for local food classification in Italy:

- “Grown and manufactured in Italy”
- “Grown and manufactured in my region”
- “Grown and manufactured within 70km”
- “Geographical indication labeled products”
- “Food purchased from producers” (Aprile et al., 2016, p.25).
In this current research study of students, some rewording was applied to make it contextually relevant. For example, “geographic regions” became Ontario, and Canada; and “producers” were reworded to “farmer’s market”. Secondly, the availability of local food group(s) question were based on the food categories from Canada’s food guide by Health Canada (Government of Canada, 2007); in this research, the legumes/beans category was added.

The following 18 questions used in this research were modified and developed based on previous research and literature on local food to test the relationship between independent variable (attitude, subjective norm, perceived availability, moral norm) and dependent variable (purchase intention).

**Purchase Intention (2)**

Questions 1 and 2 were modified from Bianchi and Mortimer’s (2015) local food purchase intention questions:

- “I will most certainly buy locally produced products in the future”
- “There is a strong chance that I will buy locally produced foods in the future” (Bianchi and Mortimer, 2015, p. 2290).

In this research, specific locations were added: grocery store and campus.

1. I intend to purchase local food when I shop at a grocery store.

2. I intend to purchase local food when I dine on campus.

**Attitude toward consuming local food (5):**

Questions 3, 4, 5, and 7 were based on previous literature findings on important drivers of local food: health, quality, and supports on local community.
3. Purchasing local food is a healthy choice.

4. Local foods are no healthier than imported foods from reputable sources.

5. Local food is fresher than imported food.

6. It is important as a student at the University of Guelph to support Ontario local farmers and our local business community in Ontario.

7. Local food is not likely tastier than the same food when imported.

As well, questions 3 and 4 were based on the health benefit of local food. According to Aprile et al. (2016), 58.9% of consumers from Naples, Italy believed that local food might have benefits for one’s health (Aprile et al., 2016). In addition, Eičaitė and Dabkienė (2015) discovered that health concern came as the second driver of consuming local food at Lithuania. Health benefit of local food is critical because this was acknowledged as one of the most important drivers that encourage consumers to consume local food from previous findings (Aprile et al., 2016; Eičaitė and Dabkienė 2015; Bianchi and Mortimer 2015).

Questions 5 and 7 were based on the quality of local food. Personal drivers to local food include enhanced taste, freshness, and superiority of produce (Aprile et al., 2016; Chambers et al., 2007; Murphy, 2011; Penney and Prior, 2014; Bianchi and Mortimer, 2015). Consumers recognize local food as fresher (Bruhn et al., 1992; Chambers et al., 2007; Onozaka et al., 2010) and pick freshness as the main driver of local food purchase intentions (Feagan et al., 2004; IGD, 2008). Question 6 was modified from Cranfield et al. (2012)’s opinions about local farmers question:

- “It is important to support our local farmers” (Cranfield et al., 2012, p. 211).
Subjective norms (3):

Questions 8, 9, and 10 were modified from Campbell’s (2013) subjective norm questions:

- “Friends think I should buy locally produced foods”
- “Society thinks I should buy locally produced foods”
- “My family thinks I should buy locally produced foods” (Campbell, 2013, p.331).

In this research, “university community” was added.

8. My friends don’t care whether or not I purchase local food.

9. University community thinks that I should buy local food.

10. My family don’t care whether or not I should purchase local food.

Perceived product availability (4):

Questions 11, 12, 13, 14 and 16 were developed based on barriers to the local food that were identified from previous local food literatures. Previously, accessibility and availability were recognized as barriers of purchasing the local food (Chambers et al., 2007; IGD, 2008; Onozaka et al., 2010; Penney and Prior, 2014). Question 15 was developed to reflect Canadian climate.

11. I can find locally produced food in my grocery store.

12. It is easy to identify in my local grocery which foods are produced locally.

13. I can find locally produced food at food service establishments on my campus.

14. I find it difficult to identify what foods served on campus are based on local ingredients.

15. I would prefer to buy local food but sometimes it is impossible due to Canadian
16. I can easily find imported food than local food.

**Moral norms (2):**

Questions 17 and 18 were modified from Yazdanpanah, M., & Forouzani, M. (2015) moral norm questions:

- “I feel an obligation to purchase organic food rather than non-organic food”
- “Consuming organic food rather than non-organic food, makes me feel like a better person” (Yazdanpanah, M., & Forouzani, M., 2015, p.346).

In this research, a term “organic food” was replaced by “local food”.

17. I don’t feel an obligation to purchase local food rather than imported food.

18. Purchasing local food rather than imported food makes me feel a better person than consumers of imported food.

4.3 Data collection period and method

Primary data were collected by using self-administrated questionnaires at University of Guelph, located at Guelph, Canada in April, 2017. The questionnaire used a six-point Likert scale: 1 – strongly disagree, 2 – disagree, 3 – somewhat disagree, 4 – somewhat agree, 5 – agree, 6 – strongly agree. A six-point Likert scale was chosen to avoid having an ambiguous mid-point such as ‘neutral’ (Smith, 2010). Such mid-points may be interpreted as “uncertain”, “no opinion”, “haven’t thought about it” or some other interpretation that allows the respondent to avoid expressing a view (Smith, 2010). Alam and Sayuti (2011) used numerical six-point Likert
scale to study halal food purchasing intention by applying TPB and used multiple regression analysis. Response time for the questionnaire was less than 15 minutes.

4.4 Coding: Reverse Coding

Reverse coding was applied to selected responses. Reverse coding is a tool regularly used to assist in the validation process that rephrasing a positive question in a negative way (University Libraries, 2017). In this research, reverse coding was applied to following six questions:

Q4. Local foods are no healthier than imported foods from reputable sources.

Q7. Local food is not likely tastier than the same food when imported.

Q8. My friends don’t care whether or not I purchase local food.

Q10. My family don’t care whether or not I should purchase local food.

Q14. I find it difficult to identify what foods served on campus are based on local ingredients.

Q17. I don’t feel an obligation to purchase local food rather than imported food.

For instance, when Q8. “My friends don’t care whether or not I purchase local food” is non-reverse coded, a score of 1, or ‘strongly disagree’, means that my friends “care” whether or not I purchase local food, and a score of 6 means my friends strongly “don’t care” whether or not I purchase local food. The scoring will become flipped when questions are reverse-coded, creating a consistent coding value system through the study.
CHAPTER 5: DATA ANALYSIS

Data was analyzed using the SPSS 24.0. A series of descriptive and analytical tests were performed including Cronbach’s alpha, correlation analysis, t-tests, and multiple regression analysis. Cronbach alpha is a measure for the reliability of all constructs used in this research. (purchase intention, attitude, subjective norm, perceived availability, moral norm, international attitude, international subjective norm, international perceived availability, and international moral norm).

Descriptive statistics were also used to analyze demographic profile of respondents in this research. The first stage of data analysis aimed to determine definition of local food and local food category. Pearson’s correlation analysis was used to validate which definition of local food and local food category were likely chosen together. Lastly, t-tests were used to verify the group difference in the definitions of local food and local food category between domestic and international students. Mean differences between domestic and international students were evaluated to determine if there were statistical differences.

The second stage of data analysis aimed to measure all the constructs used in this research: purchase intention, attitude, subjective norm, perceived availability, and moral norm. Descriptive statistics were used to calculate the mean values of these constructs. Next, Pearson’s correlation analysis was completed to verify the relationship between all constructs. Lastly, a t-test was used to validate the group difference between domestic and international students on all constructs. The final stage of analysis, the multiple regression analysis used to determine R-squared (adjusted), Beta coefficients, and to test the hypotheses.
CHAPTER 6: RESULTS AND DISCUSSION

The first goal was to determine how students define local food and identify local food categories and to determine whether there is a difference in how domestic and international students define local food and identify local food categories. The main goal of this research was to predict which independent constructs (attitude, subjective norm, perceived availability, or moral norm) statistically influence the local food purchase intention of domestic and international students. A total of 196 responses were completed and 22 were incomplete, for a response rate of 90%.

6.1 Reliability of the constructs

Cronbach alpha was 0.8 (Table 1). This is better than 0.7, which is the usual threshold for concluding a scale is reliable (Nunnally and Bernstein, 1994). The result confirms the reliability of measures used in this research and is expected to produce similar output when applied to other studies.

Table 1 Reliability statistics

<table>
<thead>
<tr>
<th>Cronbach's Alpha</th>
<th>N of Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.801</td>
<td>9</td>
</tr>
</tbody>
</table>

Note: Valid 186 (94.9%), Excluded 10 (5.1%), Total 196 (100%)

6.2 Sample composition

6.2.1 Demographic profile of respondents

Descriptive statistics were used to examine the demographic profile of respondents in this research. In this survey, domestic students comprise 71.8% and international students comprise 28.2%. Of all the respondents, 71.3% were female and 28.7% were male respondents (Table 2).
This reflects the dominant female students’ population at the School of Hospitality, Food, and Tourism Management program at the University of Guelph. Notice that the percentage of males and females is similar for both domestic and international students meaning that the major finding of this research is based on the difference between domestic and international students not between genders (Table 2).

Table 2 Descriptive statistics- demographic profile of respondents.

