Crossover Effect of Ethno-cultural Vegetables:

Examining the Guelph Consumers

by

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Abstract

The Crossover Effects of Ethno-cultural Vegetables: Examining the Guelph Consumers

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Over the years the migration to Canada has grown significantly, with Statistic Canada information suggesting that the increase between 2006 and 2010 was an average of 13.6%. This means that the population of Canada is becoming more and more multicultural with the inclusion of Asians, Afro-Caribbean and others. With the diversity of people comes diversity with cultures, which includes the type of food that people eat and thus ultimately what the market will demand.

Since 2010 the Ethno-Cultural Vegetable (ECV) Team at the University of Guelph has been researching ECV in Canada. One major finding suggests that the Greater Toronto Area has a significant market for ECV valued at $61M per month which is presently being supplied by imports. Further investigation however needs to be done to provide the various stakeholders more information on the growing market potential of ECV. The crossover effect of ECV; examining the Guelph Consumers’ knowledge and use of ECV is one of the research issues that will provide more information on this development. This research examines the present and future possible acceptance of ECV in the largely non-immigrant city of Guelph.

The research is based on an exploratory, descriptive and relational research design and a mixed method approach utilised in the collection and analysis of the data. The collection instruments are inclusive of surveys, focus groups and interviews thus validating the research by the process of triangulation.
The results of the research indicate among other things that the Guelph consumers are very adventurous and are willing to try ECV if certain criteria are met; including local production, availability and freshness. The findings of the research can lead to improved business decisions and policy development within Canada’s agricultural sector.
Acknowledgment

There are several individuals who must be acknowledged because without their support during this process, completion of this research and by extension my Msc in Capacity Development and Extension at the University of Guelph, might not have been possible or not have been such a rewarding experience. I draw on my own heritage and quote words from now deceased Jamaican reggae artist Dennis Brown “No man is an island, no man stands alone”.

I want to thank my advisory team. To my advisor, Dr. Glen Filson firstly for introducing me to his work and research of others which were done on ethnic vegetables. This introduction initiated my own interest on the subject matter and secondly for including me in the ECVOntario team, this gesture of assurance is something which will always stay with me. I am thirdly thankful for his guidance and overall genuine support throughout this challenging process.

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I would also like to extend my appreciation to those research assistants who assisted me in my data collection process. Special thanks to all the participants, who gave their time to share in the data collection process and contributed valuable information. Without you all sharing such information with me, completing this research would have been impossible.

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Last but not least I also want to thank my family and especially my wonderful parents
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Chapter 1

Introduction

1.0 The research background

According to Statistics Canada (2014), the Canadian population as of July 2014 was estimated to be over 35.54 Mil with Ontario the most populous with over 13.67 million residents. Canada is a diverse multicultural society with the greatest percentage of its population comprised of various ethnic groupings. The three fastest growing groups according to Statistic Canada (2014) in its National Household Survey, were the South Asian group representing 25%, The Chinese, representing 21.1% and the Afro-Caribbean/ Black grouping at 15.1%. Based on the information provided by the census it was noted that 1 in 5 people (19.1%) within Canada’s population is of a non-European descent, which is projected to continue increasing.

With this empirical evidence of Canada’s diverse population there is clearly going to be a continuous shift in consumer’s demand in response to the changes that are usually experienced with ethnic diversity. In a survey conducted by The Ethno Cultural Vegetable (ECV) team at the University of Guelph in 2010 it was revealed that there was a monthly demand valuing over $61Mil among ethnic groups for specific vegetables inclusive of bok choy, amaranths/calalloo and okra, of which a large percentage is being imported although Canada has the capacity to produce at least some (Filson et al, 2011).

The ECV Ontario team, headed by Dr. Glen Filson, has commissioned and published several other research articles examining the ECV subsector, with greater emphasis on understanding the demand within the ethnic population. Publications among others include, an
examination of preferences for ethno-cultural foods in the Greater Toronto Area, contextual analysis of culturally appropriate vegetables and economic development and the examination of acculturation and consumption among people of Afro-Caribbean decent.

In addition to the mentioned research projects, several advances have been made towards increasing local production through interventions from the Farm Start Programme, which seeks to assist farmers of ECV with technical and financial assistance. The Vineland Research and Innovation Centre has been doing technical research to understand those ECV that can be produced feasible in Canada (Adekunle et al, 2012).

Findings of previous research by Filson et al. (2011) revealed an important concern in regards to the possibility of market saturation that could be a problem. It has therefore become relevant that a holistic assessment of the market be done, to understand what the crossover potential is for ECV among the non-immigrant population and other cultural groups to further understand the triggers within this demographic that would increase the consumption of ECV. This will facilitate greater planning by all stakeholders, thus moving closer in resolving the underlying problem of high imports of ECV.

In examining of the outlined problem, the exploratory, descriptive and relational research methods were utilised. Exploratory research sought to shed light on a topic that has been minimally researched. Descriptive research sought to examine the population sample to have a clearer understanding of the market demographics for crossover potential of ECV. The relational aspect of the research method sought to quantify the connectivity between the identified variables.
1.1 Research goal

The goal of this research was to examine the position of the Guelph consumers relevant to the crossover effect of ethno-cultural vegetables. The research gives stakeholders a better understanding of the potential market demand that exist for these vegetables through its examination of consumer vegetable purchasing decisions and their perceptions of local vegetables within the specific locale.

1.2 Research objective

In considering the research goal, the following research objectives were carefully examined;

1. Determine the satisfaction level of non-recent immigrants with the quality and variety of vegetables that is now available to them.
2. Determine if the Guelph consumers are sufficiently supplied with, exposed to and knowledgeable about ECV.
3. Identification of factors that influence the demand for ECV by the Guelph consumers.
4. Assess Guelph consumers’ willingness to consume ECV if grown locally.
5. Identify what segment of the population would be most willing to explore and consume ECV.

1.3 About the location of study: Guelph

The research was conducted in the City of Guelph’s university area, as such it is important to provide the reader with some information about the region of study. The city of Guelph is situated within the South-western region of Ontario, Canada. According to Statistic Canada (2014), the city of Guelph has a population of over 122,000 with a land area of 78.86 sq km. The median age of the Guelph population is 37.7. The largest portion of the adult population
in Guelph is either married or in a common law relationships with a child or children in the household.

According to the Statistics Canada (2014) National Household Survey, the immigrant population in Guelph metropolitan area constitutes 19.7% of the total of this population. Table 1.1 below gives Guelph population composition relative to Ontario and Canada as a whole. Non-immigrants are the Canadian born citizens, immigrants are those born outside Canada and non-permanent residents are those who reside in Canada temporarily for the purpose of work or study but are not permanent residents.

Table 1.1 Ethnic diversity of Guelph relative to Ontario and Canada

<table>
<thead>
<tr>
<th>Geographic Name</th>
<th>Non-Immigrants</th>
<th>Immigrants</th>
<th>Non-permanent Residents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Canada</td>
<td>78.3%</td>
<td>20.6%</td>
<td>1.1%</td>
</tr>
<tr>
<td>Ontario</td>
<td>70.4%</td>
<td>28.5%</td>
<td>1.1%</td>
</tr>
<tr>
<td>Guelph</td>
<td>79.7%</td>
<td>19.7%</td>
<td>0.6%</td>
</tr>
</tbody>
</table>

Maps of region of study, Guelph

Below in figure 1.1 are two maps one which locates Guelph relative to the province of Ontario and the other shows the city boundaries independent of other parts of Ontario.
The importance of this research is to provide information in better understanding the ECV market potential in Canada. It will go a step further than previously conducted research and provide information relevant to the current crossover market and means of realising future growth within this market. This information will be beneficial to various stakeholders inclusive of policy makers, producers, retailers, consumers and researcher.

Policy that will facilitate greater local production of ECV may be promulgated form the recommendations of this research. Producers will recognise new business opportunities to increase their earnings through the potential for diversification, this too will be recognised within the retail sector. Availability of greater vegetable choices will allow consumers to have greater exposure to ECV and possibly a healthier diet. Lastly, the research will also be the base for further research, through the gaps that will identified.
1.5 Research limitations and delimitations

1.5.1 Limitations

Limitations are those factors that were outside of the control of the researcher, they include the following:

- The research had limited funds to carry out research activities, as such activities were executed with as minimal cost as was possible.
- Getting students interested in participating in the focus group was a challenge, some of those solicited indicated that they were very busy.
- Published research specific to crossover of ethnic vegetables was limited. As such documents investigating crossover of other sectors were used to clarify and relate in context of ECV.
- Data provided by those participants in the data collection process was assumed to be truthful and honest.
- Cultural biases as a result of being a Jamaican, international student in Guelph and recognising my own personal need for cultural appropriate foods. Using triangulation was a means of addressing this limitation.

1.5.2 Delimitation

The delimitations are those factors that were within the control of the researcher, they are as follows:

- Time constraint was a delimiting factor, the research was executed over a short period, within the confines of the master’s program.
- Location in Guelph was centralised in the city’s University area and Downtown Guelph as these were the areas of greater access and activities.
- The sample size of the focus group included only born Canadians; this was to understand what the real crossover has been, specific to those individuals who have the least cultural baggage.
- The number of participants for the interview was limited to 11 key informants. Combined, both focus group included a total of 13 individuals. It was difficult to get students interested in volunteering their time.
- The questions presented to participants throughout the data collection process was guided by the research goal and objectives.
- Unit of analysis were different for each instrumentation and were selected based on the relationship to ECV and the examined topic.

**1.6 Organisation of the thesis**

Inclusive of this introductory first chapter, it gives the reader among other things, a brief background of the research topic, the research goal and objectives and information about the location being studied. The thesis also contains five other chapters.

Chapter 2 presents the literature review, which is an in-depth analysis of secondary data/published research, relevant to the topic of ECV and crossover. The chapter allows for greater understanding about ECV as it relates to the objectives and is concluded with a conceptual framework developed through the examination of the available literature.

Chapter 3, methodology, gives information relevant to the research design on which the data collection and analysis process were based. It offered information about the tools and techniques used in unearthing the results. The results are presented in Chapter 4, with findings relevant to answering each objective organised based on the data collection methods that were utilised.
Chapter 5 presents the researcher’s interpretation of the findings and explanation of how the different qualitative findings relate to the quantitative findings. The results are discussed in terms of its connection to relevant literatures. Finally the research is completed by the conclusion and recommendation, chapter 6.

1.7 Definition of key terms

- Acculturation – This is a process of human change, where one culture accepts the behaviour and attitudes of usually the dominant culture.

- Crossover – Achieving acceptance within a larger market segment.

- Ethno-cultural vegetables (ECV) – Largely tropical type vegetables and other agricultural produce, which are imported into Canada to meet the demand of ethnic groups.

- Ethnic group – These are groups that share common bonds, which may include some if not all of the noted characteristics; country of birth, religious affiliation, cultures, race, language, etc.

- Freshness – Retention of original properties and is not stale or spoil. It refers to recently reaped with no unnatural method is used for its preservation.

- Intercultural Acceptance – This refers to culture change and acculturation between the different immigrant groups.

- Local production – Agricultural production within the country, that is, Canada

- Mainstream market – The market segment that has the greater number of the population and associated buying power.

- Non-recent immigrants – People born outside Canada, but have been residing within Canada for a significant (10 and over) number of years.
• Quality – Refers to something that is deemed to be very good and have a high degree of excellence, as a result of farmers following due processes and standards.

1.8 Summary

The introductory chapter provides information on which the reader can form a basis of understanding the research. Firstly, the research background is presented, followed by the research goal and objective. Information about the location of study, Guelph, is then provided to allow better understanding of the location being examined relative to Canada and ECV.

The research significance is then presented giving justifications for doing the research. The limitation and delimitation are also presented, outlining some of the challenges that were faced in conducting the research. The thesis organisation also provide readers with a better idea of what to expect in subsequent chapters of the thesis. The chapter closes with a list of key terms that are used throughout the thesis.
Chapter 2
Literature Review

2.0 Introduction

In order to understand the crossover effect and the potential for mainstreaming ethno-cultural vegetables (ECV) in Guelph and Canada in general, several elements relevant to the research objectives are carefully examined in this section. Firstly, the basis of the research is established, by putting in context the term “crossover”. Secondly, the satisfaction of consumers specific to vegetable consumption is explored based on consumers’ need and what is available. Thirdly, the consumers’ knowledge of ECV is explored with strategies identified that have been used to increase this knowledge. Several factors that are important considerations for the growth of the ECV subsector are also presented in the fourth section. The fifth section then explores the Canadian vegetable eating habits and market demographics to better understand what section of the mainstream population may be targeted for the crossover of ECV. Finally, a conceptual framework showing the relevance of each of the areas mentioned is presented.

2.1 Crossover effect contextualised in retrospect

Upon examination of the literature the term “crossover” is one that is used in various areas of study inclusive of; genetics and biology, computing and electronics, automotive and more significantly in the music and creative industries. The Oxford Dictionary (2014) defines crossover to be the process of achieving success in a different field or style, especially in popular music. Harper (1989) in his examination of pop music and the crossover strategies that were employed by the Motown Records a “black” record producing company, synonymous with
mainstream careers of several such singers inclusive of Stevie Wonder, Diana Ross and Michael Jackson, presented television as a great instruments that allowed for the realisation of crossover. Another strategy of Motown prior to television was to first create a footing by establishing a single artist, Ross, which led to the crossover of several other black artist into the mainstream market.

In contextualising the term for this research, the achievement of crossover successes will relate to the field of ethnic foods and more so ethno-cultural vegetables (ECV). Like music, the same thing has also been happening with foods. Kelly and Trebilcock (2000) people of colour who were previously largely prevented from immigrating to Canada, now make up the majority of recent immigrants. Along with their presence, they are bringing their preferred foods to the cultural mainstream. The extent of this crossover of ECV to Guelph, Ontario is the focus of this thesis.

ECV, according to Vineland Research and Innovation Centre (2012) “are vegetables not traditionally grown in Canada nor were they introduced by European settlers” (p.1.) instead they are produce primarily of tropical origin and mostly imported into Canada. This thesis investigates the extent to which those immigrants’ preferred ECV are now penetrating the surrounding cultures that were predominantly of European descent.

According the Denker (2007) who documented the history of ethnic foods, the answer to a question relevant to whether or not there is potential for the crossover of ethnic vegetables in Canada, would be a resounding yes. The story of Broccoli which Denker (2007) gives, began with his own question. “How many of us realize that broccoli of southern Italian lineage, was once regarded as a strange unappetizing vegetable or that its popularity was the result of astute marketing campaign..?” (p.1).
Denker (2007) traced the history of broccoli, introduced to the USA from Italy and
gained popularity through branding, a brand synonymous with quality and superior farming
practices. Supermarkets clerks were trained by distributors on how to handle the vegetables.
Through the public media the benefits associated with the consumption of broccoli were
explained, also demonstrations done on how the vegetable was prepared.

Today, broccoli is largely consumed not just in America but is also found in
supermarkets in Canada, the Caribbean, Africa and all around the world. Broccoli has become
mainstream and outselling other earlier classified mainstream vegetables such as carrots and
potatoes. This argument is supported by Agri Food Canada (2010) Comparative Consumer
Profile of Canada and the US, which suggests that between 2001 and 2008 consumption of
carrots and potatoes declined by 21.3% and 2.5% respectively in Canada and by 9.3% and 16.7%
in the US. The report noted however that consumption of commodities one of which is broccoli
was steadily growing. In Canada the growth of broccoli over the noted period was 4% and in the
US for the same period was recorded at 16.4% growth.

2.1.1 Evolution of Canada’s immigration

According to Kelly and Trebilcock (2000) Canada’s immigration was once open for
migrants who were expected to contribute to the economy, largely through their offerings of
cheap labour. They pointed to the fact that the immigration act of 1906 and 1910 were amended,
resulting in Canada becoming more selective in the way immigrants were admitted.
The immigration policy for Canada has continuously evolved since then but what has remained
constant is the economic foundation on which it was originally grounded. Kelly and Trebilcock
(2000) found that “immigrants who entered Canada from the 1966 onward came from many
countries and possessed more diverse cultural background than earlier immigrants” (p.99). The
literature suggests that in the early 1900’s and before that period, most immigrants to Canada came from European countries. However, today this trend is reversed, with the largest percentage of immigrants to Canada arriving from regions such as Asia, Caribbean and Africa.

Additionally, The Immigration and Ethno-cultural Diversity in Canada, a report published by Statistic Canada, National Household Survey (2011) notes that between 2006 and 2011, 145,700 (12.5% of total) immigrants arrived from Africa, which was a 10.3% increase from the previous five year period. This represented a significant increase of immigrants arriving from Africa to Canada prior to 1970’s, which at the time accounted for only 1.9% of the total immigrant population. This growth was also true for the Caribbean, Central and South America and other visible minority groupings such as Asia which it noted to be largest source of immigrant to Canada in 2011.

Figure 2. 1 *Regions of birth of immigrants by period of immigration, Canada 2011*  
Source: Statistics Canada (2013)
2.1.2 Mainstream acculturation through migration

Aycan and Kanungo (1998), in introducing his examination of the acculturation impact on immigrants, stated that:

The multicultural character of the Canada has emerged as a result of the society hosting immigrants belonging to various ethno-cultural groups. When the immigrants enter Canada, they bring with them a cultural baggage that contains a unique set of values, attitudes, socialization beliefs and behavioural norms required within the country of origin (p.451).

A part of this “cultural baggage” that immigrants take with them is their preference in foods. Kittler, Sucher and Nahikian-Nelms (2011) suggest that cultural identity and the creation of it, is a symbolic function of food and as such holds special values to individual and allows for physiological satisfaction through the familiarity which the food brings.

With the inclusion of such cultural baggage by immigrants there is a process of mutual change. Berry 1997 and Bourhis et al. 1997 (as cited in Berry 2001, p.616) in examining physiological immigration, noted that despite the focus given by academia about acculturation as being the change that occurs with the less dominant party within a particular space or scenario, this is changing. There is now much attention based on emerging trends examining not only the less dominant but both parties in the process of the change. This suggests that acculturation is not a one sided change that affects only immigrant but is change that is possible within the mainstream society. Acculturation is therefore also possible within the Canadian born population, through interaction with immigrants.

The ECV that will be examined are those more widely known and consumed by the visible minorities within Canada and have therefore been somewhat introduced to the marketplace. Kittler, et al. (2008) referred to the Employment Equity Act, which defined visible minorities as “persons, other than Aboriginal peoples, who are non-Caucasian in race or non-
white in colour” (p.19). Listed also were some countries and its immigrants, considered to be the visible minorities within Canada, this included Chinese, South Asians, and Blacks, Asians, Filipinos, Latin Americans, Arabs and Japanese. With one in five now Canadian born (Statistics Canada, 2011) these visible minorities are increasing and trending towards becoming the population’s majority, the use therefore of the term is increasingly losing its relevance. Ethnic vegetables associated with the “visible minorities”, include but are not limited to foods such as bok choy, callaloo, eggplant (not Italian), okra, peppers, bitter melon, breadfruit, cassava and ackee.

2.1.3 Migration and crossover in the USA

While Canada is the focus of this research, the United States of America (USA) is examined briefly because of its similar migration history. Ager and Bruckner (2010) mention the 1800’s as the period of mass migration, and note that there was an immigration of about 55 million Europeans of which three-fifths went to the US. Hammar and Tamas 1997 (as cited by D’Rozario & Chodhury, 2000, p.50) in a research that examined the effect of immigration on taste and preference, endorsed the view that global migration in the 20th century can be considered one of the biggest factor that has affected the population size of receiving countries. Like Canada the US had originally received most of its immigrants from European countries.

According to Blisard, Lin, Cromartie and Ballenger (2002, p.4), the tide has also now changed with greater ethnic diversity, this current “high tide” began in the 1960’s when the immigration policy of the US was amended and was opened up not only to those Europeans immigrants but to those we have previously been defined as the visible minority; the non-European. Blisard, et al. (2002) also notes that:

Immigrants from Asia, Africa and Latin America are causing widespread increases in food choices offered in American supermarkets and restaurants. The variety of foods in
America’s market place is likely to continue to grow as the US ethnic population grows from 28% of the population in 2000 to a projected 36% in 2020 (p.9).

Dirazoro & Choudhury (2002, p.56), who examined the research of Dyson 2000 and Roth 2000, points to the fact that America has not always been receptive to what some call ‘alien foods’ and in the late 1800’s and early 1900’s they rejected foods such as pastrami, pieroji, borshsct and goulash. They sought instead to encourage immigrants to adjust their dietary practices and eat American foods.

Based on the literature that has been examined however it is difficult to define what can be considered authentic American food source, because most of what we know today as American was derived from the Europeans. Gabaccia (2009), notes that “it would seem that corn, bean, squash inclusive of pumpkin was at the time the only seemingly truly American vegetables, simple because Europeans did not know these foods when they arrived in North America” (p.14). Gabaccia referred to these as “three sisters” as they formed the basis of American staples.