<table>
<thead>
<tr>
<th>Demographics</th>
<th>Domestic (%)</th>
<th>% of total</th>
<th>International (%)</th>
<th>% of Total</th>
<th>% of Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>41 (29.3%)</td>
<td>21%</td>
<td>15 (27.3%)</td>
<td>7.7%</td>
<td>28.7%</td>
</tr>
<tr>
<td>Female</td>
<td>99 (70.7%)</td>
<td>50.8%</td>
<td>40 (72.7%)</td>
<td>20.5%</td>
<td>71.3%</td>
</tr>
<tr>
<td>Total</td>
<td>140 (100%)</td>
<td>71.8%</td>
<td>55 (100%)</td>
<td>28.2%</td>
<td>100%</td>
</tr>
</tbody>
</table>

Note: Valid 195 (99.5%), Missing 1 (0.5%), Total 196 (100%).

6.3 Definition of local food

6.3.1 Definition of local food

Descriptive statistics were used to determine the most frequently chosen definition of local food (see appendix 1 for a question). The questions on definition of local food and local food categories were designed to allow respondents to select more than one option, which can provide wider ranges of responses on students’ perspective on definition of local food and identification of local food categories. “Food grown/raised within 100km where person lives” was the most commonly chosen at 57.7%. “Grown in the province (e.g. Ontario) person lives” 51.5% was the second most commonly chosen followed by “Food purchased from farmer’s market” (48.5%) (Table 3). This result indicate that students use physical distance to describe the definition of local food such as 100km and province wide. In addition, students were more likely to choose smaller distances than larger when defining local food. Results agree with previous studies on local food and general consumers which note that distances and origins (provinces) are the most
commonly used to describe the definition of local food (Brooker et al., 1987; Wilkins et al., 2000; Wilkins, 2002; Brown, 2003; Zepeda and Leviten-Reid, 2004; Conner et al., 2010; Eičaitė and Dabkienė, 2015). In addition, more than half (65%) of university students from the USA stated meaning of the “local” food based on place where food was produced (Wilkins et al., 2000) (Wilkins et al., 2000). Overall, students are more likely to link the local food with the distances. However, in our study students also appear to link local food with farmer’s market.

Table 3 Descriptive statistics- definition of local food. How would you define local foods?

<table>
<thead>
<tr>
<th>Item</th>
<th>N</th>
<th>Percent</th>
<th>Percent of Cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grown in the province (e.g. Ontario) person lives.</td>
<td>101</td>
<td>23.2%</td>
<td>51.5%</td>
</tr>
<tr>
<td>Food grown/raised within 100km where person lives.</td>
<td>113</td>
<td>26.0%</td>
<td>57.7%</td>
</tr>
<tr>
<td>Grown in Canada.</td>
<td>42</td>
<td>9.7%</td>
<td>21.4%</td>
</tr>
<tr>
<td>Verified as Ontario grown. (e.g. Foodland Ontario)</td>
<td>80</td>
<td>18.4%</td>
<td>40.8%</td>
</tr>
<tr>
<td>Food purchased from farmer’s market.</td>
<td>95</td>
<td>21.8%</td>
<td>48.5%</td>
</tr>
<tr>
<td>Other (Please specify)</td>
<td>4</td>
<td>0.9%</td>
<td>2.0%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>435</strong></td>
<td><strong>100.0%</strong></td>
<td><strong>221.9%</strong></td>
</tr>
</tbody>
</table>

*Note: Multiple responses were possible.*

A Pearson’s correlation analysis was performed to validate which definitions of local food were most frequently combined. The definition “grown in the province (e.g. Ontario) person lives” and the definition “verified as Ontario-grown. (e.g. Foodland Ontario)” were significantly correlated ($r = 0.245, p < 0.01$) (Table 4). These definitions were likely chosen together because two definitions are based on geographic boundary, which is Ontario. The definition “verified as Ontario-grown. (e.g. Foodland Ontario)” and the definition “food purchase from farmer’s market” were also significantly correlated ($r = 0.316, p < 0.01$) (Table 4). Interestingly, the definition “food grown/raised within 100km where person lives”, and the definition “grown in
Canada” were significantly and negatively correlated ($r = -0.232, p < 0.01$) (Table 4) whereas, the definition “food grown/raised within 100km where person lives” and the definition “food purchase from farmer’s market” were significantly correlated ($r = 0.232, p < 0.01$) (Table 4).

Table 4 The Pearson’s correlation analysis- definitions of local food. How would you define local food?

| Items | Grown in the province (e.g. Ontario) person lives. | Food grown/raised within 100km where person lives. | Grown in Canada. | Verified as Ontario grown. (e.g. Foodland Ontario) | Food purchase from farmer’s market. | Other (Please specify) |
|-------|---------------------------------------------------|---------------------------------------------------|----------------|---------------------------------------------------|--------------------------------|
| Grown in the province (e.g. Ontario) person lives. | 1.00 | | | | | |
| Food grown/raised within 100km where person lives. | 0.016 | 1.00 | | | | |
| Grown in Canada. | 0.009 | -0.232** | 1.00 | | | |
| Verified as Ontario grown. (e.g. Foodland Ontario) | 0.245** | 0.060 | 0.123 | 1.00 | | |
| Food purchased from farmer’s market. | 0.124 | 0.232** | 0.016 | 0.316** | 1.00 | |
| Other (Please specify) | 0.140 | 0.051 | 0.013 | 0.100 | 0.077 | 1.00 |

Note: **. Correlation is significant at the 0.01 level (2-tailed).
6.3.2 Difference between domestic and international students’ definitions of local food

A t-test was used to access the group difference in the definitions of local food between domestic and international students. Differences in means between domestic and international students were evaluated to determine if there were statistical differences. Three definition categories (Food grown/raised within 100km where person lives, Grown in Canada, and Grown in the province) chosen by domestic and international students revealed statistically significant differences (Table 5). The frequency with which domestic students ($M = 0.71$) chose the definition “food grown/raised within 100km where person lives” was significantly higher than that for international students ($M = 0.24$) (Table 5). The frequency with which domestic students ($M = 0.57$) chose the definition “grown in the province (e.g. Ontario) person lives” was significantly higher than that for international students ($M = 0.38$) (Table 5). However, the frequency with which international students ($M = 0.44$) chose the definition “grown in Canada” was significantly higher than that for domestic students ($M = 0.13$) (Table 5). Domestic students are three times more likely to say local food is food grown/raised within 100km where person lives than international students. This pattern indicate that domestic students more narrowly defined the local food in distance as compared to international students. This narrow definition may also reflect difference in perspectives on geography. International students seem to focus more broadly and may have a less nuanced view of Canadian geography in our study. Overall, Pearson’s correlation analysis and t-test revealed significant differences in the definition of local food between domestic and international students.
Table 5 Difference between domestic and international students’ definitions of local food. How would you define local food?

<table>
<thead>
<tr>
<th>Items</th>
<th>Domestic</th>
<th>Sd.</th>
<th>International</th>
<th>Sd.</th>
<th>T. Value</th>
<th>Sig. (2-tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grown in the province (e.g. Ontario) person lives.</td>
<td>0.57</td>
<td>0.497</td>
<td>0.38</td>
<td>0.490</td>
<td>-2.357</td>
<td>0.019*</td>
</tr>
<tr>
<td>Food grown/raised within 100km where person lives.</td>
<td>0.71</td>
<td>0.456</td>
<td>0.24</td>
<td>0.429</td>
<td>-6.633</td>
<td>0.000*</td>
</tr>
<tr>
<td>Grown in Canada.</td>
<td>0.13</td>
<td>0.335</td>
<td>0.44</td>
<td>0.501</td>
<td>5.003</td>
<td>0.000*</td>
</tr>
<tr>
<td>Verified as Ontario grown. (e.g. Foodland Ontario)</td>
<td>0.43</td>
<td>0.496</td>
<td>0.36</td>
<td>0.485</td>
<td>-0.789</td>
<td>0.431</td>
</tr>
<tr>
<td>Food purchased from farmer’s market.</td>
<td>0.49</td>
<td>0.502</td>
<td>0.47</td>
<td>0.504</td>
<td>-0.208</td>
<td>0.835</td>
</tr>
<tr>
<td>Other (Please specify)</td>
<td>0.02</td>
<td>0.145</td>
<td>0.02</td>
<td>0.135</td>
<td>-0.137</td>
<td>0.891</td>
</tr>
</tbody>
</table>

Note: *means $p < 0.05$ (2-tailed).

### 6.4 Local food categories

#### 6.4.1 Availability of local food group category.

Descriptive statistics were used to identify the most chosen local food group category (see appendix 1 for a question). The vegetables category was the most commonly chosen at 92.9%. Fruits was the second most commonly chosen at 79.6% followed by and lean meats, poultries, fish, eggs, nuts category (70.9%). This pattern indicate that students are more likely to identify local food as non-processed food (Table 6). Results agree with previous local food and university
students at USA which named fruits or vegetables most often as local food e.g. apples, banana and corns (Wilkins et al., 2000). Students may have less information to identify local food category in our study.

Table 6 Descriptive statistics - availability of local food group category. Based on your previous food purchase, which of the following food group(s) is/are available as local food?

<table>
<thead>
<tr>
<th>Items</th>
<th>N</th>
<th>Percent</th>
<th>Percent of Cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vegetables</td>
<td>182</td>
<td>24.4%</td>
<td>92.9%</td>
</tr>
<tr>
<td>Legumes/beans</td>
<td>80</td>
<td>10.7%</td>
<td>40.8%</td>
</tr>
<tr>
<td>Fruits</td>
<td>156</td>
<td>20.9%</td>
<td>79.6%</td>
</tr>
<tr>
<td>Grain (cereal food)</td>
<td>66</td>
<td>8.9%</td>
<td>33.7%</td>
</tr>
<tr>
<td>Lean meats, poultries, fish, eggs, nuts</td>
<td>139</td>
<td>18.7%</td>
<td>70.9%</td>
</tr>
<tr>
<td>Milk, yogurt, cheese</td>
<td>119</td>
<td>16.0%</td>
<td>60.7%</td>
</tr>
<tr>
<td>Other (Please specify)</td>
<td>3</td>
<td>0.4%</td>
<td>1.5%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>745</td>
<td><strong>100.0%</strong></td>
<td><strong>380.1%</strong></td>
</tr>
</tbody>
</table>

Note: Multiple responses were possible.

A Pearson’s correlation analysis was used to validate which local food categories are likely chosen together. Interestingly, vegetables category and fruits category were only significantly correlated while excluding other categories, $r = 0.400, p < 0.01$ (Table 7), meaning that only vegetables and fruits category are likely chosen together. Legumes/beans category and grain (cereal food) category were significantly correlated, $r = 0.397, p < 0.01$ (Table 7). Lean meats, poultries, fish, eggs, nuts category and milk, yogurt, cheese category were significantly correlated, $r = 0.336, p < 0.01$ (Table 7). Lean meats, poultries, fish, eggs, nuts category and legumes/beans category were significantly correlated, $r = 0.212, p < 0.01$ (Table 7). Lean meats, poultries, fish, eggs, nuts category and grain (cereal food) category were significantly correlated, $r = 0.195, p < 0.01$ (Table 7). Lastly, milk, yogurt, cheese category and grain (cereal food) category were significantly correlated, $r = 0.242, p < 0.01$ (Table 7). These results indicate that students who use a wider local food category likely to choose all food categories whereas, students with narrow local food category likely to choose vegetables and fruits category.
Table 7 The Pearson’s correlation analysis- local food category. Based on your previous food purchase, which of the following food group(s) is/are available as local food?

<table>
<thead>
<tr>
<th>Items</th>
<th>Vegetables</th>
<th>Legumes/beans</th>
<th>Fruits</th>
<th>Grain (cereal food)</th>
<th>Lean meats, poultries, fish, eggs, nuts</th>
<th>Milk, yogurt, cheese</th>
<th>Other (Please specify)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vegetables</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Legumes/beans</td>
<td>0.109</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fruits</td>
<td>0.400**</td>
<td>-0.017</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grain (cereal food)</td>
<td>0.114</td>
<td>0.397**</td>
<td>-0.014</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lean meats, poultries, fish, eggs, nuts</td>
<td>0.128</td>
<td>0.212**</td>
<td>0.122</td>
<td>0.195**</td>
<td>1.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Milk, yogurt, cheese</td>
<td>0.061</td>
<td>0.073</td>
<td>0.111</td>
<td>0.242**</td>
<td>0.336**</td>
<td>1.00</td>
<td></td>
</tr>
<tr>
<td>Other (Please specify)</td>
<td>-0.450**</td>
<td>-0.104</td>
<td>-0.246**</td>
<td>-0.089</td>
<td>-0.195**</td>
<td>-0.155*</td>
<td>1.00</td>
</tr>
</tbody>
</table>

Note: **. Correlation is significant at the 0.01 level (2-tailed). *. Correlation is significant at the 0.05 level (2-tailed).

6.4.2 Difference between domestic and international students’ local food category.

A t-test was used to verify the group difference in the local food categories of domestic and international students. Differences in means between domestic and international students were assessed to verify if there were statistical differences. Local food categories (fruit, lean meats, poultries, fish, eggs, nuts category) chosen by domestic and international students revealed statistically significant differences (Table 8). The mean value of domestic students ($M = 0.84$) was significantly higher than international students ($M = 0.67$) in fruits category (Table 8). The mean value of domestic students ($M = 0.79$) was also significantly higher than international students ($M = 0.51$) in lean meats, poultries, fish, eggs, nuts category (Table 8). These patterns indicate that domestic students are more likely to say fruits, lean meats, poultries, fish, eggs, and
nuts are local food than international students. International students are more likely only to indicate vegetables and fruits. Overall, in our study domestic students seem to have a wider local food category than international students.

Table 8 Difference between domestic and international students’ local food category. Based on your previous food purchase, which of the following food group(s) is/are available as local food?

<table>
<thead>
<tr>
<th>Questions</th>
<th>Domestic</th>
<th></th>
<th>International</th>
<th></th>
<th>T. Value</th>
<th>Sig. (2-tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>Sd.</td>
<td>Mean</td>
<td>Sd.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vegetables</td>
<td>0.95</td>
<td>0.218</td>
<td>0.87</td>
<td>0.336</td>
<td>-1.904</td>
<td>0.058</td>
</tr>
<tr>
<td>Legumes/beans</td>
<td>0.44</td>
<td>0.498</td>
<td>0.33</td>
<td>0.474</td>
<td>-1.439</td>
<td>0.152</td>
</tr>
<tr>
<td>Fruits</td>
<td>0.84</td>
<td>0.364</td>
<td>0.67</td>
<td>0.474</td>
<td>-2.709</td>
<td>0.007*</td>
</tr>
<tr>
<td>Grain (cereal food)</td>
<td>0.34</td>
<td>0.476</td>
<td>0.33</td>
<td>0.474</td>
<td>-0.174</td>
<td>0.862</td>
</tr>
<tr>
<td>Lean meats, poultries, fish</td>
<td>0.79</td>
<td>0.411</td>
<td>0.51</td>
<td>0.505</td>
<td>-3.987</td>
<td>0.000*</td>
</tr>
<tr>
<td>eggs, nuts</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Milk, yogurt, cheese</td>
<td>0.64</td>
<td>0.482</td>
<td>0.53</td>
<td>0.504</td>
<td>-1.430</td>
<td>0.154</td>
</tr>
<tr>
<td>Other (Please specify)</td>
<td>0.01</td>
<td>0.119</td>
<td>0.02</td>
<td>0.135</td>
<td>0.204</td>
<td>0.839</td>
</tr>
</tbody>
</table>

Note: *means $p < 0.05$ (2-tailed).

6.5 Descriptive analysis on all constructs

A total of 18 questions were modified and developed based on previous research and literature on local food to test the relationship between independent variable (attitude, subjective norm, perceived availability, moral norm) and dependent variable (purchase intention). Detailed explanations about each constructs was provided in the methodology chapter.

Purchase Intention (2)

1. I intend to purchase local food when I shop at a grocery store.

2. I intend to purchase local food when I dine on campus.

Attitude toward consuming local food (5):
3. Purchasing local food is a healthy choice.

4. Local foods are no healthier than imported foods from reputable sources.

5. Local food is fresher than imported food.

6. It is important as a student at the University of Guelph to support Ontario local farmers and our local business community in Ontario.

7. Local food is not likely tastier than the same food when imported.

**Subjective norms (3):**

8. My friends don’t care whether or not I purchase local food.

9. University community thinks that I should buy local food.

10. My family don’t care whether or not I should purchase local food.

**Perceived product availability (4):**

11. I can find locally produced food in my grocery store.

12. It is easy to identify in my local grocery which foods are produced locally.

13. I can find locally produced food at food service establishments on my campus.

14. I find it difficult to identify what foods served on campus are based on local ingredients.

15. I would prefer to buy local food but sometimes it is impossible due to Canadian climate.

16. I can easily find imported food than local food.
Moral norms (2):

17. I don’t feel an obligation to purchase local food rather than imported food.

18. Purchasing local food rather than imported food makes me feel a better person than consumers of imported food.

Reverse coding was applied to six questions (4, 7, 8, 10, 14, and 17). Detailed explanations about reverse coding were provided in the methodology chapter.

The mean scores of purchase intention, attitude, perceived availability, and moral norm constructs of domestic and international students were reported (6-point scale). For a purchase intention construct, mean scores for domestic students ($M = 3.45$) and international student ($M = 3.88$) respectively (Table 10). For an attitude construct, mean scores for domestic students ($M = 4.29$) and international students ($M = 4.11$) respectively (Table 10). For a subjective norm construct, domestic students ($M = 3.08$) and international students ($M = 2.79$) respectively (Table 10). For a perceived availability construct, domestic students ($M = 4.00$) and international students ($M = 3.91$) respectively (Table 10). Lastly for a moral norm construct, domestic students ($M = 3.74$) and international students ($M = 3.31$) respectively (Table 10).

A Pearson’s correlation analysis was used to validate the relationship between all constructs. There were positive correlation and statistical significance between the intention to purchase local food and all the constructs (attitude, subjective norm, perceived availability and moral norm) (Table 9). An attitude construct and purchase intention were significantly correlated, $r = 0.389, p < 0.01$ (Table 9). A subjective norm construct and purchase intention were significantly correlated, $r = 0.376, p < 0.01$ (Table 9). A perceived availability construct and purchase intention were significantly correlated, $r = 0.367, p < 0.01$ (Table 9). A moral norm construct and
purchase intention were significantly correlated, \( r = 0.441, p < 0.01 \) (Table 9). Correlation between a moral norm construct and a subjective norm construct were higher than the other constructs. A moral norm construct and a subjective norm construct were significantly correlated, \( r = 0.556, p < 0.01 \) (Table 9). No negative correlations between constructs were identified.