The Atlas Media Corporation 1999 (cited by D’Rozario & Choudhury, 2002, p.56. para 1-2) outlined some of the foods that have become mainstream in the US in the 19th century, they include pizza from Italy, hamburger and hot dog from Germany, fried chicken from Africa and others. Today the visible minorities in North American continue to introduce their foods that are increasingly becoming mainstream.

In New Survey 1995 (cited by Roseman, 2006) a survey, carried out to understand the reason behind why mainstream consumers choose to eat ethnic food while dining out. It was found that the people who choose ethnic foods were largely alternative seekers, individuals who enjoy exploring new things. These were usually younger and more adventurous persons, who
also factored the economics of their purchases when compared to others in the population. It was also noted that food with Italian, Mexican, Cantonese and Chinese heritage were the most popular and a part of the American food culture. D’Rozario & Choudhury (2002 p.56, para 3) further stated that during the late 20th century, immigrants to the US introduced new foods also now visible as mainstream, such as salsa, pepper sauces, tortillas, coconut milk, fruits and vegetables inclusive of tomatillas, bok choy, and cactus leaves.

2.1.4 Stories of crossover, success and failure

Crossover success - Salsa

In an article examining the quality and taste of produce of Alaska, the flavour of its locally produced peppers were being compared with that of Tennessee. It was noted by Lewis (2005) that salsa, a Mexican sauce, outsold the popular ketchup in the US. Wolfe and Ferland (2003) in their examination of the salsa market noted that in 1998, 63% of US households were purchasing salsa which was at that time accredited largely to the Hispanic immigrants. Additional research has shown that Hispanics are no longer responsible for its continuous growth, as salsa is now mainstream and is being greatly consumed also by the Non-Hispanic populous.

Factors suggested by Wolfe and Ferland (2003) that impact the continuous growth of salsa includes:

1. Increased demand for flavourful ethnic and exotic flavours, possible accredited to the identified willingness of consumers to try new foods;
2. Consumers’ preference shifting towards fresh products;
3. Consumers are trying to spice up food with flavour, due to the loss of fats in foods;
4. Dishes with salsa are said to be of greater nutritional value; and
5. More chips as snack are being consumed and salsa is a complementary dip for chips.

Unlike salsa which is a success story, not all crossover attempts achieve mainstream popularity. William 1995 (cited by Grier, Brumbaugh & Thornton, 2006, p.37) notes that the ethnic embeddedness is a valuable way of connecting to ethnic markets. However Grier et al. (2006) also point out that the ethnic specific cues promoted through marketing strategies may restrain the mainstream acceptability of that product. This is one of several reasons for failure of some foods crossover efforts.

**Crossover failure – Caribbean cuisine**

While several researchers have discussed the crossover of foods from countries such as China and India, not all ethnic foods and cuisines have matured to that level. One such product according to Cook & Harrison (2003) is that of the Caribbean cuisine. It is noted that Caribbean cuisine was expected to be the next mainstream cuisine behind Chinese, Mexican and Indian foods in the UK. This was anticipated as the Caribbean born immigrants in the 1990’s accounted for the third largest ethnic minority in Britain.

Caribbean food sales according to Cook & Harrison (2003) are said to have doubled between 1993 and 1995, from 10.1 million to 20.4 million pound respectively. The growth was however short-lived as between 1995 and 1997 there was only an additional 5% growth, with gradual declines in the years after. Mintel 1999 and Annon 1999 (cited by Cook & Harrison 2003) pointed to the following causes of the failure of the crossover of the potential filled Caribbean cuisine:

1. The rigorous laid back attitude of the group; they were not aggressive business people;
2. The average consumer was not adequately exposed about the foods;
3. The sector did not have the necessary takeout spots that were common in Chinese and other rivals;

4. Limited range of seasonal and convenient foods in a fast paced high demand consumer market that wanted quick and tasty food options;

5. The inability of Caribbean manufacturers to afford and compete for shelve space and in store tasting, advertising and other necessary promotional activities.

The specific purpose of this chapter is to examine the position of the Guelph consumers relevant to the crossover effect of ethno-cultural vegetables. The literature review will be further guided by the research objectives, which seek to answer the following:

1. Canadians satisfaction with available vegetables?

2. Consumers’ exposure to and knowledge about ECV?

3. What factors influence consumers’ demand for ECV and other similar foods?

4. How can we assess Guelph consumers’ willingness to consume ECV if grown locally?

5. Which market segment is most willing to explore and consume newly introduced foods?

2.2 Canadian satisfaction with available vegetables

In understanding the satisfaction level of Canadian and, in particular, the Guelph consumers, properly measuring satisfaction is important. According to Simon 1974 (cited by Johnson & Fornell, 1991, p.270) any theoretical construct, including satisfaction, can be operationalised by choosing a measurable proxy for it.

Johnson, Gustafsson, Andreassen, Lervikc & Chaa (2000) in a research aimed at examining the evolution of consumer satisfaction index, recognized the first index to be the Swedish customer barometer that was established in 1989 and this was followed in 1994 by the
American customer satisfaction index. A number of other indices measuring satisfaction have been developed since then. In examining the argument of Johnson et al. (2000) in considering all the models, a key variable among them is that of quality.

Quality is explained by Rodriguez, Lupin and Lacaz (2006), by looking at the intrinsic and extrinsic elements. Attributes such as taste, nutritional value, safety, colour, etc. are intrinsic qualities. Extrinsic elements include certification, quality standard seals, labelling and package, advertisements, store outlet availability and price.

In examining consumers’ satisfaction in Canada for available vegetable both the intrinsic and extrinsic qualities which have previously been discussed will be explored. In understanding these elements, we can first assess what consumers want and then seek to understand whether or not they are currently getting the quality they require. We can now ask the question: What is being required by the Canadian market? Campbell, Lesschaeve, Bowen, Onufrey and Moskowitz (2010) in looking at the drivers of consumer perceptions in forming baseline information for producing greater amount of local organic produce in Canada, the intrinsic and extrinsic factors are suggested to be important. Campbell et al. (2010, p.1480) point to research by Moskowitz and Krieger 1995 which states that flavour, appearance and texture are characteristics widely used by consumers to determine quality and what to buy. Noted also, was the use of brand recognition, as just initial appearance alone sometimes may not always meet the consumers’ expectations. Taste is difficult to measure at the point of purchase. This is because one has to buy and then taste, and so in such instance consumers purchase with quality expectation for optimum taste and satisfaction. Researchers such as Grunert, (2005) as well as Rodriguez et al. (2006) believe that consumers purchase with an expectation and where this is satisfied, consumer loyalty is further built and vice versa.
Every consumer defines quality in a different way as his/her demand is made up of elements specific to them. Campbell et al. (2010), as a means of measuring consumer extrinsic quality, noted some extrinsic variables as key determinants for consumer purchasing actions and willingness to pay more for organic and locally produce fruits and vegetables based on branding and labelling. “External attributes included type of product, perceived intrinsic benefits, information signals, availability, occasion, and emotional responses” (p.1480). We see that there is a merger of both intrinsic and extrinsic with Campbell’s inclusion of perceived intrinsic benefits in the examination of extrinsic qualities. What is important to understand is that the variables that are used to measure satisfaction are usually of both intrinsic and extrinsic qualities, and consumers will consider a mix of such variables in defining personal quality requirements.

2.2.1 Vegetables availability (Canada and Ontario)

Canada’s vegetable sales in 2013 rose by 3.5% to $868 million, when compared to 2012 sales of $838 million. This increase however was not directly related to growth of vegetable sales in Ontario as the province was not named among those of increased vegetable sales (Statistics Canada, The Daily, 2014). In examining Statistics Canada (2013) vegetable production information, seen in table 2.1 below, it is interesting to note that what is provided are statistics for only mainstream vegetables and there is no account for ethnic vegetables that are locally produced. This in some respect depicts the insignificant level of local ECV production in Canada, despite the growing ethnic population. Canadians in general, are also noted to be eating fewer vegetables.

Canada’s ethnic population is expected to increase into 2030, along with a continuous growing demand for ECV (Perkin & Walker, 2011). The production information seen in table 2.1, is listed in alphabetical order beginning with asparagus and beans and ending with tomatoes.
and watermelon. All these are mainstream vegetables, locally produced and classified as commercial vegetables, no locally produced ethnic vegetables have yet realised the necessary threshold to be classified as commercial.

Table 2.1 Canada and Ontario 2011 commercial vegetable production listing

<table>
<thead>
<tr>
<th>Commercial Commodity</th>
<th>Canada Hectares Planted</th>
<th>Canada Hectares Harvested</th>
<th>Canada Farmgate Value (In $000)</th>
<th>Ontario Hectares Planted</th>
<th>Ontario Hectares Harvested</th>
<th>Ontario Farmgate Value (In $000)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asparagus</td>
<td>1,742</td>
<td>1,559</td>
<td>22,392</td>
<td>1,247</td>
<td>1,105</td>
<td>17,443</td>
</tr>
<tr>
<td>Beans</td>
<td>7,357</td>
<td>6,563</td>
<td>26,823</td>
<td>3,644</td>
<td>3,375</td>
<td>12,017</td>
</tr>
<tr>
<td>Beets</td>
<td>1,368</td>
<td>1,314</td>
<td>13,450</td>
<td>478</td>
<td>455</td>
<td>2,763</td>
</tr>
<tr>
<td>Broccoli</td>
<td>3,995</td>
<td>3,650</td>
<td>32,621</td>
<td>1,700</td>
<td>1,451</td>
<td>13,047</td>
</tr>
<tr>
<td>Brussels sprouts</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cabbage</td>
<td>5,549</td>
<td>5,164</td>
<td>60,046</td>
<td>2,490</td>
<td>2,295</td>
<td>25,803</td>
</tr>
<tr>
<td>Carrots</td>
<td>8,723</td>
<td>8,277</td>
<td>95,260</td>
<td>3,664</td>
<td>3,634</td>
<td>37,700</td>
</tr>
<tr>
<td>Cauliflower</td>
<td>1,726</td>
<td>1,534</td>
<td>21,217</td>
<td>590</td>
<td>501</td>
<td>5,950</td>
</tr>
<tr>
<td>Celery</td>
<td>750</td>
<td>687</td>
<td>12,369</td>
<td>204</td>
<td>181</td>
<td>3,191</td>
</tr>
<tr>
<td>Corn</td>
<td>19,042</td>
<td>17,883</td>
<td>60,206</td>
<td>8,973</td>
<td>8,794</td>
<td>29,411</td>
</tr>
<tr>
<td>Cucumbers</td>
<td>2,000</td>
<td>1,787</td>
<td>20,661</td>
<td>1,196</td>
<td>1,017</td>
<td>12,149</td>
</tr>
<tr>
<td>Garlic</td>
<td>323</td>
<td>301</td>
<td>5,933</td>
<td>241</td>
<td>240</td>
<td>4,388</td>
</tr>
<tr>
<td>Leeks</td>
<td>329</td>
<td>318</td>
<td>7,953</td>
<td>67</td>
<td>66</td>
<td>1,603</td>
</tr>
<tr>
<td>Lettuce</td>
<td>4,035</td>
<td>3,413</td>
<td>48,408</td>
<td>238</td>
<td>203</td>
<td>3,349</td>
</tr>
<tr>
<td>Dry onions</td>
<td>5,344</td>
<td>5,074</td>
<td>65,234</td>
<td>2,450</td>
<td>2,354</td>
<td>28,493</td>
</tr>
<tr>
<td>Other melons</td>
<td>473</td>
<td>461</td>
<td>6,250</td>
<td>241</td>
<td>238</td>
<td>3,849</td>
</tr>
<tr>
<td>Parsley</td>
<td>146</td>
<td>129</td>
<td>2,820</td>
<td>74</td>
<td>61</td>
<td>1,441</td>
</tr>
<tr>
<td>Parsnips</td>
<td>351</td>
<td>338</td>
<td>5,966</td>
<td>118</td>
<td>108</td>
<td>1,306</td>
</tr>
<tr>
<td>Peas</td>
<td>9,836</td>
<td>9,487</td>
<td>14,930</td>
<td>5,202</td>
<td>5,107</td>
<td>8,452</td>
</tr>
<tr>
<td>Peppers</td>
<td>1,931</td>
<td>1,875</td>
<td>33,433</td>
<td>1,284</td>
<td>1,253</td>
<td>19,011</td>
</tr>
<tr>
<td>Pumpkins</td>
<td>2,959</td>
<td>2,743</td>
<td>16,652</td>
<td>1,558</td>
<td>1,500</td>
<td>7,380</td>
</tr>
<tr>
<td>Radishes</td>
<td>976</td>
<td>826</td>
<td>10,739</td>
<td>276</td>
<td>201</td>
<td>2,553</td>
</tr>
<tr>
<td>Rhubarb</td>
<td>156</td>
<td>134</td>
<td>2,199</td>
<td>36</td>
<td>24</td>
<td>406</td>
</tr>
<tr>
<td>Rutabagas and turnips</td>
<td>1,766</td>
<td>1,705</td>
<td>22,024</td>
<td>698</td>
<td>690</td>
<td>7,583</td>
</tr>
<tr>
<td>Shallots</td>
<td>691</td>
<td>619</td>
<td>15,907</td>
<td>152</td>
<td>125</td>
<td>3,089</td>
</tr>
<tr>
<td>Spinach</td>
<td>800</td>
<td>680</td>
<td>6,446</td>
<td>454</td>
<td>437</td>
<td>3,182</td>
</tr>
<tr>
<td>Squash and zucchinis</td>
<td>2,537</td>
<td>2,371</td>
<td>26,276</td>
<td>1,349</td>
<td>1,275</td>
<td>12,909</td>
</tr>
<tr>
<td>Tomatoes</td>
<td>6,797</td>
<td>6,643</td>
<td>79,792</td>
<td>6,222</td>
<td>6,141</td>
<td>70,100</td>
</tr>
<tr>
<td>Watermelon</td>
<td>569</td>
<td>563</td>
<td>7,409</td>
<td>514</td>
<td>512</td>
<td>6,859</td>
</tr>
</tbody>
</table>

Source: Statistics Canada (2012)
In addition to what is locally produced, Canada imports a large percentage of what is consumed, primarily due to its climatic conditions. Between 1990 to 2010 importation data indicate that the top exporting country of vegetables to Canada has been the USA due to its proximity.

Agri Food Canada, (2012) cites information from Statistics Canada, which indicates that of the provinces, Ontario is the largest importer of fruits and vegetables, importing 49% of Canada’s total fruit and vegetable imports fruits and vegetables. Additionally, between 2006 and 2010 the country had a net import of vegetables. See details outlined in (figure 2.2) graph below.

Figure 2. 2  Comparison of Canada’s import and export of fruit and vegetables between 2006 and 2010
Source: Adopted from Agri Food Canada, A snapshot of the Canadian vegetable industry 2010 (2012, p.15)

The trend has continued into 2013, according to the Office of the US Trade Representative, the USA as indicated by Statistic Canada, is the biggest exporter of vegetables to Canada. It was noted that the USA agriculture export to Canada totalled $20.6 billion in 2012. This it noted is anticipated to grow for 2014 United States Trade Representative [USTR], (2013).

2.2.2 Exploring satisfaction standards with availability

Based on the projections of the (USTR 2013; Statistics Canada 2011), it can be stated that consumer demand for variety and availability, has to be satisfied by the importation of
vegetables. A third variable, emotional responses which (Campbell et al. 2010) relates to supporting local production/agriculture, is not being adequately satisfied as most fruit and vegetable are imported. Consumer’s choice therefore of supporting the local economy, based on the trade imbalance of fruits and vegetable is limited.

The expectation of intrinsic qualities by consumers, according to Campbell et al. (2010) is a means of measuring quality and by extension satisfaction. Also food safety has emerged as one the most important intrinsic quality expected by consumers. Hobbs et al. 2005 (cited by Verbeke, 2005, p.360) in contrast found that while Canadians were interested in traceability of foods, branding was far more important. Satisfaction is expected when there is loyalty to a brand.

Through branding and labelling consumers are better informed of what they are buying. According to Campbell et al. (2010) provincial logos such as Food Land Ontario, introduced by OMAFRA in 1997 and Canada Organic introduced in 2010, provides consumers with branding and the reassurance that the Ontario produced foods follow the relevant safety standards accepted by Canada.

2.2.3 The consumption level

Many studies have suggested that a diet rich in fruits and vegetables is the best for a healthy life. In 2012 Canada’s fruit and vegetable consumption was stated to be 40.6 % among Canadian ages 12 and older, reflecting a decrease from the 2009 consumption peak of 45.6% with a continuous slump between 2010 and 2011. It is also important to note that Ontario with consumption of 39.4 % in 2012 was presented as one of the provinces, where the population was consuming less than the national average of 40.6 percent (Statistic Canada, 2013).
2.2.4 Canada markets trend

In examining the market trends, four areas of both intrinsic and extrinsic qualities, supported by both the consumers and sellers, are presented. Consumers in relation to their demand and the sellers, in attempting to satisfy these demands. The trends now mentioned are not exhaustive of all food trends in Canada but are some key ones relevant to the examination of mainstream vegetable consumers, they include – health, organic, convenience and ethnic varieties.

**Health and nutrition trend.** According to OMAFRA (n.d) the health and nutrition trends are growing requirements of consumers. It is suggested that North Americans of all ages are seeking to mitigate against the plague of obesity and its related chronic illnesses such as hypertension, heart diseases and diabetes, as such the more educated population are eating more vegetables and fewer junk foods laced with salt, sugar and fats (Moss, 2013).

**Organic trend.** Organic products are those grown without the use of synthetic chemicals, and are attractive to many consumers due to both perceived and actual qualities. On average organic foods are more expensive than conventional products. Those consumers who buy
organic are usually willing to pay more for the perceived health and environmental benefits. The larger percentage of organic fresh food are imported to Canada from such countries as the US, Mexico and Dominica Republic (Agri Food, Canada, 2010).

In a research conducted by the Nielson Company for the Canada Organic Trade Association in the years 2006, 2008 and 2012, over 25 retail outlets were examined. The examination of these retail outlets, inclusive of big names such as Lablow, Sobby, Safeway and Walmart, revealed that while organic vegetables presently do not outsell conventional vegetables the sales are trending positively (Canada Organic Trade Association, 2013).

**Convenience trend.** Having begun in the western world, consumers’ demand for convenience food is now on the rise around the world (Wales, 2009). In a publication by OMAFRA (n.d) examining trends, convenience is slated to be “king”. The article suggests that ready meals are trending big. Convenience foods such as microwaveable meals and ready mixed salads are what consumers are increasingly demanding. The success of vegetables be it fresh, local, tasty, healthy, ethnic, is reliant on whether or not it is delivered with convenience. Figure 2.4 below, developed by Dr David Kohl, an expert in agricultural economics, presents how the convenience trend has been moving over the decades.

<table>
<thead>
<tr>
<th>Preparation Time</th>
<th>2.5 hr</th>
<th>1 hr</th>
<th>30 min</th>
<th>15 min</th>
<th>8 min</th>
<th>????</th>
</tr>
</thead>
<tbody>
<tr>
<td>Decade</td>
<td>1930’s</td>
<td>1950’s</td>
<td>1970’s</td>
<td>1990’s</td>
<td>2008</td>
<td>2020’s</td>
</tr>
<tr>
<td>Meal Prep. Influences</td>
<td>Traditional Cooking Methods</td>
<td>Modern Appliances</td>
<td>Prepared Food, TV Dinner</td>
<td>Frozen Food Microwave</td>
<td>Takeout meals &amp; Prep Meals</td>
<td>Meals in a pill</td>
</tr>
</tbody>
</table>

Figure 2. 4 Dr. David Kohl. *Going from good to great in value added: Trend of convenience 1950’s to the future, shows the trend to convenience in meal preparation time*

Source: Adopted from OMAFRA, exploring value added opportunities pre-module (n.d, p.6)

**ECV varieties trends.** Dr. Michael Brownbridge from the Research and Innovation Centre, states in the ECV Ontario (2012) short film, that “We are faced with a changing consumer population that likes different foods. We all like foods we grew up on, the new
Canadian wants different foods than what was consumed extensively 20 years ago. In order to supply this new market growers need to change”.

USDA Foreign Agricultural Service, 2003 (cited by Faye, 2004) notes that “consumers are looking for ethnic diversity in produce and are expecting more of these foods out of season. In general terms, the most common foods are still potatoes, carrots, apples, and oranges, but increasingly consumers are buying avocados, mangoes, bok choy, etc” (p.15). Adekunle, Filson and Sethuratnam (2010), (cited by Gunst, Jaques, Jurjens, & McDowell, 2010, p.1) stated that the demand for such fresh ethnic foods and produce such as the popular bok choy is increasing annually.

According to Filson, Adekunle & Sethuratnam (2011) in making their recommendations in a research project that explored the demand for culturally appropriate vegetables in a Farm Start publication, it was noted that:

There are significant opportunities to create markets for producing and distributing ethno-cultural vegetables in the GTA region. Increasing the availability of ethno-cultural vegetables in Ontario will improve the health of new Canadians and increase opportunity for Ontario farmers. Policy and resources should be put in place that will encourage farmers to participate in this growing market (p.11).
Distribution trend

Figure 2.5 shows the distribution channel utilised by Canada and the Ontario province, between 2009 and 2012. Examination of both trends reveals that domestic wholesalers are the leading means of vegetable distribution. Thus it is important that ECV producers or marketers properly align themselves to understand the dynamics of this very significant distribution channel.