Table 9 The Pearson’s correlation analysis- all constructs.

<table>
<thead>
<tr>
<th>Items</th>
<th>Purchase intention</th>
<th>Attitude</th>
<th>Subjective norm</th>
<th>Perceived availability</th>
<th>Moral norm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Purchase intention</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Attitude</td>
<td>0.389**</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Subjective norm</td>
<td>0.376**</td>
<td>0.456**</td>
<td>1.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perceived availability</td>
<td>0.367**</td>
<td>0.263**</td>
<td>0.237**</td>
<td>1.00</td>
<td></td>
</tr>
<tr>
<td>Moral norm</td>
<td>0.441**</td>
<td>0.507**</td>
<td>0.556**</td>
<td>0.266**</td>
<td>1.00</td>
</tr>
</tbody>
</table>

Note: **. Correlation is significant at the 0.01 level (2-tailed).

6.5.1 Differences between domestic and international students on all the constructs (dependent and independent constructs)

A t-test was used to validate the group differences between domestic and international students on all constructs (dependent and independent construct). Mean differences between domestic and international students in each constructs were evaluated to determine if there were statistical differences. The mean score of international students (\( M = 3.88 \)) was significantly higher than domestic students (\( M = 3.45 \)) in a purchase intention construct (Table 10). The mean score of domestic students (\( M = 3.08 \)) was significantly higher than international students (\( M = 2.79 \)) in a subjective norm construct (Table 10). The mean score of domestic students (\( M = 3.74 \)) was significantly higher than international students (\( M = 3.31 \)) in a moral norm construct (Table 10).
Table 10 Descriptive statistics- domestic and international students on all constructs & Difference between domestic and international students on all constructs.

<table>
<thead>
<tr>
<th>Questions</th>
<th>Domestic</th>
<th></th>
<th>International</th>
<th></th>
<th>T. Value</th>
<th>Sig. (2-tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>Sd.</td>
<td>Mean</td>
<td>Sd.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Purchase intention</td>
<td>3.45</td>
<td>1.059</td>
<td>3.88</td>
<td>0.995</td>
<td>2.554</td>
<td>0.011*</td>
</tr>
<tr>
<td>Attitude</td>
<td>4.29</td>
<td>0.724</td>
<td>4.11</td>
<td>0.592</td>
<td>-1.604</td>
<td>0.110</td>
</tr>
<tr>
<td>Subjective norm</td>
<td>3.08</td>
<td>0.785</td>
<td>2.79</td>
<td>0.825</td>
<td>-2.227</td>
<td>0.027*</td>
</tr>
<tr>
<td>Perceived availability</td>
<td>4.00</td>
<td>0.610</td>
<td>3.91</td>
<td>0.498</td>
<td>-0.986</td>
<td>0.325</td>
</tr>
<tr>
<td>Moral norm</td>
<td>3.74</td>
<td>1.107</td>
<td>3.31</td>
<td>0.874</td>
<td>-2.568</td>
<td>0.011*</td>
</tr>
</tbody>
</table>

Note: *means $p < 0.05$ (2-tailed).

### 6.6 Multiple regression analysis

Multiple regression was calculated to predict local food purchase intention based on attitude, subjective norm, perceived availability and moral norm (Cronk, 2012). A significant multiple regression equation was found that ($F (9,176) = 13.164, p < 0.000$), with an $R^2 = 0.402$ (Cronk, 2012).

Firstly, to validate how much variance in a dependent variable (purchase intention) is explained by four independent variables in this model, the value of the R Squared (adjusted) is discussed. In this study, a multiple regression analysis discovered that 37% (Adjusted R Square) of variance in a purchase intention is explained by four independent variables in the model (Table 11). To sum up, 37% (Adjusted R Square) of local food purchase intention was explained by extended TPB model in this research.
Table 11 Results of multiple regression analysis.

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>p</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R square</th>
<th>Std. Error of the Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>83.117</td>
<td>9</td>
<td>9.235</td>
<td>13.164</td>
<td>0.000b</td>
<td>0.634a</td>
<td>0.402</td>
<td>0.372</td>
<td>0.838</td>
</tr>
<tr>
<td>Residual</td>
<td>123.474</td>
<td>176</td>
<td>0.702</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>206.591</td>
<td>185</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: Dependent variables- Purchase Intention. Predictors- (Constant), International dummy, Attitude, Subjective norm, Perceived availability, Moral norm, International attitude, International subjective norm, International perceived availability, and International moral norm. p < 0.05.

Table 12 Proposed multiple regression model.

\[
PI = b_0 + b_{01}c_{01} + b_{11}x_1 + b_{12}x_2 + b_{13}x_3 + b_{21}x_2c_1 + b_{31}x_3c_1 + b_{41}x_4 + b_{42}x_4c_1 + \varepsilon
\]

Multiple Regression: Variables

\(PI\) = Purchase intention

\(b_0\) = Intercept

\(x_1, x_2, x_3, x_4\) = Variables (attitude, subjective norm, perceived availability, moral norm)

\(c\) = dummy variables

Secondly, each beta coefficients of independent constructs from the model was evaluated to verify the most influential predictor to local food purchase intention (Table 13). The attitude, subjective norm and, perceived availability, and moral norm constructs positively influenced the local food purchase intention. A perceived availability construct revealed the strongest effect on local food purchase intention (\(\beta = 0.418, p < 0.001\)) (Table13). This means that corresponding to one unit (SD) increase in perceived availability, local food purchase intention will increase by 0.418 (SD) when all other variables are held constant. Next an attitude construct demonstrated statically significant correlations (\(\beta = 0.275, p < 0.031\)) (Table13). This means that corresponding to one unit (SD) increase in attitude, local food purchase intention will increase by 0.275 (SD) when all other variables are held constant. A subjective norm construct demonstrated statically significant correlations (\(\beta = 0.236, p < 0.039\)) (Table13). This means that
corresponding to one unit (SD) increase in subjective norm, local food purchase intention will increase by 0.236 (SD) when all other variables are held constant. A moral norm construct demonstrated statically significant correlations ($\beta = 0.262, p < 0.004$) (Table 13). This means that corresponding to one unit (SD) increase in moral norm, local food purchase intention will increase by 0.262 (SD) when all other variables are held constant. In a context of food and students, our research disagree with earlier study on Iranian students and organic food purchase intention, which discovered that attitude was the most influential construct (Yazdanpanah and Forouzani, 2015). However, perceived availability e.g. ease of access, identification, availability seems the most influential construct in our study.

<table>
<thead>
<tr>
<th>Independent construct</th>
<th>$\beta$</th>
<th>SE</th>
<th>t-statistics</th>
<th>$P$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attitude</td>
<td>0.275</td>
<td>0.127</td>
<td>2.171</td>
<td>0.031*</td>
</tr>
<tr>
<td>Subjective norm</td>
<td>0.236</td>
<td>0.114</td>
<td>2.078</td>
<td>0.039*</td>
</tr>
<tr>
<td>Perceived availability</td>
<td>0.418</td>
<td>0.129</td>
<td>3.230</td>
<td>0.001*</td>
</tr>
<tr>
<td>Moral norm</td>
<td>0.262</td>
<td>0.089</td>
<td>2.957</td>
<td>0.004*</td>
</tr>
<tr>
<td>International attitude</td>
<td>-0.290</td>
<td>0.250</td>
<td>-1.157</td>
<td>0.249</td>
</tr>
<tr>
<td>International subjective norm</td>
<td>0.059</td>
<td>0.224</td>
<td>0.266</td>
<td>0.791</td>
</tr>
<tr>
<td>International perceived availability</td>
<td>-0.104</td>
<td>0.270</td>
<td>-0.384</td>
<td>0.701</td>
</tr>
<tr>
<td>International moral norm</td>
<td>0.005</td>
<td>0.188</td>
<td>0.024</td>
<td>0.981</td>
</tr>
</tbody>
</table>

**Note:** Dependent Variable- Purchase Intention. International refers to dummy variables for international students. * means $p < 0.05$.

### 6.7 Hypotheses testing

Multiple regression was used to test the hypotheses. The results are presented in Table 14.

The relationship between attitude and a purchase intention revealed a statistically significant pattern ($\beta = 0.275, p < 0.031$) (Table 13). Therefore, H1: There is a positive relationship between
attitude and intention to purchase local food was supported. Students’ positive attitude related to local food such as health, quality, and supports on local community were positively linked to local food purchase intention. The relationship between subjective norm and a purchase intention shown a statistically significant pattern ($\beta = 0.236, p < 0.039$) (Table 13). For, H2: There is a positive relationship between subjective norm and intention to purchase local food, was supported as well. Social influences such as friends, university community, and family were positively linked to local food purchase intention.

The relationship between perceived availability and a purchase intention shown a statistically significant pattern ($\beta = 0.418, p < 0.001$) (Table 13), so H3: There is a positive relationship between perceived availability and intention to purchase local food, was supported. Ease of access, identification, and availability were positively linked to local food purchase intention.

The relationship between moral norm and a purchase intention shown a statistically significant pattern ($\beta = 0.262, p < 0.004$) (Table 13). Therefore, H4: There is a positive relationship between a moral norm and the intention to purchase local food, was supported. Inter-personal obligations within a person were positively linked to local food purchase intention.

Sub-hypotheses were tested to verify the difference between domestic and intentional students in each constructs. The results are presented in Table 13. H1 a) There is no difference between domestic and international students’ attitude and intention to purchase local food revealed a statistically insignificant pattern ($\beta = -0.290, p = \text{n.s}$) (Table 13) so H1 a) was supported. H2 a) There is no difference between domestic and international students’ subjective norms and intention to purchase local food ($\beta = 0.059, p = \text{n.s}$) (Table 13) was statistically insignificant so H2 a) was supported. H3 a) There is no difference between domestic and international students’ perceived availability and intention to purchase local food ($\beta = -0.104, p = \text{n.s}$) (Table 13) was
statically insignificant, so H3 a) was supported. H4 a) There is no difference between domestic and international students’ moral norm and intention to purchase local food ($\beta = 0.005, p = n.s$) (Table 13) was statically insignificant so H4 a) was supported.

Table 14 Hypotheses and results.

<table>
<thead>
<tr>
<th>Hypotheses</th>
<th>Statements</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>H1</td>
<td>There is a positive relationship between attitude and intention to purchase local food.</td>
<td>Supported</td>
</tr>
<tr>
<td>H1a)</td>
<td>There is no difference between domestic and international students’ attitude and intention to purchase local food.</td>
<td>Supported</td>
</tr>
<tr>
<td>H2</td>
<td>There is a positive relationship between subjective norm and intention to purchase local food.</td>
<td>Supported</td>
</tr>
<tr>
<td>H2a)</td>
<td>There is no difference between domestic and international students’ subjective norm and intention to purchase local food.</td>
<td>Supported</td>
</tr>
<tr>
<td>H3</td>
<td>There is a positive relationship between perceived availability and intention to purchase local food.</td>
<td>Supported</td>
</tr>
<tr>
<td>H3a)</td>
<td>There is no difference between domestic and international students’ perceived availability and intention to purchase local food.</td>
<td>Supported</td>
</tr>
<tr>
<td>H4</td>
<td>There is a positive relationship between moral norm and intention to purchase local food.</td>
<td>Supported</td>
</tr>
<tr>
<td>H4a)</td>
<td>There is no difference between domestic and international students’ moral norm and intention to purchase local food.</td>
<td>Supported</td>
</tr>
</tbody>
</table>

**6.8 Relation to TPB**

In this research, original constructs from TPB and an additional construct moral norm revealed a positive correlation and statistical significance, which supported all hypotheses. This means that TPB is an effective framework to predict local food purchase intention. A multiple regression analysis revealed that 37% (Adjusted R-square) ($F(9,176)=13.164, p<0.000$), with an $R^2 = 0.402$, demonstrating that the extended TPB model in this research explained 37% (Adjusted R-square) of predictive power. These findings agree with Iranian students’ intention to purchase organic food research (Yazdanpanah and Forouzani, 2015). Yazdanpanah and
Forouzani (2015) compared an original TPB model and an extended TPB model by adding additional constructs: moral norm and self-identity constructs. Their extended model was able to explain a strong 65% of organic food purchase intention of Iranian students. These additional constructs were found to be statistically significant and a subjective norm construct and a perceived behavior control construct were found to be insignificant. Similarly, extended TPB model in this research successfully proved that a moral norm construct positively influence local food purchase intention of students. Overall, extended TPB model appeared useful to predict local food purchase intention of domestic and international students in this research.

6.9 Synthesis

This analysis leads to three main findings. Firstly, there are differences between the definition of local food by domestic and international students. Domestic students are three times more likely to say local food is food grown/raised within 100km where they live, while international students are three times more likely to say only that local food is grown in Canada (Table 5). These results indicate that domestic students narrowly defined the local food in distance compared to international students. The multiple regression analysis explained that a perceived availability construct revealed the strongest effect on intention to purchase local food ($\beta = 0.418, p < 0.001$) (Table 13). This means that corresponding to one unit (SD) increase in perceived availability, local food purchase intention will increase by 0.418 (SD) when all other variables are held constant. The ease of access, identification, availability of local food were positively linked to local food purchase intention. Lastly, the newly added moral norm construct positively influenced local food purchase intention of students, meaning that inter-personal obligations within a person were positively linked to local food purchase intention. An
additional construct moral norm seemed useful to predict local food purchase intention of students in this research.
CHAPTER 7: CONCLUSIONS

The purpose of this research was to examine the definition and to predict local food purchase intentions of domestic and international students at University of Guelph. “Food grown/raised within 100km where person lives” was the most commonly chosen response at 57.7%. “Grown in the province (e.g. Ontario) person lives” 51.5% was the second most commonly chosen followed by “Food purchased from farmer’s market” (48.5%). There was a significant difference between domestic and international students on definition of local food. Domestic students narrowly defined the local food in distance compare to international students. Domestic students are more likely to say local food is “food grown/raised within 100km where person lives” but international students are more likely to say local food is “grown in Canada”. Hypotheses were tested by using multiple regression analysis. The multiple regression analysis discovered that 37% (Adjusted R Square) of variance in purchase intention is explained by four independent variables in the proposed model. Attitude, subjective norm, perceived availability, and moral norm constructs positively influenced the local food purchase intention. Students’ positive attitude related to local food such as health, quality, and supports on local community were positively linked to local food purchase intention. Social influences such as friends, university community, and family were positively linked to local food purchase intention. The ease of access, identification, availability were positively linked to local food purchase intention. The inter-personal obligations within a person were positively linked to local food purchase intention.

There were no differences between domestic and international students on all constructs meaning that all the hypotheses were supported. A perceived availability construct revealed the strongest influence in local food purchase intention of students. A moral norm construct positively influenced the local food purchase intention in this study, and this construct seemed
useful to predict local food purchase intention of students in current study. Current research findings verified that there is a significant use of a moral norm construct to predict local food purchase intention of students. The research also discovered that there were differences in domestic and international students’ perception in local food definition and local food category e.g. domestic students’ local food category is larger than international students’ local food category.
CHAPTER 8: IMPLICATIONS

Based on the major research findings, six key questions were created. These six key point questions can be used as a guideline when promoting local food to students. For instance, effective marketing campaign messages toward student consumers can be created by using following questions e.g. “Grilling season is back, we are serving 100 percent local-beef burgers, and a variety of condiments made from fresh Ontario grown local food at Creeman Hall, come join us eat local and support local!” For the local food growers, and supermarket chain operations, following message can displayed at the market: “Ontario grown asparagus, peaches, corns and strawberries are available during summer, eat local and support Ontario.”

What are they?

This question was created based on the difference in understanding/organization of the different local food categories between domestic and international students. Previously, domestic students had a wider food category knowledge (vegetables food category, fruits food category, and lean meats, poultries food category) than international students (vegetables food category and fruits food category). Considering this question can help to reduce local food knowledge gap between domestic and international students.

Where can I find it?

This question was created based on a perceived availability construct. The perceived availability construct revealed the strongest effect on intention to purchase local food in the current study. The perceived availability in this study means ease of access, ease of identification, and availability to local food. Providing information of local growers and specific name of retailers can help the students with local food shopping.
When can I find it?

This question was created based on a perceived availability construct. One of the question from the survey was worded as “Q15. I would prefer to buy local food but sometimes it is impossible due to Canadian climate.” International students may not be familiar with Canadian climate compare to domestic students. Informing seasonal availability of local food can help international students to understand Canadian climate better, thus broadening the local food category.

Who grows it?

This question was created based on an attitude construct. In this study, the attitude construct positively influenced local food purchase intention. Q6 emphasizes this point. “It is important as a student at the University of Guelph to support Ontario local farmers and our local business in Ontario”. Knowing the growers e.g. local farmers can help students to understand the importance of supporting local food and local farmers.

How can I benefit others?

This question was made based on a moral norm construct. The moral norm construct positively influenced the local food purchase intention of the students. According to Neuborne and Kerwin (1999), the Millennial Generation (college-age group) in the U.S. are brought up environmentally conscious, they want fresh and clean product that does not involve animal testing and potential damage on ozone layer quality (Neuborne and Kerwin, 1999). Overall, they are socially responsible (Farris et al., 2002). The objective of this study was observing the significance of moral norm and Millennial Generation students, whether their environmental
support is related to their local food purchase intention. Informing environmental benefits of local food with the moral obligation can add value to local food marketing to students.

**Why is it good for me?**

This question was created based on an attitude construct. The attitude construct positively influenced local food purchase intention in current study. An attitude in this study means overall perception of the local food e.g. health, quality, and support on local community. These attributes were previously recognized as the personal drivers to local food including taste, freshness, and superiority of produce (Chambers et al. 2007; Murphy, 2011; Penney and Prior, 2014; Bianchi and Mortimer, 2015). Consumers recognize local food as fresher (Bruhn et al., 1992; Chambers et al., 2007; Onozaka et al., 2010) and pick freshness as the main driver of local food (Feagan et al., 2004; IGD, 2008). The health benefit of local food is critical because this was acknowledged by other researchers as one of important driver that encourage consumers to consume local food (Eičaitė and Dabkienė, 2015; Bianchi and Mortimer, 2015). Emphasizing this personal benefit of local food will greatly enhance reaching out efforts to the student consumers.
CHAPTER 9: LIMITATIONS AND FUTURE RESEARCH

While this study makes a strong contribution by discovering local food purchase intention of domestic and international students, it is necessary to look at the limitations.