2.3. Consumer’s exposure to and knowledge about ECV

Awareness and knowledge development are key variables in the process of acculturation of all groups of society and are also key points of exploration for this section. Knowledge through the sharing of culture is something that is supported by the Multicultural Policy of Canada of 1985, holistic culture share is something that is strongly promoted.
Section 3 Clause 1(a) of the Act declares Canada to:

recognize and promote the understanding that multiculturalism reflects the cultural and racial diversity of Canadian society and acknowledges the freedom of all members of Canadian society to preserve, enhance and share their cultural heritage  (Department of Justice, 2014, p.3).

Knowledge, awareness and exposure relevant to ethnic cultures and specifically ethnic foods among mainstream markets, is a natural process and is one process that is supported here from a policy perspective.

It is safe to say that Canadians are, to some extent, aware of some ethnic vegetables around them. Agri Food Canada 2009 is (cited by Perkin & Walker, 2011) noting that “the impact of increasingly diverse Canadian mosaic means consumers are becoming more adventurous by venturing into using a variety of herbs and spices, sauces, fresh produce and products at home” (p.4). In assessing Canada consumption and taste preferences as they relate to vegetables it is also again noted that over the last 20 years Canadians have added more exotic vegetables to their diets, particularly garlic, asparagus, cucumber, cassava, eggplant, kohlrabi and okra. This is a reflection of Canada’s increased ethnic diversity (Agri Food Canada 2010). The natural process of acculturation through the introduction of new foods to mainstream Canadian market place is therefore visible.

2.3.1 Evolution of ethnic vegetables in mainstream markets

Spinach, cucumber, parsley and several other popular vegetables all share a similar history. They were introduced to North America by immigrants at some point in the past. These like broccoli are common in the mainstream and consumers’ baskets today. The crossover story of broccoli as previously illustrated by Denker (2007), outlined some strategies that were utilised in the mainstreaming of broccoli to the American consumers at that time.
The main strategies identified as being employed in the story of broccoli include branding, training and handling of the vegetable, promotion with demonstration and explanation of its benefits to the targeted consumers. Marketing strategies, were pointed to by Adekunle et.al, (2011) as key activities to increasing the consumption of ECVs in Canada. In their research conducted amongst Afro-Caribbean the finding was reported as follows:

The respondents also asserted that publicity would help to create demand for the availability of their preferred vegetables and to communicate the benefits of consuming these ethno-cultural foods. The role of advertising and marketing of ethno-cultural foods was deemed relevant by 62% of our respondents (p.306).

Some of the fastest growing ECV in the Canadian market are the Chinese vegetables, such as bok choy. Producers of these ECV have progressed in their commercial production which is grown not only for local consumption but is also exported to the US. Chinese have been producing their own ethnic vegetables for well over 40 years, making this a popular ethnic vegetable in Canada and around the world (ECVOntario, 2011; Agri Food Canada, 2012). For knowledge and awareness of ethnic vegetables to flourish there have to be marketing activities specific to providing greater level of information to the consumers within the mainstream market, but this will take some time as seen with the growth of Chinese vegetables.

2.3.2 Strategies employed to increase awareness

There are several strategies that can be employed to cause an increase of vegetable consumption in general among the Canadian population, and as such are employable for ECV crossover. The Heart and Stroke Foundation suggests an improvement of consumers’ opportunities for accessing these foods for consumption whilst simultaneously providing a better understanding of the importance of healthy eating behaviours and offering to consumer information and education of the benefits associated with greater vegetable intake are important
strategies. Noted as a key strategy is providing Canadians with the necessary skills that are needed to prepare meals, since many individuals do not know how to prepare meals from scratch (Heart & Stroke Foundation of Canada, 2013).

Nawaratne (2012), while studying the ECV value chains, examined some marketing strategies that were being employed both in Guelph and other cities in Ontario. Relating to ECV marketing in the retail sector, Nawaratne found that while mainstream retailers’ provision of ECV have grown over the last two decades and while they are interested in understanding the demand trends for such ECV in order to have adequate supply in their stores, there is still room for further growth.

Kajumba’s (2012) assessment of Guelph mainstream supermarket, suggested that while these supermarkets offered a greater variety of vegetables including both mainstream and ethnic vegetables, the ethnic stores had much more ECV to choose from. However, the freshness and general quality of the vegetables in ethnic stores were inferior to those in the mainstream supermarket. In this respect, however, Chinese stores and supermarkets (for example, Taskgo’s in Guelph and Toronto’s T and T, now owned by Loblaw) had amongst the highest quality ECV. These smaller retailer, specialty/ethnic stores have had strong competition from mainstream supermarkets and have therefore employed strategies to remain relevant. The following strategies presented by Kajumba (2012) were suggested by storekeepers as being useful:

1) **Variety** - stocking not only foods from a particular ethnic group but from other ethnic groups and the mainstream. The example of the Chinese stores carrying many vegetables, invites consumers to have a choice and to be able get everything they would need at one stop.
2) **Inviting layout of product** – it is suggested that due to the experience garnered by the Chinese from working in mainstream retail stores, they have included in their businesses the knowledge of how to operate in a comparable manner to the supermarkets.

3) **Customer service** – establishing relationships with customers is key to ethnic stores, this encourages continuous patronage.

4) **Quality** – this was also noted by retailers as an important element of keeping and inviting new customers, all in a bid to increase sales.

5) **Pricing** – this is said to be usually lower than mainstream retailers, and is used as a competitive strategy.

In addition to the above strategies suggested both by the Heart Foundation and retailers of ethnic vegetables, we now look at those strategies identified from the crossover of broccoli and examine to what extent these have been achieved from an ECV perspective in Canada.

**Branding.** According to Perkin & Walker (2011) trade and promotion for ECV will be difficult to execute since produce and specifically ECV are not usually branded. Produce labelling is however an important element of retail marketing of food, this is particularly so with food scares/poisoning happening all over the world. Kajumba (2012) suggests that product labelling is important, as it presents to consumers a level of assurance of quality and safety. The practice of labelling is happening minimally in ethnic stores when compared to mainstream stores which carry limited ECV.

**Training, handling packaging.** According to the findings of Nawarante (2012) it is stated that a challenge associated with handling of ECV does exist and there is a lack of experience among staff in dealing with the vegetables, whether they are imported or locally produced. Additionally, packaging while noted to be inadequate is also identified to be an
important part of logistics for store retailers. Consumers are willing to pay more based on packaging and it also allows for greater shelf life of the produce. There are inefficiencies in the system as it relates to this area that need strengthening.

**Promotion, benefits explained & demonstration.** In Perkins and Walker (2011), twenty-six percent of people surveyed claim their interest in ethnic food grew after being exposed to it through various media, such as telephone and newspaper. This suggests that it would be beneficial for producers to expand opportunities for ethnic vegetables beyond the ethnic stores, in television, printed and other media.

### 2.4. Factors that influence consumers demand for ECV and other similar exotic foods

In the previous section knowledge and awareness of mainstream consumers to ECV were discussed. Knowledge is an important factor for the achievement of crossover as discussed. Although consumers in the mainstream market are aware of some ECV, there are several other factors that influence consumers’ willingness to buy ECV that should be considered by suppliers and producers.

According to Adekunle, Filson, Sethuratnam (2013) quality, traceable production, versatility and language were the four factors identified that were considered to influence consumers’ decisions to purchase ECV, based on a study which examined the Chinese Canadian population in the GTA. Sixty percent of the participants in the study, though not born in Canada had spent over a decade being residents of Canada, thus had been acculturated to some extent by the Canadian mainstream. We can thus infer from this finding, that the mainstream consumers would also be influenced by similar factors, relevant to purchasing ECV.
Factor 1: Quality: Health & nutritional benefits

Consumers are increasingly interested in the health and nutritional benefits of the foods that they are consuming and have started to examine the disease prevention and health enhancing components contained in many foods. Additionally, it is continuously identified through various scientific research that the health benefits of fruits and vegetables are real (Agri Food Canada, 2013). Adekunle et al. (2013) suggest that communicating with consumers about the benefits of the ECV relevant to their nutritional values and where they can be purchased are requirements for persuading people to purchase the vegetables.

Adekunle et al. (2013) note that “respondents [immigrants not born in Canada] generally had a positive perception of the health implications of eating vegetables with more than 92% of them having the view that consumption of vegetables has positive health implications” (p.660). Nawaratne (2012) also suggests that the nutritional value, being organic and authentic are some of the key qualities considered by consumers in the decision of purchasing ECV. Statistics Canada (2012) notes that in general terms a diet rich in fruit and vegetables is determinant of a healthy lifestyle. This solidifies the suggestion of Adekunle et al. (2013) that marketing of ECV should emphasize their health benefits.

Factor 2: Versatility: Value added

Agri Food Canada (2013) suggest that there are opportunities existing for fruit and vegetable processors that can make fresh-tasting and convenience products suited for the busy way of life that is identified among Canadians consumers. Also suggested is that there are opportunities in the market for those producers with the ability to offer cuisines from different ethnicity and regions of the world (Agri Food Canada, 2013). Consumers’ demand for convenience and versatility opens a demand for more value added and innovative products. This
according to Kingsley and Senauer (1996), will no doubt drive the development of the agricultural sector.

A broad definition of value added according to Barton, Boland and Coltrain (2000), is to economically add value to a product by changing its characteristics to one that is even more preferred in the marketplace where it is supplied. Specific to agriculture, this would be the transformation of an agricultural product into a more consumer ready product. An example given was that of wheat being processed into flour and further into baked product. Kinsey and Senauer (1996) suggest that there is an evident change occurring in the way retailers deliver food to their consumers, which is largely attributed to the change in the lifestyle of those consumers. This also a strategy that could be pursued to increase main stream consumption of ECV.

Value addition of produce has considerable potential for propelling consumption of agricultural commodities. Figure 2.6 below presents the evident growth of value added product that is offered to consumers. Revenue from the agricultural value added industry in Canada for the periods 2000 to 2010, records the sale of goods manufactured by the fruit and vegetable processing industry increasing 10.4% from a value of $5.5 billion to $6.0 billion (Agri Food Canada, 2013)

![Figure 2.6 Revenue of value added products in Canada's agricultural sector](source: Agriculture and Agri food Canada 2013)
**Factor 3: Language**

Jimmintz (2008) (cited by Perkins and Walker, 2011) suggest that most ethnic consumers indicated that they would like to see marketing and communication delivered in their home language. It is important to note that much of the research that speaks to language, is specific to communicating to ethnic consumers and producers in their languages so that they can understand.

Language is also very important for achieving the crossover of ECV. In order for there to be mainstream acceptance, such consumers have to be able to relate to the commodity being sold to them. The example given by Grier, Brumbaugh & Thornton, (2006) of a Mexican tortilla chip is a suitable representative of a company/distributor that killed its crossover potential due to incorrect use of language. The chip was distributed by a Mexican company in Spanish and failed miserably in the mainstream market. The use of language speaks to the ethnic embeddedness, in the situation mainstream consumer assumed that based on the language used, the product was not meant for them and so they did not buy it. On the other hand, when the same product was distributed by a USA company, it was more widely accepted by both mainstream and relevant ethnic groups due to the use of the English language.

**Factor 4: Traceability: Locally produced vegetables**

Lammers 2010 (cited by Gunst, Jaques, Jurjens, and McDowell, 2010) states that Ontario, in recent years has embraced the whole notion of sustainability and has shifted towards consuming greater amounts of local and organic foods. Adekunle et al. (2013) point to the fact that because consumers are interested in where their food comes from, it is an indication that food grown locally is now in high demand. This is a promising development as consuming local
production may not only increase the availability of nutritious foods and promote good environmental management practices among local producers but will also be economically beneficial to local farmers and the country as a whole.

Additionally, Nawaratne (2012) notes that the potential benefits of locally grown ECV can help to reduce adverse environmental impacts and also allow consumers greater access to a healthy lifestyle by adding locally produced ethnic vegetables to their diets. Tilsworth and Barrett (2010), in accessing the food trends in Canada, suggest safety of the food supply is a major trend and is noted in section 2.2.4 above. They argue that consumers are now more aware of the food they purchase and consume. This has been propelled through media attention to such issues as product recalls, GMOs, mad cow disease, etc.

Also noted by Tilsworth and Barrett (2010) is the willingness of these mainstream consumers, to pay more for such local and traceable produce. The ethnic population according to Adekunle et al. (2011) and Kajumba (2012) prefer to buy imported produce over locally produced ones, but also would much rather buy local if these vegetables were competitively priced and available; economics is key to all consumers. Retailer, Harjinder Singh of Golden Groceries is referred to by (Perkin & Walker, 2011, p25.). He also indicated that customers inclusive of both ethnic and the mainstream, like to buy locally produced food and that when consumers see “Canadian grown” the produce sell more. Local produced vegetables, we recognise to be a growing trend and must be factored in the initiative of mainstreaming ECV by policy makers and all other stakeholders from the supply end of the value chain.

2.5. **Segment most willing to explore and consume newly introduced foods**

Agri Food Canada (2010) in its market analysis of consumers’ behaviours notes that:

A comprehensive understanding of consumers can improve the odds of successfully introducing a new product to the market. In addition to recognizing new opportunities,
businesses that monitor trends over time can better respond to potential shifts in the demand for their current products” (p.2).

North America’s population has been changing. This change is noted to be a reflection of not only the demographics of the consumers but also change relevant to their lifestyles. Overall the specific changes are inclusive of an aging population, more women in the labour force, slower growth in income and a widening disparity in its distribution, along with a slower growth in the population and greater infusion of ethnic diversity (Kinsey & Ben, 1996). Statistics Canada as (cited by Agri Food Canada, 2010) has predicted that the ethnic minority population in Canada will double in number by 2031. It is also noted that the Canadian households, are shifting from the nuclear family make up to more childless and single person households, with more career oriented women.

Gender, age, income and education level are some key variables that will be examined relevant to identifying the market segment that will be most likely to support the ECV market. Agri Food Canada (2010) points to the impact and diversity of the food market because of a similar growth of ethnicity within the Canadian society. These groups bring with them their own food desires and knowledge on how to prepare these for the market, further exposing other consumers. Such consumers according to Blisard, Lin, Cromartie & Ballenger (2002) will continue to demand from manufacturers and retailers new food products that are safer and more nutritious, innovative packaging, greater convenience and delivery systems.

2.5.1 Canada fruits and vegetable market: Age, sex, household, education and income

The Canadian consumption level for fruit and vegetables for 2012, seen in section 2.2.3, was noted to be 40.6% among individuals 12 years and older. This represents a minute growth when compared to 2011, 40.4%. Statistic Canada (2011) notes that in 2010, consumption within the fruits and vegetable market in Canada had declined for the first time since 2001, this after its
2009 peak of 45.6%. Figure 2.7 below shows the trend in consumption among various age groups in Canada. The data reveals that females consume greater amounts of fruits and vegetables than males and the age cohort, 35 to 44 is the group with the highest consumption level. Adults overall are consumer of a greater volume of vegetables than children (Statistics Canada, 2011).

Figure 2.7 Percentage reporting that they consumed fruits and vegetables at least five times daily, by age group and sex. Household population aged 12 or older, Canada 2011
Source: Statistic Canada (2011)

Ricciuto et al. (2006) noted that:

The emphasis on purchasing vegetables and fruit in households where older adults are present suggests health concerns may be a significant driver of food selections in these households. These purchasing patterns are in accord with individual consumption patterns in Canada, indicating older adults consume more vegetables and fruit than their younger ones (p.786).

The household structure was also noted as an important factor in assessing the consumers of vegetables and fruits and the research findings suggested that households with a single adult or where it is childless, had a greater volume of fruit and vegetable consumption per capita when compared to a larger household with children.
In addition to the gender and age and the household composition factors, Blisard et al. (2002) in an assessment of North American consumer suggest that more years of schooling enhances consumer awareness and knowledge of diet and health issues. This awareness impacts the willingness to consume healthier foods, which includes fruit and vegetables. The fruit and vegetable market is expected to see future increases with the increase in a more educated population. This argument is endorsed by the research of Ricciuto et al. (2006) who attempted to characterize the relationships between selected socio-demographic factors and food selection among Canadian households. The research found that there was a significant relationship between higher education among Canadians with the quantity of vegetables and fruit produce that was purchased. The research also found that a smaller quantity of meats and snack products were being demanded of the more educated population regardless of gender.

As it relates to income, Ricciuto et al. (2006) research suggested that, the purchase of vegetables and fruit was the most responsive to participants’ income and noted that a 10% increase in per capita income increased the purchasing of fruits and vegetables by 1.6%. The research indicated that while consumers increased food purchase in general, fruits and vegetables purchase increased steadily with increased income as opposed to foods in general that increased to a set income level of per capita.

This general mainstream consumer relationship between income and vegetable purchase is also evident in the ethnic community. According to Filson, Adekunle and Sethuratnam’s (2011) research on ECV examining various ethnic groups’ consumption in Canada’s GTA it was revealed that while the relationship between income and vegetable consumption pattern was more evident among Chinese and South Asians communities over the African-Caribbean
community, the relationship was still a significant one. Income impacts everyone’s spending and consumers of all ethnic backgrounds are willing to spend more with greater income level.

2.6 Conceptual framework

In exploring the literature, there are some key variables that have been identified that are interrelated and are significant in understanding the crossover of ECV. This has been illustrated in the figure 2.8 shown below. It involves three phases, inclusive of the past history, present effect and future potential all of which entails variables that feed into ultimately achieving the crossover of ECV.

![Conceptual framework](image)

*Figure 2.8 Conceptual framework developed from reviewed literature*
Crossover history began with the migration of immigrants firstly of European descent but over the past several years has become largely constituted by people non-Europeans descent (Kelly & Trebilcock, 2000; Aycan & Kanungo, 1998). These immigrants brought with them their foods, inclusive of ECV. In the past, it is seen that strategies inclusive of advertisement and promotion were developed subsequent to the introduction of these vegetables. These strategies either led to the success or failure of such foods becoming accepted by mainstream consumers. In the case of crossover success, this is realised when the mainstream market has accepted these foods as part of their diets and are continuously purchasing same.

In context, migration is the origin of crossover and due to its continuity is relevant to the present crossover effect of ECV, it is also largely the cause for the ECV knowledge that is present within the mainstream market today resulting from the demand for these ethnic foods by immigrants. Availability of ECV is also directly caused by this demand and has an impact on what is available to all consumers. In consideration of satisfaction of the mainstream consumers with what is available in the market, it is important to understand what defines consumer satisfaction. Quality, which is usually of both intrinsic and extrinsic values are what consumers look for in product and what is essentially the factor which guides consumer’s purchasing decisions (Rodriquez, Lupin and Lacaz, 2006). In addition to individual defined quality being met, satisfaction of the mass occurs when these factors are considered and are also met by producers/supplier and must be taken into consideration and factored in any strategy for the realization of crossover.

Trends are influenced by the mainstream and relevant to ECV are also impacted by the knowledge, awareness and exposure that is developed over time. ECV has been noted by USDA Foreign Agricultural Service, 2003 (cited by Faye, 2004), to be one of such growing trend in
Canada. These trends are of significant importance, as it also impacts on those purchasing factors that must be considered by suppliers. These trends are inclusive of both consumer trends and distribution trends.

Trends as well as the previously mentioned purchasing factors are two variables that must be brought forward in considering what strategies are to be developed and what demographic to target for realising the potential of ECV crossover. Strategies and demographic both impact on each other. The defined demographic will determine new strategies and these strategies will be used in penetrating said market segment. Therefore they are both essential in achieving ECV crossover of the mainstream.

2.7 Summary

Crossover is defined as the process of achieving success in a different field or style and is especially relatable to music (Oxford Dictionary, 2014). The research, however examined crossover with relevance to ECV, which the Vineland Research Innovation Centre (2012) publication explained to be non-traditional produce, not usually grown in Canada and are introduced by recent immigrants of non-European descent.

ECV crossover based on the literature is however not a new phenomenon, as Europeans in the early 1800’s also introduced foods inclusive of vegetables to North America that today have mainstreamed. The crossover of vegetables therefore is something that is possible but there has to be keen attention to several important variables, inclusive of satisfaction and quality requirement, trends and purchasing factors and understanding what demographic of the population should be the focus of the developed strategies. What is concluded by the review of the literature is the importance of learning from the past to properly guide a strategic direction for the future of ECV’s ultimate crossover.
Chapter 3
Methodology

3.0 Introduction

The purpose if this chapter is to give the reader adequate understanding of the process that was employed in the collection of the data that has been analysed and presented. The chapter includes information relevant to the research design, epistemology, data collection techniques, participants, ethical consideration, research limitations and the method of data analysis.

3.1 Research design

This research sought to give clarity about the crossover effect of ethno-cultural vegetables among the Guelph consumers. This was done through examination of five objectives, relevant to consumer satisfaction with vegetable, knowledge about ECV, factors influencing ECV consumption, local production of ECV and characteristics of potential ECV crossover consumer demographics. All data relevant to addressing the objectives were acquired through utilisation of a mixed approach.

This mixed approach combines both the qualitative and quantitative methods of data collection process. According to Wallendorf & Belk (1989) qualitative research can provide insights into customer behaviour that other kinds of methods cannot. This type of research seeks to garner a sense of the emotions and experiences of participants in terms of their views of a product or service. The quantitative data gathering includes primarily data from respondents that give definite responses to questions; this method allows the researcher to have the ability to eliminate as much error as possible.

Wallendorf & Belk (1989) further notes that both methods have their advantages and disadvantages the qualitative method is exploratory and subjective, while quantitative is
objective and explanatory, they both have been shown to complement each other. Therefore for these reasons the mixed approach was chosen to offer balance within the research process.

The mixed method not only guided the data collection tools that were employed but were also relevant to the trustworthiness of the data collected. The approach formed a basis for ensuring that due consideration was made specific to the validity and reliability of the data collected and how it was utilised. The building of data validity according to Zohrabi (2013) has to be the responsibility of the researcher and the participants, from the point of preparation of the instrument through to data collection, analysis and interpretation. To this end, the questions used in all modes of survey were reviewed by research experts, to ensure its content relevance to the studied area.

As a result of utilising the mixed method approach, the data collected was audited through a cross checking and triangulation process. This was due to utilisation of several kinds of data collection methods used in the research process. Such triangulation allowed greater insight into the area of study and offers to the reader a larger, more reliable representation relevant to the ECV and the crossover effect on non-immigrants and other cultural groups. Such validation and reliability considerations throughout the process should offer to the reader increased confidence in the completed research.

3.2 Linkages: Research goals, objectives, methodology and epistemology

According to Trochim (2006) there are three basic types of questions that research can address; these are inclusive of causal, descriptive and relational. Both descriptive and relational methods were utilized in directing this research. Descriptive is said to be when a study is designed primarily to describe what is existing. The relational approach goes a step further and examines the relationship that exist between two or more identified variables. In addition to
descriptive and relational methods the exploratory approach was also applied to the research process. This according to Babbie (2012) is where the research begins and is an important aspect of social science research, particularly when the research is a relatively new one. While there has been several research published about ECV over the past five years, understanding crossover of ECV is a relatively new undertaking. The exploratory aspect of the research seek to offer a better understanding of the topic.

Variables such as sex, age, ethnicity, level of consumer satisfaction, willingness to pay more for ECV, rating of consumer adventure level and others were all examined relative to these three approaches. As a result of understanding these variables, the relationship between Guelph residents and the crossover effect of ethno-cultural vegetables are presented.

The method as was previously defined is consistent with the post-positive epistemology on which the research is grounded. Unlike positivism which claims to be able to establish ‘the truth’ about what is observed, post-positivism such as this research attempts to be objective but recognizes that the research process is somewhat subjective (Cruickshank, 2007). The post positivist approach seeks to account for those intangibles that are not necessarily quantifiable but need to be understood and interpreted to make more sense of the data. It is on this basis that the mixed approach was utilized to ascertain data from both the qualitative and quantitative approaches through exploration, whilst establishing the descriptive and relational connectivity between variables.

In utilizing the mixed method approach in the collection of data, various instruments and data collection mechanisms were utilized, lending itself to triangulation. According to O’Donoghue and Punch (2003), triangulation is a method of cross checking data from multiple sources to identify any irregularities in the research data. This is an aspect of the research process
that is also supported by the foundation of the post-positivist epistemology which was utilized in this project. Triangulation attempts to ensure that information is not only collected by various means but that it can also be interpreted through utilization of various analytical tools, thereby strengthening the reliability and validity of each individual method as the results from each method are compared with those of the other methods used. For the purpose of this research these are the types of triangulation processes that were exercised. Some degree of triangulation of both theories (political economic, sociological and anthropological methods) were employed and triangulation of data collection methods (a survey, interviews and focus groups) were used.

3.3 Data collection methods

In utilising the mixed approach various data collection instruments were employed in the data collection process, inclusive of the following:

Three hundred and sixty-five questionnaires inclusive of both closed and open ended questions were administered by three graduate research assistants in the Guelph Stone Road Mall shopping area under the supervision of Drs. Filson and Adekunle in 2013. The data from the survey was analysed relevant to providing information specific to research objectives (see the results below in Chapter 4).

Interviews – Eleven key informants, inclusive of governmental representative and private stakeholders – including marketing advocate, ECV consumers and producers/retailer were consulted at various intervals to give necessary insights on specific areas. All interviewees were asked the same set of questions and were allowed to elaborate as they felt necessary, especially as it relates to their area of expertise and involvement in ECV. This allowed for both pointed answers but also in-depth information from these key informants.
A total of thirteen participants from the University of Guelph Canadian born population were included in the two focus groups that were conducted. These focus groups had two separate levels of student, one with undergraduates and the other with graduates. These allowed for further information relating to knowledge and awareness, willingness to consume ECV, associated factors of purchase and consideration about local production by the specific target group. Participants’ involvement comprised of:

- Discussions and votes around the research topic, based on open and closed ended questions that were presented.
- They were also given sample dishes of prepared ECV inclusive of bok choy, okra, cassava and plantain to which they gave taste ratings between a high of 10 for: Liked the taste very good and a low of 1 for: Did not like the taste at all.
- A written exercise was administered for them to give their thoughts regarding local production of ECV based on three scenarios. The first scenarios was that, there is a $61M demand for ECV in the Greater Toronto Area. Secondly, the Canadian vegetable intake is on the decline and thirdly, Canada is wasting food, buying more food than what they can consume.

Previous research and publication both locally and internationally, relevant to the area were reviewed with noteworthy arguments presented as part of the literature review and overall research documentation. Several academic databases were explored inclusive of Google scholar, Ebsco and Agricola, Statistic Canada, etc. The University of Guelph database was also a critical point for information, as previous studies relevant to the topic of ECV were available. Generally, such information, allowed for an even greater appreciation of the topic and the work that had already been done.
3.4 Participants

The data collection process included a variety of participants and are discussed below based on the utilized instrumentation. Instrumentation as mentioned includes survey/questionnaire, in-depth interviews and focus group discussions.

In a previous data collection initiative directed by Drs. Filson and Adekunle in 2013 on the matter of ECV acceptance, a total of three hundred and sixty-five participants were surveyed at the Guelph Stone Road Mall. These individuals were surveyed based on the assumption that they were all potential Guelph consumers of ECV. It included not only Canadian born consumers but also some people who had immigrated to Canada from various cultural backgrounds and who, based on the information (number of years in Canada), are non-recent immigrants. The information form of the survey gave the research rich information as it is felt that it is important not only to understand the crossover among Canadian born but also an assessment of the crossover between the various cultural/ethnic groups living in Guelph.

Eleven interviews were conducted and included a wide scope of key informants valuable to the research topic. Interviewees were chosen based on their involvement in agriculture, some with specific interest in the ECV subsector. They included 5 Guelph farmers’ market vendors, 2 producers at Ignatius farm in Guelph, and representatives of private and governmental organization such as Farmstart, the Plant Agriculture Department at the University of Guelph as well as the Ontario Ministry of Agriculture, Food and Rural Affairs. All interviewed candidate identified themselves as consumers and they are also considered as such in addition to their professional role in the discussion of the results. These interviews revealed some of the various perspectives that exist relevant to ECV crossover in Guelph and to a larger extent Canada.
Focus Group discussions include Canadian born students of the University of Guelph. One included 8 graduate students and another had 5 undergraduate students, from no specific discipline. The criteria for the selection of the participants were based primarily on their non-immigrant Canadian status. The choice of two such focus groups were to assess if levels of education and maturity had any impact on the potential for crossover of ECV in Guelph mainstream, further informing and defining the demographic of ECV consumers.

3.5 Ethical consideration

The ethical aspect of the research methodology was considered, firstly with the approval of the process by the University’s Research Ethics Board. Participants involved in the process were reassured of the confidentiality of their identities and were given information relevant to the research problem, its objectives and their voluntary participation. The questions included in the instruments utilised were specifically related to the research questions and participants were not asked any personal information outside of questions relevant to the specific subject matter.

3.6 Data acquisition - Merits

Data acquisition was inclusive of surveys, interviews, focus group and examination of relevant published secondary data. Some of the merits of each data acquisition approach were identified throughout this research process and are outlined below.

The survey questionnaires were administered in 2013. Accessing this previously collected data was cost effective and allowed time to carry out other data collection. Analyses of the data based on its deductive nature proved to be more clear-cut than those qualitative in nature.
Asking questions at several levels to ascertain in-depth information on the subject proved beneficial as it gave different perspectives to the topic, based on the different backgrounds of the interviewees. With a combination of structured and unstructured questions, this provided depth and richness to the data being collected and by extension to the research.

Focus groups allowed for an opportunity to hear from a diverse set of individuals in one sitting. The focus groups allowed participants to contribute in such a way that they could communicate their feelings about ECV consumption in a meaningful, interactive way. This was something in this instance, they indicated that they had never given much consideration.

Lastly, secondary data was analyzed to provide greater understanding of a wider geographic sphere than would otherwise be obtained by the survey, focus groups and the interviews. It allowed for greater external perspective on the crossover, not only specific to food but other industries of relevance that can inform the crossover of ECV in Guelph and to a larger extent, Canada.

3.7 Effectiveness and efficiency of methods used

All the methods outlined proved to be effective in providing the necessary information to respond to the research topic, goals and objectives. Importantly, each method contributed as a whole to the process of ensuring validity and reliability of the research. While the primary data sources seemingly may be more relevant, the already published research on the topic was also important and allowed for a greater grasp of what the primary data set is suggesting. This was a cost effective way of better understanding the topic of ECV crossover not just relative to Canada and vegetables but provided crossover examples of other foods, music and cultural exchange on a global scale.
Each method above is efficient in its own right. Questionnaires were efficient as it provided data from the larger population. The interviews and focus groups were more efficient and effective for the more intimate situations and offered a better mean for greater elaborative answers and discussions. Focus groups and interviews are fairly straight forward once the objectives and criteria for the selection of participants are clearly defined. These methods were used to fill the gaps identified after preliminary analysis of the survey was done.

3.8 Data acquisition - Limitations

In exploring the merits/ advantages of the methods, it is important to also understand that there are also limitations to these methods. It is only through understanding these disadvantages that one will be able to utilize the methods with greater effectiveness and efficiencies and successfully execute a research that is meaningful and relevant to its reader.

The limitation of the methods in context of both secondary and primary data collection differ. As it relates to secondary data, the primary limitation is that, the reliability is not guaranteed because the information that is used is based on the assumption that what has been presented and published is true.

With the primary data collection methods such as those mentioned, interviews and focus group discussion, there is a greater level of comfort that the information is true since the process of data collection and analysis were personally executed. For the survey, while the data was previously collected, the process was managed by University researchers with significant experience relevant not only to research execution but also knowledgeable about the subject, ECV. Additionally, the analysis of the survey was personally done by the researcher relevant to the outlined research objectives.
Surveys, also come with their own set of challenges such as those relevant to response rate of individuals; as it was identified in the analysis that not all participant responded to all the questions. Also the survey was administered largely to individuals who visited or shopped at the Stone Road Mall and is therefore not fully representative of Guelph’s population. With the interviews, the limitation that presented itself was that of ensuring that the questions that were posed were properly understood prior to the participants responding. As such there were instances when the question had to be rephrased and clarified. Limitation associated with the focus groups were in the first instance getting eligible people interested in volunteering their time out of their busy student schedules. The other difficulty that had to be handled was to get the involvement of all participants in the discussion as it proceeded.

3.9 Data analysis

Due to the mixed method approach that was used, data collected for analysis, as mentioned were both quantitative and qualitative. Therefore the analytic approach used was relevant to the category and method under which they were classified.

3.9.1 Qualitative

The grounded theory approach in coding and categorizing the qualitative data set was utilized to facilitate the analysis of data derived from interviews and focus groups. The grounded theory is inductive in nature and provides for a systematic and rigorous procedure, it also allows rich data from the experiences of individuals. The data collected from both the interviews and focus groups were both analysed based on the grounded theory approach.

For the interviews, all the responses to each question (already aligned to a research objective) were grouped into mutually distinct themes that emerged from an open coding process. Eleven themes emerged including; vegetable availability, ECV satisfaction and quality,
distribution of ECV, acculturation, local vegetable production and consumption, purchasing factors, consumer changing taste, crossover marketing strategies, information for better prices, capacity improvement requirement and ECV intercultural acceptance.

Relevant to the focus groups, recordings were transcribed and the written information that was collected in the focus groups were categorised based on predefined themes relevant to the research objectives. The themes included knowledge and awareness, accessibility, willingness to consume ECV and local production of ECV.

In addition to the themes that were discussed, for both the interviews and the focus group, quotes from participant of both the interviews and focus groups are included in particular areas, allowing for greater emphasis to the reader on the themes that are presented.

3.9.2 Quantitative

Analysis included descriptive and inferential statistical analysis of quantitative data collected from questionnaires using the SPSS software. Calculation of central tendencies, correlation and binary logistic regressions were done with the survey data collected at the Guelph Stone Road Mall. The inferential statistical tests that were done were largely non-parametric. This was necessary as the data collected was not necessarily normally distributed and many of the answers to the questions were either categorical or ordinal instead of continuous. The quantitative analysis used are outlined below specific to each objective.

Descriptive statistical information was firstly presented, in order to offer to the reader data that would allow for greater understanding about the surveyed population. As such central tendencies, inclusive of mean and standard deviation were calculated for some demographic variables inclusive of age, number of years residing in Canada and number of people in household and amount of money spent on ECV. Additionally, frequency and percentile
information were also calculated, with the same objective to inform readers about the surveyed participants. These examined the gender distribution, employment status and the composition of the non-recent immigrant population that was surveyed.

**Objective 1.** In examining objective 1, relevant to consumer satisfaction, frequency tables were generated to provide information on consumer rating firstly of seasonal supply of fresh vegetables in Guelph and secondly with satisfaction with ECV in Guelph. The two data sets offered comparison information between both ratings.

**Objective 2.** For the second objective, which examined consumers’ knowledge and awareness, calculations were done to understand the factors that influenced consumer knowledge about ECV. For this 2 binary logistic regressions were done, with the two ECV identified to be the most known among consumers, used as the dependent variable. The same 9 predictor variables were used for both regressions to allow for consistency in the results. Most of the variables used had to be recoded into dichotomous variables, which is required for running a binomial regression. These predictor/independent variables included in the regression are listed below in table 3.1, with their respective measurement and predictor codes.

Table 3.1 *Summary of independent variable used in binary logistic regression: Knowledge of bok choy and Chinese eggplant*

<table>
<thead>
<tr>
<th>Variables</th>
<th>Description</th>
<th>Measurement</th>
</tr>
</thead>
<tbody>
<tr>
<td>X₁</td>
<td>Gender</td>
<td>Female (1) Male (0)</td>
</tr>
<tr>
<td>X₂</td>
<td>Age</td>
<td>Number of Years</td>
</tr>
<tr>
<td>X₃</td>
<td>University graduate</td>
<td>University Graduate (1) Others (0)</td>
</tr>
<tr>
<td>X₄</td>
<td>Full time employed</td>
<td>Full time employed (1) Others (0)</td>
</tr>
<tr>
<td>X₅</td>
<td>Vegetarian</td>
<td>Yes (1) No (0)</td>
</tr>
<tr>
<td>X₆</td>
<td>Plant own vegetable</td>
<td>Yes (1) No (0)</td>
</tr>
<tr>
<td>X₇</td>
<td>Vegetable purchase more than once a week</td>
<td>More than once a week (1) Others (0)</td>
</tr>
<tr>
<td>X₈</td>
<td>Primary purchaser of vegetable</td>
<td>Yes (1) No (0)</td>
</tr>
<tr>
<td>X₉</td>
<td>Spend 21% or more of income on vegetable</td>
<td>21% or more (1) Less than 21% (0)</td>
</tr>
</tbody>
</table>
According to Singh (2007) binary logistic regression involves fitting the equation into the form: \( \text{Logit}(p) = a + b_1X_1 + b_2X_2 + b_3X_3 + \ldots + bnX_n. \)

This is where: \( p \) = probability; \( a \) = constant; \( X \) = predictors; \( b \) = exponent. This model is relevant to all binary logistic that are calculated for objective 3 and 5.

**Objective 3.** In statistically analyzing objective 3, a binary logistic regression was also done with the dependent variable being question (11) of the survey:

*Do you consume any vegetable not typically associated with your ethnic or cultural group?*

and 5 predictor variables including, freshness, quality, taste, locally produced and appearance all stemming from question (16) of the survey:

*What factors other than price influence your decision to purchase vegetables?*

All of the 5 indicated response to the question was coded in SPSS as a dummy variable. Yes coded as 1 and No as 0.

**Objective 4.** For the fourth objective a frequency distribution table was generated to assess the willingness of consumers to consume ECV if grown locally. Providing such a table gave a pointed answer to the objective, which was to specifically assess the Guelph consumer willingness to consume ECV if grown locally. The table was however reinforced with several Chi square tests to identify the relationship that existed between willingness to buy ECV if produced locally with other relevant variables, including gender and willingness to pay more for ECV.

**Objective 5.** For the final objective another binary logistic was used to identify the segment of the population that would be most willing to consume ECV. This was done by utilizing the following variables:

Dependent variable, Question 9.3 of the survey -
If made available, would you be more willing to buy, indifferent to, or less willing to buy ethnic vegetables that are recently introduced to the market?

Independent variable and their SPSS coding is as listed in table 3.2.

Table 3. 2 Summary of independent variables used in binary logistic regression: Willingness to buy recently introduced ECV

<table>
<thead>
<tr>
<th>Variables</th>
<th>Description</th>
<th>Measurement</th>
</tr>
</thead>
<tbody>
<tr>
<td>X₁</td>
<td>Gender</td>
<td>Female (1)  Male (0)</td>
</tr>
<tr>
<td>X₂</td>
<td>Age</td>
<td>Number of Years</td>
</tr>
<tr>
<td>X₃</td>
<td>University Graduate</td>
<td>University Graduate (1) Others (0)</td>
</tr>
<tr>
<td>X₄</td>
<td>Full time Employed</td>
<td>Full time employed (1) Others (0)</td>
</tr>
<tr>
<td>X₅</td>
<td>Full time Home</td>
<td>Full time home (1) Others (0)</td>
</tr>
<tr>
<td>X₆</td>
<td>Household Income $4000 and below</td>
<td>Income $4,000 &amp; below (1) Above $4,000 (0)</td>
</tr>
<tr>
<td>X₇</td>
<td>Number of people in household</td>
<td>Amount in Numbers</td>
</tr>
<tr>
<td>X₈</td>
<td>Farmers’ market shopper</td>
<td>Farmers Market (1) Others (0)</td>
</tr>
<tr>
<td>X₉</td>
<td>Supermarket shopper</td>
<td>Supermarket (1) Others (0)</td>
</tr>
<tr>
<td>X₁₀</td>
<td>Ethnic store shopper</td>
<td>Ethnic store (1) Others (0)</td>
</tr>
<tr>
<td>X₁₁</td>
<td>Very adventurous consumers</td>
<td>Very adventurous (1) Others less adventurous (0)</td>
</tr>
</tbody>
</table>

The use of quantitative statistical software SPSS allowed for the avoidance of personal biases in the results, as the results were purely calculated and was not subjected to personal interpretation. The quantitative analysis allowed for greater objectivity and accuracy of results.

3.10 Summary

The chapter presented the procedures that were utilised to generate findings relevant to answering the research objectives. Steps and considerations involved in the research process form the point of data collection to how the data was analysed for inclusion in the following results chapter were discussed. The research adopted a research design that was descriptive, relational and exploratory in nature and a mixed method was used in the collection and analysis of both qualitative and quantitative data.
The qualitative data, inclusive of in-depth interviews and focus groups discussions were analysed based on a grounded theory approach. For interviews, the responses were coded and developed into narrowed themes and for the focus group, responses were based on pre-defined themes. The quantitative data, previously collected was analysed using SPSS software and Microsoft Excel. Descriptive and inferential statistical information were calculated and presented in pictorial and tabular formats.
Chapter 4

Results

4.0. Introduction

This chapter is presented in 3 sections. Section one and two are qualitative findings. Section one gives information relating to findings derived from the in-depth interviews conducted. The second section present the finding from two conducted focus groups and the third section presents the quantitative analysis of data ascertained from the administered questionnaire.

4.1 Qualitative analysis

The qualitative analysis is presented in two sections, firstly with themes deriving from 11 conducted interviews and secondly based on themes that directed two focus groups discussions. The data collection and analysis were conducted to gain added understanding about the crossover effects of ECV among Canadians.