First, a convenience sample was obtained using a non-probability sampling method so a sample was not randomly chosen and a sampling frame was unknown. This led to a limitation into study’s ability to be generalized to the university student population (“Convenience sampling,” n.d.). There is also a possibility of under-representation of certain origins of international student populations by using a convenience sample because majority of international students at School of Hospitality, Food and Tourism are from China (“Convenience sampling,” n.d.).

Possible future research can investigate a specific origin of international students’ perception and local food (e.g. Korean university students and local food) Moreover, a convenience sample used in this research does not automatically reflect the general undergraduate students’ populations at the University of Guelph. For example, undergraduate respondents were from School of Hospitality, Food and Tourism so they are more likely to have stronger perspectives on importance of local food and environmental sustainability than other students less in departments or academic areas where they are less exposed or interested about food issues. Therefore, the readers should be aware of this potential sampling bias when interpreting or extending major findings of this research to the general undergraduate students’ population at the University of Guelph.

Second, low response rates of international students. In current research, number of domestic and international students were not equal because convenience sample was used (domestic
students: 140, international students: 55, missing: 1). Our sample was homogenous in age, income, and income level so more intentional student respondents will likely to provide similar results. However, there is also possibility for the different results from more international student respondents. Third, a geographical limitation exists. The sample of student populations was obtained only from University of Guelph, which is a medium-sized town in southern Ontario, Canada. There is a possibility that sample of students from a metropolitan area (e.g. Toronto) have different perceptions on local food. Future research can compare local food and perceptions of students from different universities located in rural and urban areas. Based upon only four predictors of local food purchase intentions of domestic and international students, a fourth limitation include unexplained influences by the model e.g. willingness to pay for the local food, and characteristics of local food shopper, which were introduced in the literature review.

Lastly, among one of the survey questions, local food categories were grouped (e.g. lean meats, poultries, fish, eggs, nuts) rather than individually listed, meaning that students cannot select individual items. For future research, each food item can be listed individually to gain more detailed perceptions on local food category.
References


Appendix A  Survey Questions

Title: Understanding Local Food Purchase Intentions of Domestic and International Students

You are invited to take part in a study to develop and improved understanding of local food purchase intentions.

If you have any questions or concerns about the research, please feel free to contact Mike von Massow (Principal Investigator from the Department of Food Agricultural and Resource Economics) or Yoonah Kim (student researcher from the School of Hospitality, Food and Tourism Management) at yoonah@uoguelph.ca.

Purpose of the Study

The goal of the study is to understand the attitudes of students towards local food and the factors affecting whether they plan to purchase locally or not. We would also like to understand if there is a difference between domestic and international students. Study participants are to be undergraduate students at the University of Guelph.

You will receive the 2% course credit for your participation.

Consent

If you choose to participate in the study, we ask you to scroll down and click agree at the end of this page. Clicking agree signifies your consent to participate and the survey will begin.

You may choose to withdraw at any time during the survey and can choose not to answer specific questions. We appreciate your participation and expect the survey will take no longer than five or ten minutes to complete. If you choose to withdraw you will still receive the course credit.

There are no identifiers collected in the survey so your responses will not be connected to you in any way. IP addresses will not be collected.

The anonymous data will be kept for a period of one year to complete analysis. Only the principal investigator and student researcher will have access to the data.

Potential Risks and Discomforts

There could be some psychological discomfort associated with disclosing whether or not you plan to buy local food. We believe, however, that this should not exceed regular daily interactions. Please remember that there is no identifying information linked to your responses. Your responses are anonymous.

You are free to withdraw from this study if you do not feel comfortable participating (simply exit from the website). If you do participate, you may skip any question that you are not comfortable answering.

This project has been reviewed by the Research Ethics Board for compliance with federal guidelines for research involving human participants. If you have any questions regarding your
rights as a research participant in this study, please contact the Director, Research Ethics at the University of Guelph at reb@uoguelph.ca or (519) 824-4120 (x 56606).

1. Are you registered as an international student?
   ☐ Yes  ☐ No  ☐ Prefer not to answer
2. How would you define local foods? Please select all that applies.
   ☐ Grown in the province (e.g. Ontario) person lives.
   ☐ Food grown/raised within 100km where person lives.
   ☐ Grown in Canada.
   ☐ Verified as Ontario grown. (e.g. Foodland Ontario)
   ☐ Food purchased from farmer’s market.
   ☐ Other (Please specify) ________________________________________________
3. Based on your previous food purchase, which of the following food group(s) is/are available as local food? Please select all that applies.
   ☐ Vegetables
   ☐ Legumes/beans
   ☐ Fruits
   ☐ Grain (cereal food)
   ☐ Lean meats, poultries, fish, eggs, nuts
   ☐ Milk, yoghurt, cheese
   ☐ Other (Please specify) ________________________________________________

*In this survey, we are interested in following foods: vegetables, fruits, and unprocessed meats e.g. apples and pork.

4. Based on your normal food purchase decisions, please indicate your opinions about the following suggestions, where 1 means strongly disagree, and 6 means strongly agree.

<table>
<thead>
<tr>
<th>Q1. I intend to purchase local food when I shop at grocery store.</th>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Somewhat disagree</th>
<th>Somewhat agree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Q2. I intend to purchase local food when I dine on campus.</th>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Somewhat disagree</th>
<th>Somewhat agree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>Question</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>-------------------------------------------------------------------------</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>Q3. Purchasing local food is a healthy choice.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q4. Local foods are no healthier than imported foods from reputable sources.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q5. Local food is fresher than imported food.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q6. It is important as a student at the University of Guelph to support Ontario local farmers and our local business community in Ontario.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q7. Local food is not likely tastier than the same food when imported.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q8. My friends don’t care whether or not I purchase local food.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q9. University community thinks that I should buy local food.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q10. My family don’t care whether or not I should purchase local food.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q11. I can find locally produced food in my grocery store.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q12. It is easy to identify in my local grocery which foods are produced locally.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q13. I can find locally produced food at food service establishments on my campus.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Q14. I find it difficult to identify what foods served on campus are based on local ingredients.  
1 2 3 4 5 6

Q15. I would prefer to buy local food but sometimes it is impossible due to Canadian climate.  
1 2 3 4 5 6

Q16. I can easily find imported food than local food.  
1 2 3 4 5 6

Q17. I don’t feel an obligation to purchase local food rather than imported food.  
1 2 3 4 5 6

Q18. Purchasing local food rather than imported food makes me feel a better person than consumers of imported food.  
1 2 3 4 5 6

Please tell us a little about yourself. As a reminder, all responses will be kept confidential.

5. Are you?
☐ Male  ☐ Female  ☐ Prefer not to answer

6. What is your age?
☐ Between 18 and 24  ☐ Between 45 and 54  
☐ Between 25 and 34  ☐ Between 55 and 64  
☐ Between 35 and 44  ☐ 65 or over
☐ Prefer not to answer

7. What is the degree or level of formal education you are currently pursuing? (Check one)
☐ Certificate or diploma  
☐ Bachelor’s degree  ☐ Master’s degree  
☐ PhD degree  ☐ Prefer not to answer
☐ Other: Please specify ______________

8. Please indicate your approximate annual personal income. ($CAD)
☐ Less than $20,000  ☐ $60,000 to less than $80,000
☐ $20,000 to less than $40,000  ☐ $80,000 to less than $100,000
☐ $40,000 to less than $60,000
☐ $100,000 or more
Appendix B  Tables

Table 4 The Pearson’s correlation analysis- definitions of local food. How would you define local food?

<table>
<thead>
<tr>
<th>Items</th>
<th>Domestic</th>
<th>Sig.</th>
<th>Food grown/raised within 100km where person lives.</th>
<th>Sig.</th>
<th>Grown in Canada.</th>
<th>Sig.</th>
<th>Verified as Ontario grown. (e.g. Foodland Ontario)</th>
<th>Sig.</th>
<th>Food purchase from farmer’s market.</th>
<th>Sig.</th>
<th>Other (Please specify)</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grown in the province (e.g. Ontario) person lives.</td>
<td>1.00</td>
<td>N/A</td>
<td>0.016</td>
<td>0.825</td>
<td>0.009</td>
<td>0.902</td>
<td>0.245**</td>
<td>0.001</td>
<td>0.124</td>
<td>0.085</td>
<td>0.140</td>
<td>0.050</td>
</tr>
<tr>
<td>Food grown/raised within 100km where person lives.</td>
<td>0.016</td>
<td>0.825</td>
<td>1.00</td>
<td>N/A</td>
<td>-0.232**</td>
<td>0.001</td>
<td>0.060</td>
<td>0.400</td>
<td>0.232**</td>
<td>0.001</td>
<td>0.051</td>
<td>0.481</td>
</tr>
<tr>
<td>Grown in Canada.</td>
<td>0.009</td>
<td>0.902</td>
<td>-0.232**</td>
<td>0.001</td>
<td>1.00</td>
<td>N/A</td>
<td>0.123</td>
<td>0.086</td>
<td>0.016</td>
<td>0.824</td>
<td>0.013</td>
<td>0.861</td>
</tr>
<tr>
<td>Verified as Ontario grown. (e.g. Foodland Ontario)</td>
<td>0.245**</td>
<td>0.001</td>
<td>0.060</td>
<td>0.400</td>
<td>0.123</td>
<td>0.086</td>
<td>1.00</td>
<td>N/A</td>
<td>0.316**</td>
<td>0.000</td>
<td>0.100</td>
<td>0.162</td>
</tr>
<tr>
<td>Food purchased from farmer’s market.</td>
<td>0.124</td>
<td>0.085</td>
<td>0.232**</td>
<td>0.001</td>
<td>0.016</td>
<td>0.824</td>
<td>0.316**</td>
<td>0.000</td>
<td>1.00</td>
<td>N/A</td>
<td>0.077</td>
<td>0.286</td>
</tr>
<tr>
<td>Other (Please specify)</td>
<td>0.140</td>
<td>0.050</td>
<td>0.051</td>
<td>0.481</td>
<td>0.013</td>
<td>0.861</td>
<td>0.100</td>
<td>0.162</td>
<td>0.077</td>
<td>0.286</td>
<td>1.00</td>
<td>N/A</td>
</tr>
</tbody>
</table>

Note: **. Correlation is significant at the 0.01 level (2-tailed).