4.1.1 Interviewed participants

Table 4. 1 Participants interviewed

<table>
<thead>
<tr>
<th>ID #</th>
<th>Participant's Capacity</th>
<th>Activity /Organisation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Vendor</td>
<td>Farmers’ Market</td>
</tr>
<tr>
<td>2</td>
<td>Vendor</td>
<td>Farmers’ Market</td>
</tr>
<tr>
<td>3</td>
<td>Vendor</td>
<td>Farmers’ Market</td>
</tr>
<tr>
<td>4</td>
<td>Vendor</td>
<td>Farmers’ Market</td>
</tr>
<tr>
<td>5</td>
<td>Vendor</td>
<td>Farmers’ Market</td>
</tr>
<tr>
<td>6</td>
<td>Producer/ Consumer</td>
<td>Ignatius Farm</td>
</tr>
<tr>
<td>7</td>
<td>Producer/ Consumer</td>
<td>Ignatius Farm</td>
</tr>
<tr>
<td>8</td>
<td>Program Manager</td>
<td>World Crop Project</td>
</tr>
<tr>
<td>9</td>
<td>Program Manager</td>
<td>FarmStart</td>
</tr>
<tr>
<td>10</td>
<td>Researcher</td>
<td>University of Guelph</td>
</tr>
<tr>
<td>11</td>
<td>Economist</td>
<td>Ontario Ministry of Agriculture</td>
</tr>
</tbody>
</table>
The interviewed participants were inclusive of various stakeholder involved in the agricultural sector, with some more specifically involved in the ECV subsector. Participants are outlined above in table 4.1. In addition to the five vendors at the Guelph farmers’ market, that were from various backgrounds as outlined in table 4.2 below, information is also provided about the items that they sold. There were two small farmers of the Ignatius Farm, community shared agriculture program, where fruits and vegetables are produced and supplied to community buyers.

ID 8 and ID 9 were both Program Managers of two organisation that facilitate activities related to growing the ECV subsector. The two organisations are FarmStart, which is more focused on the production aspect of ECV and the World Crop Project, which is designed for marketing and increasing awareness.

The researcher at the University of Guelph, Department of Plant Agriculture (ID10) has done several years of technical research on some ECV and has assessed the viability of producing these vegetables in Canada. Finally (ID 11) is an economist who works for the Ontario Ministry of Agriculture, Food and Rural Affairs, was interviewed in a bid to obtain a better understanding of the government’s perspective on the ECV subsector.
Table 4.2 Vendors’ Information

<table>
<thead>
<tr>
<th>ID #</th>
<th>Participant’s Capacity</th>
<th>Activity/Organisation</th>
<th>Gender</th>
<th>Ethnicity/Country of Origin</th>
<th>Items sold</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Vendor</td>
<td>Farmers’ Market</td>
<td>Female</td>
<td>Ethiopia</td>
<td>Prepared meals, juices and processed condiments</td>
</tr>
<tr>
<td>2</td>
<td>Vendor</td>
<td>Farmers’ Market</td>
<td>Male</td>
<td>Canadian</td>
<td>Fresh fruits and vegetables</td>
</tr>
<tr>
<td>3</td>
<td>Vendor</td>
<td>Farmers’ Market</td>
<td>Male</td>
<td>Canadian (Chinese &amp; Ukraine) Background</td>
<td>Cheese, meats - goat, sheep, etc.</td>
</tr>
<tr>
<td>4</td>
<td>Vendor</td>
<td>Farmers’ Market</td>
<td>Male</td>
<td>India</td>
<td>Prepared Indian dishes and pastries</td>
</tr>
<tr>
<td>5</td>
<td>Vendor</td>
<td>Farmers’ Market</td>
<td>Female</td>
<td>Cameroon</td>
<td>Prepared Cameroonian dishes and pastries</td>
</tr>
</tbody>
</table>

The interviews revealed that vendors in the Guelph farmers’ market do not supply fresh ethnic vegetables but for those who sell prepared meals, they do incorporate some ethnic vegetables in the prepared dishes. Except for one (ID 4) who indicated he was not very adventurous with trying new foods outside of his own ethnic group, all other vendors grow vegetables for consumption or sale and indicated that they do consume vegetables typically consumed by members of other ethnic groups. The vendor of Chinese descent (ID 3) was more knowledgeable about some of the more popular ECVs such as okra and bok choy than other vendors. The vendors all agree that consumer taste in vegetable appears to be changing. It is interesting to note that the fresh vegetable vendor indicated that consumers are seeking new food types and spices. Overall vendors felt that consumers’ flavour profile seemed to be changing.
4.1.2 Interview results

Figure 4.1 gives a summary of the themes that were derived from the interviews. The process flow also offers a better understanding of how these themes emerged based on the objectives and the related question. Eleven themes emerged from the open coding process. They are vegetable availability, ECV satisfaction and quality, distribution of ECV, acculturation, local vegetable production and consumption, purchasing factors, consumers’ changing taste, crossover marketing strategies, information for better prices, capacity improvement requirement and ECV intercultural acceptance are the themes that emerged from the open coding process. The findings of each is detailed below.

![Diagram of interview theme development process](image-url)
4.1.3 Vegetable availability

The vegetable availability theme, is the ability of consumers to readily and consistently access the vegetables that they require to satisfy their demand. Most of the interviewees indicated that the availability of vegetables in the Guelph area is very good. The responses indicate that 72% of interviewed candidates noted that they would rate the satisfaction of vegetables in Guelph as good to very good. For the remaining 37%, interviewed participants, the issue related to availability includes seasonality and imports which they are not sure about the safety of the product.

ID 1 noted that, “freshness of the vegetable provided is questionable because of the seasonality of Canada.” According to ID 9 seasonality is a big issue that causes importation of vegetables. The interviewed participant also stated that most of the vegetables that are sold in the various small markets displays are imported, and suggested that they are procured late in the week from the Ontario Food Terminal and sold on Saturday to consumers. While ID 9 thinks that the availability of vegetable has improved from where it was a few years ago, it was noted that there is still room for growth. Additionally, the participants noted that:

Availability means I should get it when I want it and that is not happening. Some stuff consumers may never get because of the seasonality. We will never be able to grow them in Canada.

4.1.4 ECV satisfaction and quality

The theme represents how the demand for quality vegetables relates to consumer satisfaction. Of the 5 vendors in the Guelph farmers market that were interviewewed 4 indicated that ethnic consumers are not satisfied with the quality of ECV available to them. It is interesting to
note that the one vendor who indicated a positive satisfaction with ECV also noted that the satisfaction was only “partly”, this was based on her personal feeling as a consumer.

According to ID 6, that the market is not where it needs to be in terms of satisfying consumer demand for ECV. When asked the question; do you think ethnic consumers in Guelph are satisfied with available vegetables? The respondent noted:

So so, that is why there are people at Ignatius Farm growing their own vegetables for better quality and freshness.

ID 9, stated that: some of the mangoes and yam in the supermarket are not the good quality.

While ID 7, felt that the core ethnic consumers were not sufficiently supplied with ethnic vegetables as there are issues related to freshness and availability of ECV. It was however further stated that:

mainstream /born Canadians have a lot more ethnic foods available to them than was available 15 years ago. More people are coming to Canada from all over, introducing new exotic vegetables and different types of food.

This argument indicates that while ECV are more available in the mainstream market, the ethnic consumers are still not sufficiently supplied with the quality ECV to which they are accustomed.

4.1.5 Distribution of ECV

Distribution is identified as the movement of ECV from its original source(s) to the potential consumers. The distribution of ECV in the Guelph area emerged as an issue impacting on the poor level of satisfaction that is identified within the ethnic population. These were derived from the responses and arguments of several participants and are outlined below.

While ID 11 was the only interviewed respondent who noted that ethnic consumers are satisfied with ECV in Guelph, the response was further clarified as ID 11 noted;
Yes, but satisfaction is greater in some areas more than other, due to the amount of immigrants that reside in some places.

Other interviewees stated the following:

ID 9 noted that, “some immigrants have to go to Toronto if it is convenient to get the foods they want as it is more available there than in Guelph.” Further ID 9 noted that, “I used to go to Toronto to buy my vegetables sometimes once a month. I don’t do that as often anymore. Sometimes it’s just too busy.”

ID 5 indicated that, “there are not enough ethnic stores in Guelph. There are some things I want, which I can’t get here.”

4.1.6 Acculturation

Acculturation relates to the acceptance of ethnic vegetables by Canadian born and non-recent immigrants. A total of 91% of the candidates interviewed indicated that they were consuming vegetables that they didn’t consume when they were children. This position was representative of both the Canadian born and non-recent immigrants. All Canadian born interviewees however, indicated that the new vegetables they were consuming were mostly ethnic. This finding suggests that acculturation of both groups is taking place in different ways. While Canadian born participants indicated that the vegetables they have added to their diets included some ethnic vegetables such as bok choy, yams and okra, non-recent immigrants, largely indicated that the new vegetables being consumed were North American mainstream vegetables.

Both ID 8 and ID 10 similarly noted; “I have eaten many ethnic vegetables.” This was attributed to the fact that they were both very involved in some way to the growth of the ECV sub-sector. ID 8 as a promoter and ID 10 as a technical specialist/researcher.
The 9% of the participant interviewed who indicated that they did not consume ECV were all immigrants. Additionally, most of those immigrants that said, “yes” they have been having new vegetables in their diet, indicated that these were more mainstream vegetables, inclusive of broccoli, parsnip, artichoke and kale.

ID 11 noted that: *I eat bok choy but it would not be ethnic for me. I am now consuming things like artichoke. These are vegetables that I would not have consumed back home (South Asia) but I eat it now. I would have to say no to consuming ECV, I think those new vegetables I eat would be North American.*

ID 5 said, *since I’ve been here I eat a lot of broccoli that was not in Cameroon when I lived there, it only recently that I have been back there and I see broccoli in some supermarkets.*

### 4.1.7 Local vegetable production and consumption

Local vegetable production and consumption, presents the interaction between individuals growing and consumptions pattern as it relates to ECV. Of the participants interviewed 91% indicted that they grew some vegetables for their consumption, in small quantities. The data indicate that most of the participants (72%) grow vegetables strictly for their own consumption. The 38% difference is represented by a vendor and the small producers, who grow produce in a communal farm setting. These individuals, represented within the 38% grow vegetables for both consumption and sale. ID 6 and 7, vegetable producers, indicated that they grow most of their vegetables on communal plots, leased at Ignatius Farm.

ID 6 noted that, *the participating farmers are from diverse backgrounds. It is a multicultural group. Common vegetables that are grown include tomatoes, corn, eggplant and okra.*
Most of the vegetables that are produced for personal consumption are said to be grown in the backyards of individuals. The finding also indicates that these vegetables are mostly mainstream vegetables, inclusive of tomatoes, pepper and herbs such as dill and cilantro. The individuals who grow some ECV are those with greater experience and exposure to such ethnic vegetables, the small producers indicated that they plant okra, compared to the vendors who planted purely mainstream vegetables and herbs.

ID 9 said: Yes, I grow some of my vegetables for consumption. I have grown at home bitter melon, okra, callaloo, chillies and coriander.

ID 8 stated: I promote growing of world food and I have tried growing some personally. I have tried different beans and Chinese peppers and eggplant and others.

Participants were asked, what five vegetables they felt were most regularly consumed. The top five based on the analysis of total response were all mainstream – carrot (60%), onion (50%), tomato (40%) and broccoli (30%) - except for bok choy. Bok choy was identified to be equally popularly consumed as broccoli. Such findings pointed to another relevant question, Is bok choy a mainstream vegetable?

ID 10 noted that, Chinese have been growing their vegetables for over 40 years in Canada.

It has grown into a viable enterprise, and these vegetables are economically viable. There is a lot of export of bok choy and Shang High bok choy to the US from Canada.

She further gave an example of a Canadian producer, who, based on the demand, produces some of these ethnic vegetables in Mexico when it is too cold for them to be produced in Canada. It was also indicated that based on the level of maturity within the industry, it was the closest to the mainstream of other ECV grouping.
4.1.8 Purchasing factors

The information revealed that there are several factors that individuals consider in their decisions when purchasing vegetables. Two factors emerged as most important. These were freshness and quality of the produce. Freshness was the most frequently considered factor with 81% of the respondents indicating they wanted their vegetables to be fresh.

ID 10 attributed the reason for planting some vegetables for personal consumption was based on the reason, that, “I always like growing tomatoes because I like them fresh.”

ID 6 noted that, consumers pay better prices for 1st season vegetables. They are presumed to be of better quality and fresher.

ID 9 noted that, freshness definitely and the quality of the vegetables are two important factors. I would definitely say these are the top reasons.

Importantly, 75% of those interviewed participants stated that quality was an important factor, also stated that freshness was important. As seen in quotes presented above by ID 6 and 9.

4.1.9 Consumers’ changing taste

The evolving appetite of consumers for new foods is promising to the crossover possibilities that exist among consumers. All participants felt that the taste of consumers was changing in various ways. One of the reasons posited was that consumers were now interested in foods that are more flavourful.

ID 6 noted, yes, people are interested in new foods that are spicier, like salsa. In a bid to support her point, the participants further asked; did you know that salsa had bypassed ketchup sale in North America over the past few years?

ID 2 noted; yes, people are using new foods, especially new spices and things like avocado.
ID 4 indicated that, people are trying spicy, more flavourful foods. He further gave the example associated with his samosa and other Indian pastries that he sold in the market. He said “when I just started things were not so fast. I started with just one item and now I have many things that people like. It is spicy and they like it.” Further probing questions revealed that the vendor felt that most of his consumers where either Indian or Caucasians.

Another reason given by participants for people changing taste is the fact that people are seeing more of these vegetables and other ethnic food being sold and are sometimes curious. They may be curious for several reason. Health was presented as one of the reasons or they simply just want to try.

ID 1 noted, *Yes consumers are changing what they eat, they may watch Dr OZ and something is said to be good and they seek it out, for health reason.*

ID 7 said; *Consumers are trying new vegetables. They see them in the supermarket and they want to try them. They are also more concerned with their health.*

*ID 9 stated, definitely the market is changing and now a lot of people talk about okra, even if they don’t eat it. A lot of different ethnic groups eat okra.*

4.1.10 Crossover marketing strategies

Crossover marketing strategies (CMS) are those designed to trigger ECV demand within the mainstream market. The participants unanimously indicated that various CMS need to be employed to prompt more Canadian consumers to eat more ECV. Promotional activities were advanced in order to increase awareness of the vegetables and their nutritional benefits to the consumers. Providing samples in its prepared state was noted to be an important element in the promotional strategy of the ECV and was cited by 54% of the participants. These respondents were comprised of vendors and producers.
ID 1, a vendor in the market stated that, *promotion and providing samples for return client is a good strategy.*

Another vendor ID 5, noted; *introducing it, giving samples for people to taste.*

ID 6 pointed to the fact that she had tried many ethnic vegetables but had not tried bitter gourd. She noted, “*I never had it since I don’t know how to cook it. I wouldn’t be sure what it should taste like.*” In pointing to a strategy to increase consumption of such ECV, ID 6 further stated;

*I think celebrity endorsement and recipes with the product and opportunity to sample are what I would suggest.*

Other promotional strategy suggested as mentioned above by ID 6 and also noted by ID 7 was the use of celebrity personnel in the promotion. ID 7 noted, “*If food is not presented to be elite then it will not become mainstream.*”

4.1.11 Information for better prices

Provision of information, in context, speaks to education of consumers and allowing them to make informed decision about paying more for locally grown ECV. A total of 91% of the respondents indicated that they believe consumers are willing to pay more for locally produced ECV. Those who said yes, chiefly noted that it was however going to be based on the knowledge of the consumers. Therefore how much information consumers have about a product will be a significant factor in the decision to pay a premium for locally produced vegetables over imported ones. ID 3, vendor, pointed to the fact that while each consumer is different, he found that consumers in the market, were usually willing to pay more if they have adequate information to make a decision on how they spend their money.
ID 6 noted, “People are willing to pay more for locally produced vegetables, if they are informed consumers.” ID 6 in mentioning information clarified it by explaining that consumers needed information relevant to health and nutritional attributes of vegetables.

Again pointing to the difference in consumer personality and requirements, ID 7 noted; Some will be based on education and information about a product, while some will pay more for specialty vegetables that may be categorised as ‘status foods’.

ID 11 noted in discussing willingness to pay more for specifically ECV; “I think consumers will pay more if they like it.” Additionally ID 11 further suggested that higher income will mean being able to afford a higher price.

ID 10 thought about the consumers’ willingness to pay more for locally produced vegetables was the only differing response from the other respondents. The response was based on an assumption about food miles in relation to price. ID 11 noted that, “because locally grown food does not have to travel as much, it should be cheaper and not more expensive.”

4.1.12 Capacity improvements requirements

The theme, capacity improvements, are those areas that have been identified for increased efforts for positive change to facilitate growth of the ECV sector. Participants in the interview were asked to give their opinion relevant to production of more ECV in Canada and their views as to whether or not the proper support was in place. 73% of total participants believed that the industry had the potential for further growth but it needed adequate support systems to facilitate the further growth. Some areas that were identified for improvements are greater access to land for production, further research and governmental support, material inputs and markets and marketing. In analysing the data two major areas emerged as requiring support namely marketing and infrastructure.
• **Markets & marketing**

The findings indicate that 36% of the interviewed participants point to marketing and finding markets as important areas to facilitate growth of the ECV subsector.

ID 4 noted, *there is a need for greater awareness among consumers about ethnic vegetables, as the option to sell is limited.*

ID 6 noted, *want to see more production in Canada and need to see a greater connection between the buyers and sellers, especially the smaller producers.*

A suggested strategy by ID 7 is to promote ECV as import substitution replacing all those ECV that are being brought into Canada from elsewhere with locally produced vegetables. It was however pointed out that all the requisite support needs to be in place for this to happen.

**Infrastructure support**

Based on the information provided below, infrastructural support may be a mix of support excluding markets and marketing. The participants identified these requirements as being integral to the growth of the ECV sub-sector, these include research, land and material, training and extension among other things. ID 7 noted that farmers’ mentality has to change if ECV production is to be done in a sustainable way.

ID 8, who is very involved in the promotion of ethnic foods, surprisingly did not see market access as an issue. What was however noted was that,

*not enough is being done. We need to see greater governmental and financial support, more research and experiments need to be done.*

*ID 5 noted, it is good to produce more but getting seeds into the country for production is an issue.*
The requirement of seeds among other infrastructural inputs was also pointed to by ID 9, who noted:

There is some growth in the production of ECV, but there is still a need for access to land, seeds and other material.

ID 10, in her comment on the issue, stated:

Chinese vegetables is a mature industry. Lots of work had gone into that. Calalloo, Vineland Research is working on that. OMAFRA has a speciality crop website. There is a need for greater production and fertiliser. So there are positives and negatives.

4.1.13 ECV intercultural acceptance

The acceptance of consuming ECV between the different ethnic groups is an area of interest that emerged from the analysis. The Guelph consumers in general are very adventurous and are open to new types of food. The analysis however found that the non-recent immigrants that were interviewed were less adventurous than the Canadian born individuals. All Canada born who were interviewed noted that their adventure level relevant to food on scale of 1(low) to 10(high) was either 9 or 10. For non-recent immigrant however, the score ranged from 6 to 10, though of course the sample was small.

The data additionally revealed that the non-recent immigrants were not very interested in trying vegetables outside of their core ethnic grouping. The finding indicates that intercultural acceptance of food between the core ethnic groups is very limited. ID 9 was the most adventurous of the non-recent immigrants interviewed. He noted that in addition to the North American vegetables and vegetables from his own ethnic group, he also consumed vegetables from other ethnic groups. This the participant attributed to his travels that facilitated greater exposure to different types of foods.
4.2 Focus group participants

The conducted focus groups were comprised only of Canadian born consumers in Guelph. The participants were all students at the graduate and undergraduate level, shown in table 4.3 below. This was done to allow for additional mainstream consumer perspective through their inputs on the subject of ECV crossover and acceptance in Canada.

Table 4.3 Focus group profile

<table>
<thead>
<tr>
<th>Focus Group</th>
<th>No. in Group</th>
<th>Gender</th>
<th>Ethnicity</th>
<th>Group’s Age Range</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Undergraduate</td>
<td>5</td>
<td>Male - 1 C</td>
<td>3 C 1 NC</td>
<td>20 – 24</td>
<td>U of G</td>
</tr>
<tr>
<td></td>
<td>Female - 4</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Graduate</td>
<td>8</td>
<td>Male - 4 C</td>
<td>3 C 1 NC</td>
<td>23 – 32</td>
<td>U of G</td>
</tr>
<tr>
<td></td>
<td>Female -4</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: Ethnicity – C = Caucasian; NC = Non-Caucasian

4.2.1 Focus group results

The focus groups allowed for an in-depth qualitative assessment of four areas that were very relevant to this study. The four areas explored were accessibility, knowledge and awareness willingness, and local production of ECV. They are discussed below.