Table 5 Difference between domestic and international students’ definitions of local food. How would you define local food?

<table>
<thead>
<tr>
<th>Items</th>
<th>Domestic</th>
<th>Mean</th>
<th>Sd.</th>
<th>N</th>
<th>Sd. Error Mean</th>
<th>International</th>
<th>Mean</th>
<th>Sd.</th>
<th>N</th>
<th>Sd. Error Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grown in the province (e.g. Ontario) person lives.</td>
<td>0.57</td>
<td>0.497</td>
<td>141</td>
<td>0.042</td>
<td>0.38</td>
<td>0.490</td>
<td>55</td>
<td>0.066</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Food grown/raised within 100km where person lives.</td>
<td>0.71</td>
<td>0.456</td>
<td>141</td>
<td>0.038</td>
<td>0.24</td>
<td>0.429</td>
<td>55</td>
<td>0.058</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grown in Canada.</td>
<td>0.13</td>
<td>0.335</td>
<td>141</td>
<td>0.028</td>
<td>0.44</td>
<td>0.501</td>
<td>55</td>
<td>0.067</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Verified as Ontario grown. (e.g. Foodland Ontario)</td>
<td>0.43</td>
<td>0.496</td>
<td>141</td>
<td>0.042</td>
<td>0.36</td>
<td>0.485</td>
<td>55</td>
<td>0.065</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Food purchased from farmer’s market.</td>
<td>0.49</td>
<td>0.502</td>
<td>141</td>
<td>0.042</td>
<td>0.47</td>
<td>0.504</td>
<td>55</td>
<td>0.068</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other (Please specify)</td>
<td>0.02</td>
<td>0.145</td>
<td>141</td>
<td>0.012</td>
<td>0.02</td>
<td>0.135</td>
<td>55</td>
<td>0.018</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
**Note:** *means p < 0.05 (2-tailed).

Table 7 The Pearson’s correlation analysis- local food category. Based on your previous food purchase, which of the following food group(s) is/are available as local food?

<table>
<thead>
<tr>
<th>Items</th>
<th>Vegetables</th>
<th>Sig.</th>
<th>Legumes/Bean</th>
<th>Sig.</th>
<th>Fruits</th>
<th>Sig.</th>
<th>Green (cereal, food)</th>
<th>Sig.</th>
<th>Lent meats, poultries, fish, eggs, nuts</th>
<th>Sig.</th>
<th>Milk, yogurt, cheese</th>
<th>Sig.</th>
<th>Other (Please specify)</th>
<th>Sig.</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0.106</td>
<td>N/A</td>
<td>0.109</td>
<td>0.121</td>
<td>0.409**</td>
<td>0.000</td>
<td>0.014</td>
<td>0.112</td>
<td>0.212*</td>
<td>0.069</td>
<td>0.336**</td>
<td>0.006</td>
<td>0.155**</td>
<td>N/A</td>
<td>0.010**</td>
</tr>
<tr>
<td>Legumes/Bean</td>
<td>0.109</td>
<td>0.131</td>
<td>0.100</td>
<td>N/A</td>
<td>0.001</td>
<td>0.019</td>
<td>0.059**</td>
<td>0.000</td>
<td>0.317**</td>
<td>0.000</td>
<td>0.336**</td>
<td>0.000</td>
<td>0.155**</td>
<td>N/A</td>
<td>0.073</td>
</tr>
<tr>
<td>Fruits</td>
<td>0.409**</td>
<td>0.000</td>
<td>-0.017</td>
<td>0.409</td>
<td>1.08</td>
<td>N/A</td>
<td>-0.014</td>
<td>0.100</td>
<td>0.195**</td>
<td>0.000</td>
<td>0.345**</td>
<td>0.000</td>
<td>0.610</td>
<td>0.010</td>
<td>0.049</td>
</tr>
<tr>
<td>Lent meats, poultries, fish, eggs, nuts</td>
<td>0.121</td>
<td>0.132</td>
<td>0.100</td>
<td>N/A</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>0.100</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>N/A</td>
<td>0.000</td>
</tr>
<tr>
<td>Milk, yogurt, cheese</td>
<td>0.006</td>
<td>0.057</td>
<td>0.075</td>
<td>0.110</td>
<td>0.121</td>
<td>0.242**</td>
<td>0.000</td>
<td>0.001</td>
<td>0.374**</td>
<td>0.000</td>
<td>0.121</td>
<td>0.000</td>
<td>0.155**</td>
<td>N/A</td>
<td>0.030</td>
</tr>
<tr>
<td>Other (Please specify)</td>
<td>-0.410**</td>
<td>0.000</td>
<td>-0.104</td>
<td>0.149</td>
<td>0.001</td>
<td>-0.089</td>
<td>0.216</td>
<td>-0.705**</td>
<td>0.000</td>
<td>-0.155**</td>
<td>0.030</td>
<td>1.00</td>
<td>N/A</td>
<td>0.000</td>
<td>0.000</td>
</tr>
</tbody>
</table>

Note: **Correlation is significant at the 0.01 level (2-tailed). * Correlation is significant at the 0.05 level (2-tailed)
Table 8 Difference between domestic and international students’ local food category. Based on your previous food purchase, which of the following food group(s) is/are available as local food?

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Vegetables</td>
<td>0.95</td>
<td>0.218</td>
<td>141</td>
<td>0.018</td>
<td>0.87</td>
<td>0.336</td>
<td>55</td>
<td>0.045</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Legumes/beans</td>
<td>0.44</td>
<td>0.498</td>
<td>141</td>
<td>0.042</td>
<td>0.33</td>
<td>0.474</td>
<td>55</td>
<td>0.064</td>
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<td></td>
</tr>
<tr>
<td>Fruits</td>
<td>0.84</td>
<td>0.364</td>
<td>141</td>
<td>0.031</td>
<td>0.67</td>
<td>0.474</td>
<td>55</td>
<td>0.064</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grain (cereal food)</td>
<td>0.34</td>
<td>0.476</td>
<td>141</td>
<td>0.040</td>
<td>0.33</td>
<td>0.474</td>
<td>55</td>
<td>0.064</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lean meats, poultries, fish, eggs, nuts</td>
<td>0.79</td>
<td>0.411</td>
<td>141</td>
<td>0.015</td>
<td>0.51</td>
<td>0.505</td>
<td>55</td>
<td>0.068</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Milk, yogurt, cheese</td>
<td>0.64</td>
<td>0.482</td>
<td>141</td>
<td>0.041</td>
<td>0.53</td>
<td>0.504</td>
<td>55</td>
<td>0.068</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other (Please specify)</td>
<td>0.01</td>
<td>0.119</td>
<td>141</td>
<td>0.010</td>
<td>0.02</td>
<td>0.135</td>
<td>55</td>
<td>0.018</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Independent samples test

<table>
<thead>
<tr>
<th>Levene’s Test for Equality of Variances</th>
<th>t-test for equality of Means</th>
<th>95% Confidence Interval of the Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>F</td>
<td>Sig.</td>
<td>t</td>
</tr>
<tr>
<td>Vegetables Equal variance assumed</td>
<td>14.257</td>
<td>0.000</td>
</tr>
<tr>
<td>Equal variance not assumed</td>
<td>-1.587</td>
<td>72.395</td>
</tr>
<tr>
<td>Legumes/beans Equal variance assumed</td>
<td>10.808</td>
<td>0.001</td>
</tr>
<tr>
<td>Equal variance not assumed</td>
<td>-1.472</td>
<td>103.255</td>
</tr>
<tr>
<td>Fruits Equal variance assumed</td>
<td>23.492</td>
<td>0.000</td>
</tr>
<tr>
<td>Equal variance not assumed</td>
<td>-2.417</td>
<td>80.144</td>
</tr>
<tr>
<td>Grain (cereal food) Equal variance assumed</td>
<td>0.126</td>
<td>0.723</td>
</tr>
<tr>
<td>Equal variance not assumed</td>
<td>-0.175</td>
<td>98.935</td>
</tr>
<tr>
<td>Lean meats, poultries, fish, eggs, nuts Equal variance assumed</td>
<td>26.745</td>
<td>0.000</td>
</tr>
<tr>
<td>Equal variance not assumed</td>
<td>-3.645</td>
<td>83.378</td>
</tr>
<tr>
<td>Milk, yogurt, cheese Equal variance assumed</td>
<td>4.099</td>
<td>0.044</td>
</tr>
<tr>
<td>Equal variance not assumed</td>
<td>-1.403</td>
<td>94.810</td>
</tr>
<tr>
<td>Others (Please specify) Equal variance assumed</td>
<td>0.166</td>
<td>0.684</td>
</tr>
<tr>
<td>Equal variance not assumed</td>
<td>0.193</td>
<td>88.446</td>
</tr>
</tbody>
</table>

Note: *means p < 0.05 (2-tailed).
Table 9: The Pearson's correlation analysis- all constructs.