4.2.2 Accessibility of ECV

Individuals were asked to indicate from the list of vegetables presented, which they have never seen in Guelph. While the respondents indicated they could access the vegetables that required, the analysis revealed that they had never seen 8 of the 12 named vegetables. What they had however seen more often were bok choy, okra, daikon radish and Chinese eggplant.

Several participants indicated that there is a problem with availability of these ECV in Guelph. It was therefore suggested that even if consumers wanted to buy them, they would not be consistently supplied in the supermarket and therefore some participants questioned the sense in
adapting to these vegetables when they are not consistently supplied or available. A participant noted;

There is an issue with ECV and local foods. You are not going to find them in the stores all the time. You will see spinach which you are used to and it’s always there, so why even bother to try something else when you are not always going to see it.

The mediocre quality of the available ECV was also something that emerged from the discussion. A focus group participant noted

Of the ECV that are available I don’t think that the quality of ECV are at the same standards as domestic or normal vegetables.

By normal vegetables she was pointing to those mainstream vegetables that are more available in the various markets and supermarkets.

4.2.3 Knowledge and awareness about ECV

The discussion revealed findings regarding the participants’ knowledge relevant to the identification of ECV. A list including 12 ECV were presented for their identification. The 12 ECV included bok choy, Chinese eggplant, okra, bitter melon, African eggplant, cassava, Chinese broccoli and daikon radish. These ECV were all examined by the survey instrument and will be discussed in further detail below in section 4.32 of the quantitative analysis. Additionally, callaloo/amaranth, ackee, choyate/chocho, breadfruit were also examined, these were associated with various ethnic groups. The inclusion of these additional four ECV allowed for a broader range of vegetables, in understanding the extent of the knowledge of the focus group participants.
From the 12 presented vegetables, 3 were identified by most participants in both groups. All participants were able to identify Chinese eggplant, 83% of participants were able to identify bok choy and okra was identified by 58%.

Outside of the named top three vegetables, only graduate students were able to identify any other vegetables. The graduates were collectively an older group and based on discussion were more exposed to other individuals of different ethnic backgrounds through work, school, travel and other forms of interactions. Some participants, as presented below, noted their experiences in relation to how they obtained information and greater knowledge about ECV.

One female graduate student stated:

“I had a roommate who was African, so I never had like cassava before that. So my biggest way was living with other students that I cook with and shared a kitchen.”

Another noted; “If I travel somewhere I might taste.”

And one more stated; “I only eat something new if I have it at a restaurant and I try it then I will try it again.”

A male graduate student said: “Being a part of a CSA I was exposed to new vegetables that I tried.”

In addition to the identification of ECV in their pictorial form, participants were given samples of three ECV prepared dishes, to assess their knowledge of ECV in its prepared format and were asked to identify the ECV contained in each dish. These dishes included fried ripe plantain, usually eaten by Afro-Caribbeans and is an accompanying dish and a popular Jamaican breakfast dish.

Based on my Jamaican heritage and culinary experiences the plantain procured at a supermarket in Guelph seemed to be immature and thus was not able to ripen properly. This
supports earlier observations regarding imported produce and inferior quality. The Chinese bok choy and okra, used by several ethnic groups were both stir-fried in vegetable oil. The bok choy was seasoned with tomatoes, garlic, onion, salt and pepper. The okra, similarly seasoned as the bok choy, had included in it, salted cod fish/salt fish, this is another popular Jamaican dish: “salt fish and okra”. A cassava cake, called bammy in Jamaica, was served to the graduate student focus group only, as there was no available supply of this value added cassava product in Guelph. Most participants were able to identify the plantain, bok choy and okra in their prepared state.

Participants were asked to rate the taste of each ECV dish on a scale of 1 to 10. All, but two undergraduate participants were able to identify okra which represented the best tasting dish at an average rankings of 8.60 and 8.25 for graduates and undergraduates respectively. Of the group presented with the prepared cassava cake only 13% were able to identify the contained ECV to be cassava. Importantly cassava was not significantly identified in the prepared state, by the group but it was however selected as the second most liked dish, with a taste ranking at an average of 7.6 among the graduate students.

Individuals pointed out that if they were knowledgeable about the product and other ECV and if someone introduces it to them in the first instance and they liked it, they would be willing to buy it in the future. One focus group participant noted her experience of being introduced to smooth amaranth/callaloo, “A Jamaican guy gave me callaloo at the farmers’ market one day. I asked him how to cook it? He said, I should cook it with onions and tomatoes. I said ok.” The farmers’ market mentioned by the participant was noted to be in Toronto and not the Guelph market.

Several other participants noted that information on how to prepare the vegetables are very important. One suggested as follows:
If the grocery store had an isle with ethnic vegetables and gave recipes with purchase and market it that way I think people would try it more. I think it goes back to creating knowledge and awareness among consumers.

Mostly female participants indicated some knowledge of how to prepare selected ECV. Those ECV that were named relevant to preparation knowledge were eggplant, bok choy, okra and callaloo. The preparation style most indicated was stir frying. This, based on observation, was largely because participants presumed the best means of preparing vegetable is to ‘just stir fry’ them.

4.2.4 Willingness to consume ECV

The findings suggest that graduate students were keener in their responses to try newly introduced ECV. Not only did these more mature students respond more positively but from their involvement in the discussion they, were also more open to finding out how to prepare the sampled ECV that were presented in the focus group. They asked for recipes and they were more interested in the topic in general. Based on the average rating of tasted samples and comments, the graduate students showed more mature taste buds and willingness to try new vegetables in the future.

Individuals indicated that bok choy, eggplant, okra and cassava were the top four vegetables that they would be most likely to consume from those that they were most familiar with. Table 4.4 below shows the result of both groups, as it relates to the percentage of each groups’ likelihood, to trying the noted vegetables.
Table 4.4 Percentage of group likely to try ECV

<table>
<thead>
<tr>
<th>Vegetable</th>
<th>Frequency</th>
<th>Graduate Frequency</th>
<th>Undergraduate Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bok choy</td>
<td>8</td>
<td>100%</td>
<td>4</td>
</tr>
<tr>
<td>Eggplant</td>
<td>4</td>
<td>50%</td>
<td>4</td>
</tr>
<tr>
<td>Okra</td>
<td>2</td>
<td>25%</td>
<td>2</td>
</tr>
<tr>
<td>Cassava</td>
<td>2</td>
<td>25%</td>
<td>0</td>
</tr>
</tbody>
</table>

Bok choy based on the percentage total of both groups, is the ECV that students would be most likely to consume in the future. The reason given was largely because it is the easiest to prepare and it was the one of greatest familiarity, essentially, they were more knowledgeable and aware about bok choy. Information and awareness is further discussed, as a factor that participants suggested to be of great importance in the decision to consume ECV.

One participant noted; “it is not very difficult to cook. You can over cook and under cook it and it still tastes good.”

Another noted that;

*Chinese restaurants are everywhere. They have restaurants everywhere in every country, so people are more aware of bok choy.*

The participants of the focus group like in the interviews were asked a direct question relevant to, factors that would cause them the try ECV. The factors that emerged are detailed below in table 4.5. The highlighted factors are those that were common between both groups and are further discussed.
As presented in table 4.5 above it is seen that several factors play a role in the decision of Guelph consumers’ willingness to try new ECV. Three common factors however resulted from the analysis, which are, information and awareness, affordability and being locally produced.

Having all the information about ECV in order to make a wholesome purchasing decision is assessed to be the most critical of the three factors for the consumers. Consumers want to know the benefits and understand how to prepare the vegetables. They have to be adequately exposed to and informed about ECV for them to buy it. This is a point of great importance and is important in understanding how consumers value awareness and knowledge in their consideration of purchasing ECVs. Participants noted the following:

“I think information for me is the most important thing. Knowing how to use it is important.”
Another noted, “I would love to buy these things, which I have done in the past. I’ve bought them and they would go bad, because I wouldn’t know what to do with them, I’ve seen things I wanted to buy, but I don’t know how to cook it.”

Another noted that the ECVs could be in the stores and because of the limited awareness she may not know. “They could be around and I wouldn’t even know.”

Another common factor emanating from both groups of student was the price factor. Individuals indicated that the vegetable had to be affordable and competitive with those vegetables that they are already accustomed to.

A graduate student participant noted, “if it is cheaper or of an equivalent price, I would substitute it for something I already eat.” Also, an undergraduate student noted that, “price is important. We have to consider that.”

Lastly, participants indicated that they would be more inclined to buy locally produced vegetables than imported ones. This they noted would also be relevant to locally produced ECV. One focus group participant indicated that while bok choy was a popular ECV, she did not buy it due to the language on the labels, which she could not understand, “I question where it’s from and so I question how safe the agricultural practices are.” Locally grown vegetables, are therefore viewed to be of better quality than those imported. One participant further stated his reason for not buying ECV and suggested that if they were locally produced the vegetables would be of better quality and that would be a factor that would prompt purchase. He noted:

I love growing okra, and eating it, but buying it in the store is like crap. There is a difference between freshly produced vegetables and those you know are in the store. They taste like they have flown a 1000 miles.
4.2.5. Local production of ECV

Presented with three scenarios related to - the local demand of ECV, the declining vegetable intake of Canadians and the increase level of food wastage in Canada. Participants were asked to give their thoughts about local production of ECV in Canada. The finding suggests that 100% of participants/consumers believe that some production of ECV should be done locally. This was largely attributed to the demand scenario that they were presented with. 100% of undergraduate students pointed to the demand as the rationale for producing ECV locally. While 75% of the graduates’ students attributed the production of ECV to the demand, others noted that increasing vegetable intake was the factor they considered.

One undergraduate participant noted;

*Assuming Canada has the ability to grow ECV, given the climate, reasonably and efficiently and the demand for ECVs exist in Canada, then economically it makes sense to grow them.*

A graduate student noted;

*Definitely, there is a significant demand and many locations across Canada’s diverse landscape can produce these vegetables. Diversification of production has the potential to meet consumers’ needs while diversifying planting rotations and marketing opportunities for Canadian farmers.*

Another graduate student noted;

*With a growing diversity in Canada, I can’t see any reason not to tap into this new market considering there is a clear market demand. People need to eat and all Canadians should be allowed to have such access to fresh culturally appropriate and locally grown vegetables.*
From the findings, it is seen that overall, participants mostly agree that if the demand for ECV can be satisfied completely or even partially satisfied through local production, economically, then this should be done.

4.3 Quantitative analysis

This section of the report presents information that was derived through scientific analysis of the raw data collected from the questionnaires that were previously administered. The analysis was directed by the research objective and sought to answer them in a quantitative way. The results of the analysis are presented below.

4.3.1 Descriptive statistics

Survey instrument were administered to 365 participants of the Guelph population. The respondents were comprised of 37.2% male and 62.8% female. A high of 72.2% of the participants indicated that they are the primary buyer of vegetables in their household. With chi square of 8.065 and a p value of .005, i.e. < .05, there is a significant relationship between gender and primary buyer of the household.

As seen in table 4.6 below additional descriptive statistical analysis relevant to age, number of years spent in Canada, number of people in the household and amount spent on ethnic vegetables are included. The mean and related standard deviation for age are 37.74 and 18.27 respectively. Likewise the mean number of years spent in Canada is 32.25 years and standard deviation is 18.55. The results of both variables have close spread.
Table 4. 6 *Descriptive statistics*

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>What year were you born? (Age)</td>
<td>37.74</td>
<td>18.27</td>
<td>336</td>
</tr>
<tr>
<td>How many years approximately have you been a resident of Canada?</td>
<td>32.25</td>
<td>18.55</td>
<td>349</td>
</tr>
<tr>
<td>How many people are currently living in your household?</td>
<td>3.10</td>
<td>1.84</td>
<td>356</td>
</tr>
<tr>
<td>Amount spent on other cultural groups vegetables / ethnic vegetables ($)</td>
<td>44.65</td>
<td>66.42</td>
<td>290</td>
</tr>
</tbody>
</table>

The data indicates that the household composition of participants was on average 3.1 with standard deviation of 1.84. The standard deviation that was identified to be furthest from the mean is that of amount spent on ethnic vegetables where there is a deviation of over $21 above the average amount spent of $44.65.

The median monthly household income of participant, calculated to equal to 3 which, based on ranking, represents the income category of $3001 to $4000, see detail in table 4.7 below. Also, shown below are the percentile of income categories. The results indicate that 50% of the respondents earn $4000 or less per month for household income. In addition 75% has a household income of $7000 and less, as such only 25% has household income of over $7001.

Table 4. 7 *Monthly household income*

<table>
<thead>
<tr>
<th>Income</th>
<th>Frequency</th>
<th>Percent</th>
<th>Percentile</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than $2000</td>
<td>75</td>
<td>23.1</td>
<td></td>
</tr>
<tr>
<td>$2001-3000</td>
<td>43</td>
<td>13.2</td>
<td>25</td>
</tr>
<tr>
<td>$3001-4000</td>
<td>54</td>
<td>16.6</td>
<td>50</td>
</tr>
<tr>
<td>$4001-5000</td>
<td>23</td>
<td>7.1</td>
<td></td>
</tr>
<tr>
<td>$5001-6000</td>
<td>28</td>
<td>8.6</td>
<td></td>
</tr>
<tr>
<td>$6001-7000</td>
<td>22</td>
<td>6.8</td>
<td>75</td>
</tr>
<tr>
<td>7001-8000</td>
<td>15</td>
<td>4.6</td>
<td></td>
</tr>
<tr>
<td>More than $8000</td>
<td>65</td>
<td>20.0</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>325</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>
The average age of participants was 37 years old and standard deviation was calculated to be 18 years old, see table 4.6 above. With such age information, it is not surprising that the mode for employment status is calculated to be the full-time category of employment. Ages within such categories are usually representative of individuals within the employable years. Table 4.8 below gives the frequencies of employment categories.

Table 4.8 Employment status of participants

<table>
<thead>
<tr>
<th>Employment Category</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Retired</td>
<td>57</td>
<td>16.1</td>
</tr>
<tr>
<td>Student</td>
<td>84</td>
<td>23.7</td>
</tr>
<tr>
<td>Unemployed</td>
<td>13</td>
<td>3.7</td>
</tr>
<tr>
<td>Full-time homemaker</td>
<td>7</td>
<td>2.0</td>
</tr>
<tr>
<td>Part-time employed</td>
<td>51</td>
<td>14.4</td>
</tr>
<tr>
<td>Full-time employed</td>
<td>142</td>
<td>40.1</td>
</tr>
<tr>
<td>Total</td>
<td>354</td>
<td>100.0</td>
</tr>
</tbody>
</table>

The research looks at the crossover effect of ethno-cultural vegetables, which is primarily focusing on the Canadian born population; accordingly, country of origin of the participants is a key variable to understand. This is important in order to be confident in the relevance of the data to the research. The participants were comprised of 77% Canadian born, 23% other countries. Other countries mentioned by the respondents were China, India, United States of America, Philippines, Italy, and United Kingdom among others. A frequency distribution chart of those born outside of Canada is presented below in figure 4.2.

For those participants not born in Canada, these individuals have spent an average of 52% of their lives in Canada. This calculation is relative to when the participants were born and the amount of time spent in Canada. This suggests that on average, respondents not born in
Canada have spent the greater portion of their lives in Canada. It is therefore reasonable to assume that these participants are in fact not recent immigrants. The finding is in line with finding of table 4.6 relevant to the close average calculation between age and number of years in Canada.

Figure 4.2 Shared percentage of other countries outside of Canada

*Note.* Each country is a percentage of the total of the 23% of the sample who were non-Canadian born.
4.3.2 Satisfaction level of non-recent immigrants with the quality and variety of available vegetables.

In determining the satisfaction level of non-recent immigrants with the quality and variety of vegetables now available to them the satisfaction with the seasonal supply of fresh vegetables in Guelph was firstly examined. The rating was on a scale from a low of 1 (not satisfied) to high of 10 (very satisfied). The median was calculated at rate 8 which is individually 28.9% of total ratings. Based on the calculation of the percentages at the median and above, 54.7% of the respondents are satisfied with the seasonal supply of vegetables at a rating of 8 and higher.

Frequencies and percentiles are shown below in table 4.9 for greater detail. Minimum and maximum ratings were 1 and 10 respectively. The satisfaction rating is represented from not satisfied to very satisfied. Twenty five percent of the respondents rated satisfaction at 6 or below. Thus 75% rated their satisfaction higher than 6.

Table 4.9 Satisfaction with seasonal supply of vegetables in Guelph

<table>
<thead>
<tr>
<th>Rate</th>
<th>Description</th>
<th>Frequency</th>
<th>Percent</th>
<th>Percentile</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 to 2</td>
<td>Not satisfied to 2</td>
<td>5</td>
<td>1.4</td>
<td>Minimum</td>
</tr>
<tr>
<td>3 to 4</td>
<td></td>
<td>16</td>
<td>4.5</td>
<td></td>
</tr>
<tr>
<td>5 to 6</td>
<td></td>
<td>73</td>
<td>20.3</td>
<td>25</td>
</tr>
<tr>
<td>7 to 8</td>
<td></td>
<td>173</td>
<td>48.1</td>
<td></td>
</tr>
<tr>
<td>9 to 10</td>
<td>9 to Very Satisfied</td>
<td>93</td>
<td>25.8</td>
<td>Maximum</td>
</tr>
</tbody>
</table>

| Total | 360 | 100 |

The information in the tables 4.9, suggests that individuals are satisfied with the seasonal supply of vegetables in Guelph. However, in assessing the respondents rating of satisfaction relevant to ECV specifically, it was found that only 35.1% of the total respondents noted a definitive yes to being satisfied with the quality of ECV supplied in the Guelph area.
In the Literature Review, availability was identified as a base on which satisfaction needed to be assessed. In order for there to be any satisfaction, that which is demanded has to be available for consumption in the first instance. It is on this basis that a Spearman correlation test was done to see if there was any truth to such arguments; the relationship between vegetable availability and the Guelph consumer’s satisfaction rating was tested. The results indicate a strong and positive correlation between both variables, ($R^2=0.646$, $n=360$, $p<0.01$), with this, we can infer that with greater availability there is a greater level of satisfaction.

4.3.3 Guelph consumer’s exposure and knowledgeable about ECV

In section 4.3.2 above, it is seen that consumers are not sufficiently satisfied with the available ECV in Guelph. The focus of this section therefore is an assessment of the knowledge and exposure of the Guelph consumer about ECV.

Participants were presented with colour photographs of eight vegetables in the survey, most of which they were unable to identify. Based on the findings, consumers show limited knowledge of ECV, as is presented in the figure below. While most respondents could identify bok choy and Chinese eggplant, they were largely unable to identify the other six that were presented.

Figure 4.3 Consumers knowledge of selected ethnic vegetables
Two binary logistic regressions were done to assess the variables that predict consumers’ knowledge about ECV. Chinese eggplant and bok choy were used in these regressions as dependent variables, because they are the most known of the vegetables as indicated in figure 4.3. A binary logistic regression is used to predict a categorical dichotomous dependent variable (Wuensch, 2014). Both the Chinese eggplant and bok choy were therefore dichotomous variable with coding of 1 for the ability to identify the coloured picture and 0 for not being able to identify the particular ECV.

The independent/predictor variables used in both regressions were the same to allow for consistency in the models. The variable included, gender and age, education with some key socio-demographic and behavioural variables such as being a vegetarian, planting one’s own vegetables, percentage of household income amount spent on food, being the primary household purchaser of vegetables and employment status. Not all variables were originally dichotomous and so these had to be recoded as dummy variables to facilitate the regression.

Table 4.10 *Binary logistic regression: Knowledge of ECV-Chinese eggplant*

<table>
<thead>
<tr>
<th>Variables in the Equation</th>
<th>B</th>
<th>S.E.</th>
<th>Wald</th>
<th>Df</th>
<th>Sig.</th>
<th>Exp(B)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>.847</td>
<td>.371</td>
<td>5.221</td>
<td>1</td>
<td>.022</td>
<td>2.332</td>
</tr>
<tr>
<td>Age</td>
<td>-.025</td>
<td>.010</td>
<td>6.781</td>
<td>1</td>
<td>.009</td>
<td>.976</td>
</tr>
<tr>
<td>University graduate</td>
<td>.557</td>
<td>.375</td>
<td>2.205</td>
<td>1</td>
<td>.138</td>
<td>1.746</td>
</tr>
<tr>
<td>Full time employed</td>
<td>-.332</td>
<td>.369</td>
<td>.809</td>
<td>1</td>
<td>.368</td>
<td>.717</td>
</tr>
<tr>
<td>Vegetarian</td>
<td>-.298</td>
<td>.810</td>
<td>.136</td>
<td>1</td>
<td>.713</td>
<td>.742</td>
</tr>
<tr>
<td><strong>Plant own vegetable</strong></td>
<td><strong>1.271</strong></td>
<td><strong>.415</strong></td>
<td><strong>9.353</strong></td>
<td><strong>1</strong></td>
<td><strong>.002</strong></td>
<td><strong>3.563</strong></td>
</tr>
<tr>
<td>Vegetable purchase more than once a week</td>
<td>-.111</td>
<td>.369</td>
<td>.090</td>
<td>1</td>
<td>.764</td>
<td>.895</td>
</tr>
<tr>
<td>Primary purchaser of vegetable</td>
<td>-.161</td>
<td>.434</td>
<td>.138</td>
<td>1</td>
<td>.710</td>
<td>.851</td>
</tr>
<tr>
<td>Spend 21% or more of income on food</td>
<td>.131</td>
<td>.413</td>
<td>.101</td>
<td>1</td>
<td>.751</td>
<td>1.140</td>
</tr>
<tr>
<td>Constant</td>
<td>1.954</td>
<td>.544</td>
<td>12.896</td>
<td>1</td>
<td>.000</td>
<td>7.059</td>
</tr>
</tbody>
</table>

Note: Nagelkerke $R^2 = 0.137$
As seen in table 4.10 above that gender, age and growing vegetables for one’s own consumption were the predictors of knowledge about Chinese eggplant, which is the most known ECV based on findings presented in figure 4.3. The p value of gender is .022. The Exp(B) for gender was 2.332. This means that females were 2.332 more likely to know about Chinese eggplant than males. This interpretation is based on how the data was coded as males were coded as 0.

Age has a significant p value of .009 and Exp(B) was .976, the negative B value represents a percentage decrease in knowledge with an increase in age. According to Pullock (2011) an odds ratio, represented as the Exp(B) value, in table 4.10 above, tells what the per unit change in the dependent variable is relative to per a unit change of an independent variable. The formula for calculating the percentage change in odds is calculated by subtracting 1 from the Exp(B) value. The calculated percentage change in odds for age resulted in a 2.4% decrease in knowledge about Chinese eggplant with each additional year of age. The calculation is shown below:

Calculation: (.976 - 1) x 100 = 2.4%

The p value of .002 was calculated for individuals who plant their own vegetables for consumption. With a Exp(B) being 3.363, this suggest that individuals who plant some of their own vegetables are 3.363 times more likely to be aware of Chinese eggplant and able to identify same.
Table 4.11 **Binary logistic regression: Knowledge of ECV - bok choy**

<table>
<thead>
<tr>
<th>Variables in the Equation</th>
<th>B</th>
<th>S.E.</th>
<th>Wald</th>
<th>Df</th>
<th>Sig.</th>
<th>Exp(B)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>.377</td>
<td>.253</td>
<td>2.219</td>
<td>1</td>
<td>.136</td>
<td>1.458</td>
</tr>
<tr>
<td>Age</td>
<td>-.007</td>
<td>.007</td>
<td>1.107</td>
<td>1</td>
<td>.293</td>
<td>.993</td>
</tr>
<tr>
<td>University graduate</td>
<td>.012</td>
<td>.256</td>
<td>.002</td>
<td>1</td>
<td>.963</td>
<td>1.012</td>
</tr>
<tr>
<td>Full time employed</td>
<td>.081</td>
<td>.258</td>
<td>.099</td>
<td>1</td>
<td>.752</td>
<td>1.085</td>
</tr>
<tr>
<td>Vegetarian</td>
<td>.829</td>
<td>.550</td>
<td>2.273</td>
<td>1</td>
<td>.132</td>
<td>2.292</td>
</tr>
<tr>
<td><strong>Plant own vegetable</strong></td>
<td>.490</td>
<td>.247</td>
<td><strong>3.925</strong></td>
<td>1</td>
<td><strong>.048</strong></td>
<td><strong>1.632</strong></td>
</tr>
<tr>
<td>Vegetable purchase more than once a week</td>
<td>.351</td>
<td>.250</td>
<td>1.963</td>
<td>1</td>
<td>.161</td>
<td>1.420</td>
</tr>
<tr>
<td><strong>Primary purchaser of vegetable</strong></td>
<td>.727</td>
<td>.289</td>
<td><strong>6.329</strong></td>
<td>1</td>
<td><strong>.012</strong></td>
<td><strong>2.068</strong></td>
</tr>
<tr>
<td>Spend 21% or more of income on vegetable</td>
<td>-.205</td>
<td>.280</td>
<td>.534</td>
<td>1</td>
<td>.465</td>
<td>.815</td>
</tr>
<tr>
<td>Constant</td>
<td>-.658</td>
<td>.377</td>
<td>3.057</td>
<td>1</td>
<td>.080</td>
<td>.518</td>
</tr>
</tbody>
</table>

Note: Nagelkerke $R^2 = 0.096$

Table 4.11 has the binary logistic regression results for knowledge predictors of respondents who knew and could identify bok choy from the pictorial representation presented to them. Significant predictor variables relevant to the identification of bok choy resulting from the model includes planting of own vegetables with p value of .048, primary vegetable purchaser in the household with a p value of .012.

Planters of their own vegetables with an Exp (B) for calculated at 1.632. This means that vegetable planters are 1.632 more likely to know about bok choy over those who are not growers of any of their own vegetables. Where individuals are primary vegetable purchasers in the household based on the Exp(B) it is interpreted that these individuals are 2.068 times more likely to identify bok choy over those who are not the primary purchasers.

Based on both regressions it is seen that the common significant predictor of knowledge for both bok choy and Chinese eggplant is planting their own vegetables. The Exp(B) for both, when compared, suggest however that producers of their own vegetables are more aware of Chinese eggplant over bok choy.
4.3.4 Factors that influence the demand for ECV by the Guelph consumers

The Literature Review indicated that there are several factors that may impact consumers’ decisions to buy ECV, including quality and freshness, health benefits, traceability and several others as indicted by Adekunle et al (2011, 2012, 2013). In identifying the factors that influence the demand for ECVs among Guelph consumers a binary logistic regression was used to first analyse responses to the following direct question asked in the survey.

“Do you consume any vegetable not typically associated with your ethnic or cultural group?”

Response to the question was one of three options, yes, no, sometimes. A dummy variable was created and used as the independent variable. Yes and sometimes were grouped and coded as 1 and No coded as 0. The independent/explanatory variables used in the regression were inclusive of factors other than price, which were presented by participants as being those that influence their decisions to purchase vegetables. The factors included in the regression are quality, freshness, taste, local and appearances.

Below in table 4.12 is the result of the binary regression that was conducted for understanding the factors associated with purchase decision. Highlighted in the model are freshness and local. Based on the model these are the two predictors influencing why the respondents indicated that they consume vegetables outside of their own ethnic background.

Table 4.12 Binary logistic regression: ECV purchasing factors

<table>
<thead>
<tr>
<th>Variables in the Equation</th>
<th>B</th>
<th>Wald</th>
<th>df</th>
<th>Sig.</th>
<th>Exp(B)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Freshness</td>
<td>0.878</td>
<td>9.564</td>
<td>1</td>
<td>0.002</td>
<td>2.406</td>
</tr>
<tr>
<td>Quality</td>
<td>-0.211</td>
<td>0.461</td>
<td>1</td>
<td>0.497</td>
<td>0.81</td>
</tr>
<tr>
<td>Taste</td>
<td>0.035</td>
<td>0.008</td>
<td>1</td>
<td>0.929</td>
<td>1.036</td>
</tr>
<tr>
<td>Local</td>
<td>1.025</td>
<td>6.525</td>
<td>1</td>
<td>0.011</td>
<td>2.788</td>
</tr>
<tr>
<td>Appearance</td>
<td>0.229</td>
<td>0.428</td>
<td>1</td>
<td>0.513</td>
<td>1.258</td>
</tr>
<tr>
<td>Constant</td>
<td>0.283</td>
<td>1.213</td>
<td>1</td>
<td>0.271</td>
<td>1.327</td>
</tr>
</tbody>
</table>

Note: Nagelkerke $R^2 = 0.085$
From interpretation of the Exp(B) value of the highlighted significant variables in table 4.12 above, freshness and produced locally are respectively 2.406 and 2.788. Both Exp(B) are greater than 1 and are therefore representative of positive relationships with the dependent variable. Additionally, the odds of consumers increasing consumption of ECV is 2.406 times more likely when they are provided with fresher ECV. Consumers are also 2.788 times more likely to consume locally produced ECV over those that are not produced locally.

4.3.5 **Guelph consumers’ willingness to consume ECV if grown locally**

As indicated by the results of binary logistic regression and qualitative analysis regarding factors associated with making decision to purchase vegetables and ECV. Vegetables being locally produced was found to be a key factor considered by consumers in buying.

Additionally, a total of 84.1% of participants indicated that they were more willing to buy ethnic vegetables if they were produced locally. In relation to the positive responses, only a minimal percentage indicated they were less willing and indifferent, 1.7% and 14.2% respectively.

With this finding, further analysis was done. Chi square was used to assess whether there was any association with the willingness to pay more if ECV are produced locally. The relationship with gender and both variables were also tested. To ensure that the cell expected count requirement was met for using the results of the chi square test, the original three responses (more willing, less willing and indifferent) were recoded. Less willing to buy and indifferent were merged into one group, separate from those who indicated that they were more willing to buy. The recoded variable was used for both relevant test below in table 4.13.
Table 4.13  *Chi square results: Willingness to pay more, locally produced and gender*

<table>
<thead>
<tr>
<th>Variable</th>
<th>Results</th>
<th>Value</th>
<th>Df</th>
<th>Asymp. Sig. (2-sided)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Willing to buy ECV if grown locally and Paying more for local over imported ECV</td>
<td>Pearson Chi-Square</td>
<td>41.341</td>
<td>2</td>
<td>.000</td>
</tr>
<tr>
<td>Gender and Willingness to buy ECV if grown locally</td>
<td>Pearson Chi-Square</td>
<td>10.649</td>
<td>1</td>
<td>.001</td>
</tr>
<tr>
<td>Gender and Willingness to pay more for local over imported ECV</td>
<td>Pearson Chi-Square</td>
<td>7.072</td>
<td>2</td>
<td>.029</td>
</tr>
</tbody>
</table>

The Chi square test between willingness to buy locally grown ECV and paying more for local ECV, resulted in a *p* value of .000. There is therefore a positive relationship between both variables, the results is suggesting that those who indicated that they would be more willing to buy if ECV if produced locally are also willing to pay more for locally produced ECV.

The Chi square test also indicated a significant correlation between gender and willingness to buy ECV if locally produced, with the *p* value of .001. Females were also more inclined than male to buy ECV if produced locally. This is suggested through comparison of the actual frequencies for each actual response relevant to the associated expected count. Females had an actual count of 195 more than the expected count of 184.3, in response to more willing to buy ECV if locally produced. The degree of freedom for this test was calculated to be 1, since the variables used each had two responses. The other two test included 2 x 3 matrices and the degrees of freedom therefore was calculated to be to 2.
A significant relationship was found between gender and willingness to pay more for locally produced ECV over imported ones with an associated p value of .029. Females responded yes to willingness to pay more for locally produced ECV resulted in an actual count of 148 greater than the expected count of 143.

4.3.6 Segment of the population most willing to explore and consume ECV.

Since the research goal is to assess the crossover of ECV among the mainstream consumers it is only pertinent that the segment of the population that would be most willing to explore and consume ECV is examined. This is especially true based on the previously presented objectives and their associated findings about the acceptance of ECV in Guelph and, by extension, Canada. To understand this through quantitative assessment, a binary logistic regression was conducted with the survey responses.

The regression includes as its dependent variable the question, *would you be willing to buy ethnic vegetables if they are recently introduced in the market?* The responses to the question had to be recoded and a dummy variable created for the purpose of carrying out the regression, since it originally was an ordinal variable. Previous responses, less willing, indifferent and more willing, were recoded with more willing coded as 1 and less willing and indifferent coded as 0. The independent predictor variables used in the regression are included and outlined in table 4.14 below. Dummy variables for several of the variables inclusive of income and adventurous level had to be created to be included in the model. Income originally had eight levels of response. The created dummy had two categories. Income $4000 and under was coded as 1 and above $4001, coded as 0. The Guelph consumer adventure level relating to willingness to try new vegetables originally had ten response levels, from1 to 10 respectively moving from not adventurous to very
adventurous. With 10 being very adventurous, the dummy variable coded very adventurous as 1 and all other ratings below being very adventurous as 0.

Table 4.14 *Segment most willing to try newly introduced ECV*

<table>
<thead>
<tr>
<th>Variables in the Equation</th>
<th>B</th>
<th>S.E.</th>
<th>Wald</th>
<th>df</th>
<th>Sig.</th>
<th>Exp(B)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>.039</td>
<td>.274</td>
<td>.021</td>
<td>1</td>
<td>.886</td>
<td>1.040</td>
</tr>
<tr>
<td>Age</td>
<td><strong>.029</strong></td>
<td><strong>.008</strong></td>
<td><strong>13.390</strong></td>
<td>1</td>
<td><strong>.000</strong></td>
<td><strong>1.029</strong></td>
</tr>
<tr>
<td>University Graduate</td>
<td>.092</td>
<td>.280</td>
<td>.108</td>
<td>1</td>
<td>.742</td>
<td>1.096</td>
</tr>
<tr>
<td>Full time Employed</td>
<td>.010</td>
<td>.278</td>
<td>.001</td>
<td>1</td>
<td>.970</td>
<td>1.010</td>
</tr>
<tr>
<td>Full time Home</td>
<td>2.166</td>
<td>1.200</td>
<td>3.257</td>
<td>1</td>
<td>.071</td>
<td>8.727</td>
</tr>
<tr>
<td>Income 4000 and below</td>
<td>-.186</td>
<td>.267</td>
<td>.486</td>
<td>1</td>
<td>.486</td>
<td>.830</td>
</tr>
<tr>
<td>Number of people in household</td>
<td><strong>.213</strong></td>
<td><strong>.090</strong></td>
<td><strong>5.567</strong></td>
<td>1</td>
<td><strong>.018</strong></td>
<td><strong>1.237</strong></td>
</tr>
<tr>
<td>Farmers market shopper</td>
<td>.192</td>
<td>.282</td>
<td>.464</td>
<td>1</td>
<td>.496</td>
<td>1.212</td>
</tr>
<tr>
<td>Supermarket shopper</td>
<td>-.073</td>
<td>.592</td>
<td>.015</td>
<td>1</td>
<td>.902</td>
<td>.930</td>
</tr>
<tr>
<td>Ethnic store shopper</td>
<td><strong>.888</strong></td>
<td><strong>.382</strong></td>
<td><strong>5.394</strong></td>
<td>1</td>
<td><strong>.020</strong></td>
<td><strong>2.431</strong></td>
</tr>
<tr>
<td>Very adventurous consumers</td>
<td><strong>.936</strong></td>
<td><strong>.276</strong></td>
<td><strong>11.532</strong></td>
<td>1</td>
<td><strong>.001</strong></td>
<td><strong>2.550</strong></td>
</tr>
<tr>
<td>Constant</td>
<td>-2.700</td>
<td>.877</td>
<td>9.482</td>
<td>1</td>
<td>.002</td>
<td>.067</td>
</tr>
</tbody>
</table>

Note: Nagelkerke $R^2 = 0.195$

Significant predictor variables of the model are highlighted in table 4.14 above, these are variables with a p value less than .05. They are discussed below:

- **Age** - The Exp (B) value calculated indicates that as people gets older they are 1.029 more likely to try newly introduced ECV.

- **Number of people in household** - The results suggest a positive relationship. The odds of individuals trying newly introduced vegetables are greater and increase by 1.037 times with each additional member in the household.

- **Ethnic store shopper** – The results suggest that ethnic shoppers are more likely to try new ECV. Exp (B) is calculated at 2.431, therefore ethnic store shoppers are 2.431 times more willing to buy newly introduced ECV than other shoppers.
• Very adventurous consumers – Those most willing to try new ECV. In terms of percentage very adventurous consumers are 155% more likely to try new ECV than those less adventurous.

4.4 Summary

Below in figure 4.4, is a summary presentation of the findings that have been discussed earlier in the chapter. It is organised based on the objective which guided the research and is presented accordingly. Findings relevant to each data collection instrument are presented separately and then in relation to each other. These related findings are among others that will be further assessed in the coming discussion chapter.
<table>
<thead>
<tr>
<th>Data Type</th>
<th>Data Collection Methods</th>
<th>Research Objectives</th>
</tr>
</thead>
<tbody>
<tr>
<td>Qualitative</td>
<td>Interviews</td>
<td>1. Satisfaction level with vegetables available</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2. Knowledge and Awareness about ECV</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3. Factors that influence the demand for ECV</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4. Willingness to consume ECV if grown locally</td>
</tr>
<tr>
<td></td>
<td></td>
<td>5. Segment of the population most willing to try ECV</td>
</tr>
<tr>
<td></td>
<td>Vegetable availability</td>
<td>Acculturation - Canadian are seeing more ECV, and are willing to try.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Local production and consumption - Vegetables grown for personal consumption</td>
</tr>
<tr>
<td></td>
<td></td>
<td>are largely not ECV. Ethnic producer are more experienced and are exposed to ECV.</td>
</tr>
<tr>
<td></td>
<td>ECV satisfaction and</td>
<td>Consumer changing taste - Consumers are trying new foods with bigger flavour profiles.</td>
</tr>
<tr>
<td></td>
<td>quality</td>
<td>Distribution of ECV - ECV not sufficiently distributed in Guelph</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Crossover marketing strategies - Promotional activities and providing samples</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Information for better price - Consumers willing to pay more if they are provided with information.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Capacity improvement requirement - Markets and marketing - Infrastructure support</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ECV intercultural acceptance - Born Canadians willing to try ECV, while ethnic consumers unwilling to try unfamiliar ECV. The ethnic consumer are less willing to try ECV outside of their core group, when compared to consumers born in Canada.</td>
</tr>
<tr>
<td>Focus Group</td>
<td>Accessibility – Eight of twelve vegetables presented in pictorial form were noted to have never been seen in the market. Respondent agree that if it’s not available it cannot be bought.</td>
<td>Knowledge – Chinese eggplant, bok choy and okra in that order are the most known ECV among the participants. Individuals indicated that if they knew more about ECV they would be more willing to purchase.</td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>Quantitative Questionnaires</td>
<td>Consumers are satisfied with the availability of vegetable in Guelph but not similarly satisfied with ECV that is available.</td>
<td>Chinese eggplant and bok choy are the most known ECV among consumers. A common factor about these consumer, is that they usually plant some of their own vegetables.</td>
</tr>
</tbody>
</table>
**Major Related Findings Between Methods**

| Mixed Method | ✓ ECV not adequately available in Guelph. | ✓ Chinese eggplant, bok choy and okra are the most known ECV. ✓ People who plant their own vegetables are more aware of ECV. | Common purchasing factors are: ✓ Freshly provided, ✓ Locally grown and ✓ Product information communicated. | ✓ Local ECV production is important to Canada based on demand and economics. ✓ Capacity needs to be improved to facilitate increased local production. | ✓ Adventurous Canadians |

Figure 4.4 *Findings Summary*
Chapter 5

Discussion

5.0. Introduction

This research examined the position of the mainstream consumers in Guelph and their level of crossover acceptance of ECV. In this chapter the findings of the research as presented in chapter 3, will be further discussed. The relationship or lack thereof, between the qualitative and quantitative findings will form most of the discussion. Where further insights were necessary, references were made to other previously reviewed research. The discussion is kept consistent with previous chapters and therefore will be grounded on the 5 research objectives.

5.1. ECV Satisfaction: Availability and quality

In assessing satisfaction of the Guelph consumers several related findings presented themselves both in the qualitative and quantitative analysis. These findings relate broadly to ECV quality and availability and its impact on consumers satisfaction relative to mainstream vegetables.

The quantitative results, in section 4.3.2, indicate that the satisfaction of the mainstream consumers with mainstream vegetables is at a higher level when compared to satisfaction with available ECV. This finding is supported by the qualitative findings of the research. Several other research projects indicate that consumers are dissatisfied with the quality and availability of ECV in Canada.
5.1.1 Availability

Research by Kajumba (2012) indicates that in Guelph the mainstream supermarkets, the primary point of purchase by consumers ethnic and otherwise, had a variety of vegetable assortment which was increasing. The assortment included some ECV, however the stock was not only limited but was not consistently guaranteed. Availability was also presented by Filson et al. (2011) in examining the South Asian group, it was noted, “the issue of availability and selection is very important. Many respondents indicated that they had some difficulty in procuring certain vegetables from their regular supermarket or grocery store” (pg 9).

Availability of vegetables based on statistical tests presented in chapter 4, indicate that availability is significantly related to satisfaction levels of consumers, increased availability results in increased satiation. What this finding suggests is that where ECV availability is lacking, consumers are not going to be satisfied.

Adekunle et al. (2011) in the examination of Afro Caribbean Canadian satisfaction with available ECV, indicated that ECV consumption by this ethnic group is affected by the level of availability of ECV. It was found that ethnic consumers when they are unable to find the ECV they require they proceed with purchasing mainstream vegetables that can be used as substitutes, such as using spinach in place of amaranth. In this research, this finding was also a consideration of Canadian born and came to the fore in the focus group discussion on the topic of ECV accessibility, where it was pointed out that consumers may be unwilling to include ECV in their shopping baskets since they expect that they are not going to be consistently supplied with such ECV.