<table>
<thead>
<tr>
<th>Items</th>
<th>Purchase intention</th>
<th>Sig.</th>
<th>Attitude</th>
<th>Sig.</th>
<th>Subjective norm</th>
<th>Sig.</th>
<th>Perceived availability</th>
<th>Sig.</th>
<th>Moral norm</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Purchase intention</td>
<td>1.00</td>
<td>N/A</td>
<td>0.389**</td>
<td>0.000</td>
<td>0.376**</td>
<td>0.000</td>
<td>0.367**</td>
<td>0.000</td>
<td>0.441**</td>
<td>0.000</td>
</tr>
<tr>
<td>Attitude</td>
<td>0.389**</td>
<td>0.000</td>
<td>1.00</td>
<td>N/A</td>
<td>0.456**</td>
<td>0.000</td>
<td>0.263**</td>
<td>0.000</td>
<td>0.507**</td>
<td>0.000</td>
</tr>
<tr>
<td>Subjective norm</td>
<td>0.376**</td>
<td>0.000</td>
<td>0.456**</td>
<td>0.000</td>
<td>1.00</td>
<td>N/A</td>
<td>0.237**</td>
<td>0.001</td>
<td>0.556**</td>
<td>0.000</td>
</tr>
<tr>
<td>Perceived availability</td>
<td>0.367**</td>
<td>0.000</td>
<td>0.263**</td>
<td>0.000</td>
<td>0.237**</td>
<td>0.001</td>
<td>1.00</td>
<td>N/A</td>
<td>0.266**</td>
<td>0.000</td>
</tr>
<tr>
<td>Moral norm</td>
<td>0.441**</td>
<td>0.000</td>
<td>0.507**</td>
<td>0.000</td>
<td>0.556**</td>
<td>0.000</td>
<td>0.266**</td>
<td>0.000</td>
<td>1.00</td>
<td>N/A</td>
</tr>
</tbody>
</table>

Note: **Correlation is significant at the 0.01 level (2-tailed).

Table 10: Descriptive statistics- domestic and international students on all constructs & Difference between domestic and international students on all constructs.

<table>
<thead>
<tr>
<th>Independent constructs</th>
<th>Domestic</th>
<th></th>
<th>International</th>
<th></th>
<th>Difference between means</th>
<th></th>
<th>Mean</th>
<th></th>
<th></th>
<th>95% Confidence Interval of the Mean</th>
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<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>SD</td>
<td>N</td>
<td>Mean</td>
<td>SD</td>
<td>N</td>
<td></td>
<td>Mean</td>
<td>SD</td>
<td>Lower</td>
</tr>
<tr>
<td>Purchase intention</td>
<td>3.45</td>
<td>1.059</td>
<td>141</td>
<td>3.88</td>
<td>0.995</td>
<td>54</td>
<td>0.135</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Attitude</td>
<td>4.29</td>
<td>0.724</td>
<td>137</td>
<td>4.11</td>
<td>0.592</td>
<td>55</td>
<td>0.080</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Subjective norm</td>
<td>3.08</td>
<td>0.785</td>
<td>140</td>
<td>2.79</td>
<td>0.825</td>
<td>55</td>
<td>0.111</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perceived availability</td>
<td>4.00</td>
<td>0.610</td>
<td>138</td>
<td>3.91</td>
<td>0.498</td>
<td>52</td>
<td>0.069</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Moral norm</td>
<td>3.74</td>
<td>1.107</td>
<td>139</td>
<td>3.31</td>
<td>0.874</td>
<td>55</td>
<td>0.118</td>
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</tbody>
</table>

Independent samples test

<table>
<thead>
<tr>
<th></th>
<th>F</th>
<th>Sig.</th>
<th>t</th>
<th>df</th>
<th>Sig. (2-tailed)</th>
<th>Mean Difference</th>
<th>Std. Error Difference</th>
<th>Lower</th>
<th>Upper</th>
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<tbody>
<tr>
<td>Purchase Intention</td>
<td>0.392</td>
<td>0.532</td>
<td>2.554</td>
<td>193</td>
<td>0.011</td>
<td>0.426</td>
<td>0.167</td>
<td>0.097</td>
<td>0.755</td>
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<tr>
<td>Equal variance assumed</td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Equal variance not assumed</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Attitude</td>
<td>1.692</td>
<td>0.195</td>
<td>-1.604</td>
<td>190</td>
<td>0.110</td>
<td>-0.176</td>
<td>0.110</td>
<td>-0.393</td>
<td>0.041</td>
</tr>
<tr>
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<td></td>
<td></td>
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<tr>
<td>Subjective norm</td>
<td>0.513</td>
<td>0.475</td>
<td>-2.227</td>
<td>193</td>
<td>0.027</td>
<td>-0.282</td>
<td>0.127</td>
<td>-0.532</td>
<td>-0.032</td>
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<tr>
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<td></td>
<td></td>
</tr>
<tr>
<td>Equal variance not assumed</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Perceived availability</td>
<td>1.789</td>
<td>0.183</td>
<td>-0.986</td>
<td>188</td>
<td>0.325</td>
<td>-0.093</td>
<td>0.095</td>
<td>-0.280</td>
<td>0.093</td>
</tr>
<tr>
<td>Equal variance assumed</td>
<td></td>
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<tr>
<td>Equal variance not assumed</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Moral norm</td>
<td>6.613</td>
<td>0.011</td>
<td>-2.568</td>
<td>192</td>
<td>0.011</td>
<td>-0.428</td>
<td>0.167</td>
<td>-0.757</td>
<td>-0.099</td>
</tr>
<tr>
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<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Equal variance not assumed</td>
<td></td>
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<td></td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>-2.842</td>
<td>124.685</td>
<td>0.005</td>
<td>-0.428</td>
<td>0.151</td>
<td>-0.727</td>
<td>-0.130</td>
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</table>

Note: *means p < 0.05 (2-tailed).

Table 13: Coefficients- result of multiple regression coefficients for TPB independent constructs.

<table>
<thead>
<tr>
<th>Independent construct</th>
<th>β</th>
<th>SE</th>
<th>Standard Coefficients Beta</th>
<th>t-statistics</th>
<th>p</th>
</tr>
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<tbody>
<tr>
<td>(Constant)</td>
<td>-1.104</td>
<td>0.570</td>
<td>-1.939</td>
<td>0.054</td>
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</tr>
<tr>
<td>International dummy</td>
<td>2.133</td>
<td>1.409</td>
<td>0.908</td>
<td>1.514</td>
<td>0.132</td>
</tr>
<tr>
<td>Attitude</td>
<td>0.275</td>
<td>0.127</td>
<td>0.182</td>
<td>2.171</td>
<td>0.031*</td>
</tr>
<tr>
<td>Subjective norm</td>
<td>0.236</td>
<td>0.114</td>
<td>0.178</td>
<td>2.078</td>
<td>0.039*</td>
</tr>
<tr>
<td>Perceived availability</td>
<td>0.418</td>
<td>0.129</td>
<td>0.228</td>
<td>3.230</td>
<td>0.001*</td>
</tr>
<tr>
<td>Moral norm</td>
<td>0.262</td>
<td>0.089</td>
<td>0.261</td>
<td>2.957</td>
<td>0.004*</td>
</tr>
<tr>
<td>International attitude</td>
<td>-0.290</td>
<td>0.250</td>
<td>-0.517</td>
<td>-1.157</td>
<td>0.249</td>
</tr>
<tr>
<td>International subjective norm</td>
<td>0.059</td>
<td>0.224</td>
<td>0.075</td>
<td>0.266</td>
<td>0.791</td>
</tr>
<tr>
<td>International perceived availability</td>
<td>-0.104</td>
<td>0.270</td>
<td>-0.175</td>
<td>-0.384</td>
<td>0.701</td>
</tr>
<tr>
<td>International moral norm</td>
<td>0.005</td>
<td>0.188</td>
<td>0.007</td>
<td>0.024</td>
<td>0.981</td>
</tr>
</tbody>
</table>

Note: Dependent Variable: Purchase Intention. International refers to dummy variables for international students. *means p < 0.05.
Appendix C  Graphs

Descriptive statistics - definition of local food. How would you define local foods?

- How would you define local foods?
  - Grown in the province (e.g., Ontario) person lives.

- How would you define local foods?
  - Grown in Canada.

- How would you define local foods?
  - Food grown within 100km where person lives.
Descriptive statistics - availability of local food group category. Based on your previous food purchase, which of the following food group(s) is/are available as local food?

- Vegetables
- Fruits