The topic of availability is closely linked to the qualitative theme - distribution of ECV, presented in section 4.1.5. The findings relevant to distribution, suggest that there are not
sufficient distribution points in Guelph, therefore those who do not go to more diverse cities such as those in the GTA, will have to make do with the mainstream vegetables that are available to them in Guelph. There are however, gradual increase of ECV in Guelph ethnic stores and supermarkets but there is still room for further growth.

The matter of availability is an important aspect of achieving ECV crossover within the Guelph locale. Based on the evidence it is a key consideration of both Canadian born and non-recent immigrants in their decision to purchase ECV. Where a vegetable is not available it will not be consumed and will impede the crossover potential within the Guelph area.

5.1.2 Quality

The findings suggest that consumers posit that not only are many ECV unavailable but what is available is of a lesser quality than required. Quality was also found to be an important factor impacting satisfaction, as presented in sections 4.1.4 and 4.3.2. This finding is supported by Kajumba (2012) in the examination of the Guelph food retail markets. Kajumba identified quality as a consistent challenge among suppliers. This challenge was attributed to the distance the vegetables travel, since they are usually largely imported from other countries. Since Kajumba found that suppliers have an issue with quality available for sale, accordingly, consumers too would be challenged in finding quality ECV for purchase in Guelph.

We can deduce from this that inconsistency of supply of quality ECV is a significant issue in Guelph for consumers, that needs to be addressed if consumers are to be satisfied. Ethnic consumers will first need to be better satisfied with availability and quality requirement before this can be translated into the wider market for ECV crossover to be at all realised.
5.2 ECV knowledge and awareness of Guelph consumers

Knowledge and awareness were found to be very significant themes throughout the analysis of the data and is consistent with previous researches. Knowledge emerged as a critical factor both for purchasing and willingness to pay more for ECV. It was pointed out by participants that for one to make a purchase of an ECV they must first know something about the vegetable, information about the nutritional value, the taste and how it is prepared.

According to Kajumba (2012) in examining Guelph retail market, knowledge was found to be important for the growth of the ECV market as it relates not only to consumers but also for the retailers, who are supplying the consumer. It was noted that, “Lack of appropriate knowledge about ECV has also been a challenge in this market. Knowledge and information about the ECV market has been a crucial point in the running of this market. It is important to know what the people want and what they can afford” (pg 19).

Gender and age are two significant predictors of knowledge about ECV, based on the research findings presented in table 4.10, which identifies predictors of knowledge about Chinese eggplant which was the most popular/identified ECV of the research. The focus group discussion also found gender and age to be predictors of knowledge. Based on their arguments and involvement in the discussion and actual responses observed, females knew more than their male counterparts. Females were more knowledgeable about how to prepare some of the ECV identified and shared more about their experiences of being introduced to ECV.

While the binary regression presented in chapter 4 that the relationship between age and knowledge of Chinese eggplant was a negative one, meaning the older one gets, the less knowledge they have about this particular ECV, it is important to point out that age was however positively related willingness to try ECV. Therefore, the finding implies that while knowledge
about ECV decreases with age the willingness to try ECV increases. It is important to refer to section 2.2.4 of the literature review where it points out that ECV introduction into the market can be considered as a new trend. Since younger people are those who usually follow new trends, this may be a reason why younger individuals are more likely to be knowledgeable about ECV.

Additionally, there are several sociological research such as Mather and Carstensen (2005) they suggest that “cognitive control declines with age”. People consume most of their knowledge in earlier than later years (pg. 496). This might explain why the results indicate that the receiving of knowledge about ECV decreases with age. It may also be the reason why older people are more willing to try newly introduced vegetables, since older individuals would have already consumed enough knowledge on which to base their purchasing decisions on.

Additionally, based on the Heart and Stroke Association (2013), older people are more concerned with what they eat and so they usually choose healthier foods such as fruits and vegetables as oppose to younger individuals. It is therefore still very important to provide information to individuals when they are younger and more accepting of the information that is provided.

The focus group finding however suggests differently than that of the regression results. The older aged group/graduate students were more knowledgeable about ECV, than the undergraduate group. This however may be attributed to the fact that the age range between both groups were not significantly different and are largely from the same generation. The knowledge of the graduates over the undergraduates can also be attributed to their level of exposure through travel and greater socialisation with immigrants. Furthermore, graduate students were more open to trying new vegetables. It can be therefore concluded that knowledge while acquired differently throughout one’s lifetime is a factor that is a key determinant in achieving ECV crossover.
Additionally, in answering why females based on the qualitative findings, may have been more knowledgeable about ECV, this may be attributed to the fact that females of European descent are usually the primary purchaser of food in the household. Additionally, being a primary purchaser was also found to be a predictor of the results of the binary regression done for bok choy. It makes sense therefore that since females are usually the household shoppers, at the point of distribution, they would likely be more exposed and knowledgeable about what is available.

The fact that people who grew their own vegetables were more knowledgeable about ECV, with reference to both binary regressions for Chinese eggplant and bok choy as presented in section 4.3.3. The predictor can be considered the most significant finding emanating from the quantitative analysis of this particular objective, since it was a similar predictor of both vegetables. This finding is supported by the qualitative assessment, as 91% of the participants interviewed indicated they were not only growers of some of the vegetables that they consume but were likewise consumers of some ECV and so they had some knowledge about ECV.

Nawaratne’s (2012) research found that Chinese vegetables, inclusive of Chinese eggplant and bok choy have the longest and most successful cultivation history in Canada. It was noted that varieties of ECV now in Ontario were introduced to Canada between 40 to 50 years ago. One participant, a U of G Plant Agriculture Department professor, affiliated with the Muck Research Station at the Holland Marsh, who is conducting technical research on production of such vegetables, also said the same thing. Nawaratne’s (2012) finding gives clarity as to why Chinese eggplant and bok choy were the two most identifiable ECV by Guelph consumers over other vegetables which they were presented with to identify such as cassava and African eggplant, which are classified as Afro-Caribbean vegetables. Participants interviewed are largely
of the opinion that broccoli and bok choy were equally positioned within the mainstream market. The U of G professor also felt that Chinese vegetables were the closest to mainstream of all of the ECV.

Additionally, the fact that focus group participants ranked broccoli and bok choy equally popular, might also be the reason behind why the least identifiable vegetable of the 8 presented to participants in the survey was Chinese broccoli. Since mainstream broccoli is so established within the market, consumers associate broccoli with having a particular look and the Chinese broccoli doesn’t look as familiar.

While Chinese vegetables are gaining popularity within the mainstream market, there are other ECV that consumers need to be more knowledgeable about. Adekunle et al. (2011) suggested that the Afro Caribbean group in the GTA also has a high ECV consumption level. Additionally, it was indicated by the group that advertising is an important component in expanding the demand for ECV. It was noted that:

Respondents also asserted that publicity would help to create demand for the availability of their preferred vegetables and to communicate the benefits of consuming these ethno cultural foods. The role of advertising and marketing of ethno- cultural foods was deemed relevant by 62% of our respondents (pg 306).

Based on the acculturation theme presented in section 4.1.6 and referring to Adekunle et al. (2011) finding, it may be proffered that while Canadian born consumers are being acculturated to ECV, greater publicity could help with increased knowledge and the acceptance and crossover of ECV within this market.
5.3 Purchasing Factors

Knowledge is an important aspect of ECV crossover and must be factored in the growth of this market. The significance of knowledge and providing information is also found to be purchasing factor. Individuals noted that they would be willing to buy bok choy because it was the easiest to prepare. Therefore having the requisite know how and information improves the willingness to try particular ECV.

There are several other relevant factors that were identified in chapter 4. These factors include freshness, quality, taste, appearance, affordability, access, nutritional value, information and being locally produced. The fact that several factors have been identified in this research, is consistent with the finding of Adekunle et al. (2013) who found that for Chinese there were likewise several factors of importance in their decision to purchase ECV, this is noted below. “Quality, traceable production, versatility and language were the four factors that underlie consumers’ decisions to purchase ethnic vegetables” (pg 661).

Freshness and being locally produced were identified as significant predictors for purchasing ECV among Canadians. Freshness was also identified by Adekunle (2011) to be the factor of most significance to the Afro-Caribbean market. This indicates that this factor, freshness, is important to most consumers regardless of their background. Freshness, identified as synonymous with quality was also identified by Adekunle (2013) as a key factor within the South Asian group, the largest ethnic population in the GTA, in their decision where to purchase vegetables. The relationship between freshness and quality may be similar to how the research participants viewed these two factors, as being essentially the same. This probably is the reason why quality (table 4.12) was not a significant predictor for vegetable purchase.
Quality based on the participants of the focus group discussion was understood to be an all-encompassing factor, that was inclusive of freshness and how the vegetables look and feel. The qualitative findings based on the discussions in section 5.1.2, relevant to ECV quality, presented the quality of ECV as an important factor for achieving consumer satisfaction. Thus quality is also an important purchasing factor. Vegetables being locally produced is also a significant factor based on results of binary logistics presented in table 4.12 and in the qualitative analysis to be a purchasing factor. This was however directly linked to the perception of participants that local meant better quality than imported vegetables.

This claim by the participants was also presented by Perkin and Walker (2011). It is argued that such imports take away from the freshness of ECV that is supplied to the market. They pointed out that, “Vegetables grown outside of the country are unable to be packaged, processed, and shipped quickly enough to be able to obtain the same level of freshness” (pg 8).

Consumers, as previously mentioned, indicated that if they had information they would be more willing to try ECV and so the crossover strategies that were identified in the data analysis points primarily to promotion and providing samples. These are similar to the strategies presented by Denker (2007) in his reflection on broccoli being integrated into the market. Promotion, providing samples and branding were also major factors that contributed to broccoli’s crossover.

**Value Added/Prepared foods**

Value addition, while it did not present itself as a clear theme, was mentioned in the interviews by the vendors and appeared as a significant finding in the ECV sampling session. The topic also came to the fore in the literature review. It was indicated that convenience offered
through value added products is not only a trend but is a factor that determines whether or not some consumers buy some products.

Three of the five vendors interviewed indicated that they sold prepared foods, of which some included ECV. They indicated that their products were big sellers amongst a wide range of Canadian consumers of European descent. In addition to that it is important to point out that the second most liked dish based on the sampling of ECV provided to graduates was the cassava cake/bammy which was the least known ECV.

The qualitative assessment, as previously discussed, found that knowledge and information are important factors of consideration for achieving growth in the ECV market. Individuals pointed out that knowing how to prepare an ECV was an important factor for trying new vegetables. While the ambition of individuals to learn how to cook and prepare ECV and other foods were not assessed, it can be deduced from all the information and knowledge about people that not all will learn or want to learn how to prepare ECV. For those ECV that can be presented in a preserved state and a more convenient, value added form, similarly to how it is presented by the vendors at the farmers’ market, this may be an avenue worth exploring for possible increased market reach.

Value addition, cuts out the guess work in preparation. Durham et al. (1997) (cited by Barton Boland and Coltrain, 2000) pointed out that food processors over several years have been coming up with innovative product ideas to offer easy-to-prepare foods for consumers. Coltrain et al. (2000) also noted that all value added projects should begin with adequate market intelligence about what the consumers want. This is important because not all ECV, for various reasons, will be able to, or will make sense to be made into value added.
5.4 Local Production of ECV

Based on the quantitative analysis, it was found that over 84% of the participants were willing to buy ECV if they were produced locally. There were also significant positive relationships between the same willingness to buy local and paying more for locally produced ECV. It was also found that females are most likely to buy ECV and pay more for it. This finding overwhelming supports the suggestion of increased local production of ECV in Canada.

This finding is also corroborated by the interviewees’ responses as it was identified through the developed theme “paying more for information” presented in section 4.1.11. Consumers are also willing to pay more, once it can be afforded, for ECV if they are adequately informed about the product. The required information include, how it is prepared, food safety standards and the nutritional value it will provide. This finding is in line with information provided by Singh 2007 (cited by Perkin and Walker 2011) who found that while the education of consumers about ECV will take time, after information and education, consumers will be willing to pay more for ECV. This again reinforces the findings which indicate that knowledge will form a significant part of ECV growth. Adekunle et al. (2011) also noted that “the idea of locally growing ECV is reasonable, because consumers were ready to pay more for these vegetables for various reasons” (pg306).

Participants indicated a practical approach in their thought regarding increasing local production of ECV. They believe that where there is local market demand that can be feasibly and economically supplied locally, this should be done. While local production is supported, the research also identified that there are gaps that need to be addressed to achieve growth. They include, market identification and infrastructural support.
The market must be identified and communicated to the producers for them to consider production or increased production of ECV. Therefore the requisite groundwork has to be done to establish requisite market connection. Infrastructural support that needs attention include farmers’ access to information, land, financial and policy support, planting material, training.

**Market Connection.** This challenge, based on the frequency with which it was presented by participants, is argued to be the most important of the identified challenges for improving local production of ECV. Producers want to know that they actually have markets for their produce. This argument was also presented by Adekunle et al. (2011) who pointed out that vegetable producers were concerned with the management of supply and demand of ECV, as farmers felt that there would be a saturation of the market when many farmers begin producing. It was however noted that this could be corrected with increased awareness and marketing initiatives, as was similarly discussed above in section 5.2.

**Technical Information.** Nawaratne (2012) also argued that these are some technical challenges faced by farmers, including crop protection, insect control, weed control and unavailability of pesticides for ECV and land for farming. While these were not all detailed by this research, some were. Interviewed participants noted that there needed to be greater agricultural research and information about production of ECV in Canada. The issue of technical support and information in order to be involved in ECV production, was also pointed out by Nawaratne (2012) as follows:

According to these farmers, the lack of knowledge and extension, poor consumer awareness and low level of understanding about the ECV market are the major barriers preventing them from trying to grow these ECV (pg 115).

**Planting Material.** Of the vendors interviewed at the Guelph market, most indicated that they sourced seeds from their home countries. It was however indicated by a U of G researcher
interviewed that, seeds are available but it is sometimes not the specific variety that the ethnic population are accustomed to. While mainstream consumers are not likewise accustomed to the variety demanded by the ethnic population, it would be good that producers provide to consumers the most desired variety. From a marketing perspective this would be the best direction in reaching a wider cross section of the market.

Kelleher et al. (2008) (cited by Nawaratne, 2012) notes a similar finding:

Another barrier to the ECV production faced by the farmers is the lack of availability of seeds. Since these crops are new and not considered in current policy as mainstream crops, there are issues with seed importation. Obtaining seeds from overseas is difficult due to strict regulations and legislation. Farmers sometimes tend to obtain them even through illegal means (pg 16).

**Policy and financial support.** Critical to the start-up and growth of any business is the requisite financial and policy support. This was identified as a challenge across the different stakeholders, who felt access to certain funds were not extended to everyone. Nawaratne (2012) found that inadequate financial support was a challenge that producers experienced. He further noted that ECV opportunities were more realisable for larger, more stable producers over the smaller, less established ones. He noted that, “one of the major strengths of the large scale farmers is that they have the land, farm structures and capital which are entry barriers to most new and especially immigrant farmers to ECV cultivation” (pg106).

Also imperative is that governmental initiatives be explored so as to ensure that the proper framework is in place. These include the requisite policies that guide all the identified challenges as discussed relative to large and smaller farmers.
5.5 Market Segmentation

Several variables were examined to view the segments of the Canadian population that were most likely to try ECV. Variables included age, sex, education, income, household make-up and adventure level of individuals. Four variables, age, number of people in the household, ethnic shoppers and being a very adventurous shopper, presented themselves based on the binary logistic regression done as predictors of the population segment that may be considered for exploration and targeting.

It is important to point out that similar to the finding of the quantitative result specific to being very adventurous is related to the theme that emerged through the open coding process, that is, intercultural acceptance. It was understood from this theme that born Canadians were more adventurous and willing to try ECV when compared to the ethnic population that generally will stick to ECV that they are already familiar with.

As noted in Chapter 2, literature review, section 2.1.3, the New Survey 1995 (cited by Roseman, 2006) says that mainstream consumers choose to eat ethnic food while dining out because they are usually alternative seekers, individual who enjoy exploring new things. These individuals it noted were usually younger. This may be the reason why the focus group participants – representative of the younger market segment, presented themselves as adventurous and open to trying new foods.

Section 2.5 of the literature review pointed to the fact that among other variables researchers have identified that age and the number of people in households as predictors of greater vegetable intake and purchase. Ethnic shoppers, based on research done on the topic of ECV, also suggest that the ethnic group /shoppers are the largest consumers of ECV in Canada.
The three main ethnic groups in the GTA alone, according to Filson et al. (2011) demand a value of over $61 million ECV in the GTA.

It is understood that the four noted predictors are validated by previous research. The discussion will seek to shed light and allow for greater understanding and interpretation about other variables that were less significant. To expound on this we relook at the findings of the results sections and the reviewed literature.

**Gender.** Among surveyed participants of the research, females have been identified as the primary buyers of vegetables. Additionally the results indicated that gender was a single predictor of knowledge. Females were also found to be more likely to purchase and also pay more for ECV if they were produced locally. This argument is supported by the Heart and Stroke Foundation of Canada (2013), position statement which also states that men are less likely than women to consume vegetables in general. This is despite the fact that the regression did not find the variable to be a significant predictor. It is however significant as an individual predictor and should be considered important.

**Education and Income.** While these variables were not statistically, both education and income have been identified in the analysis of qualitative data to be of significance. Consumers’ knowledge about ECV based on their level of formal education, comparing graduate and undergraduates, or through exposure and travel have been identified as key variables that impacts their willingness to consume ECV. Since affordability emerged from the qualitative analysis as a significant factor for purchasing ECV, then this too is an important consideration in segmentation of the market. The Heart and Stoke Association of Canada (2013) claims that there is a relationship between income and education and notes as follows: “Low income-education
groups are less likely to consume vegetables and fruit than high income-education groups” (pg 5).

**Employment Status.** While employment status did not emerge as a factor in this research analysis, it is nonetheless safe to say, with reference to the importance of income as presented by the Heart and Stroke Association of Canada, employment has to also be considered important since this is the means for generating incoming and thus allowing consumers the capacity to be able to afford a purchase.

**Shoppers of Markets and Supermarkets.** In pulling on the literature review, section 2.2.4 and section 4.1.5 of the results chapter which both discusses distribution channels, it can be deduced that understanding how to supply ECV to the consumers that want them is important. Section 4.1.5 suggests that consumers are able to access ECV in cities such as Toronto, this is however not always so in Guelph. This could be a deterrent to the local ethnic shoppers, who are willing to try newly introduced ECV.

### 5.6 Summary

Several factors relevant to the findings are discussed. These are all important in better understanding the Guelph consumers and achieving ECV crossover. The discussion begins with consumer satisfaction, which is presented as a result of both availability and quality. This is supported by Filson et al. (2011) who indicated that ethnic shoppers where they cannot access their required ECV, simply buy mainstream vegetables. Participants seemingly use freshness and quality interchangeably and this might be the reason behind why freshness is a predictor of ECV vegetable purchase in the quantitative analysis and quality is of greater significance in the qualitative analysis.
Knowledge and awareness, is found to be of great significance in the results of the analysed data. In examining the Guelph retailers, Kajumba (2012) found that knowledge is important not only for consumers but also for the retailers since they need to understand what the consumers want in order to supply. In addition to those purchasing factors, inclusive of freshness, quality, affordability, locally grown have all been discussed. The factor of providing value added product emerged as an important point of consideration since it was identified in the interviews with the vendors regarding their menus. Additionally, a value added product that was liked in the ECV sample session, was the least identified and categorised and was also considered intimidating to prepare.

Local production and willingness to consume local are areas that were overwhelmingly supported by this research and by others such as Perkin and Walker (2011) and Filson et al. (2011). The discussion placed greater emphasis on understanding areas that were included under the theme capacity support, which included; market, technical support, planting material, policy and financial support.

Finally the section closes with discussion of the final objective related to market segmentation and goes beyond those significant predictors found by the data analysis. It also looked at those deemed not significant based on the calculation, which included gender, income, employment education, market and supermarket shoppers.
Chapter 6
Conclusion & Recommendation

6.0 Introduction

This chapter presents two sub-sections inclusive of the conclusion and the recommendations. The conclusion provides in brief, the background, literature reviewed about ECV crossover and findings of the research in light of the research objectives. Connections between these and other key areas of the research will be highlighted. The topic’s contribution to the body of work is also presented. The recommendations that are presented are derived from a full consideration of the research findings and conclusions. They are intended to provide policy makers and other interested stakeholders a greater understanding of the potential of ECV among Canada’s mainstream consumers.

6.1 Conclusion

Research findings by Filson et al. (2011) suggest that there is a $61 million demand for ECV among the ethnic population in the GTA that is largely being satisfied by import, of which some can be locally produced. It was also suggested that there is a concern among local producers about possible market saturation and as such there is a need for further information about the market potential for ECV.

The research therefore sets out to offer some of this market information that is required by producers and other stakeholders. The Guelph, Stone Road Mall, consumers’ position as it relates to crossover effect of ethno-cultural vegetables was examined. It was intended that the findings would give a better understanding of the potential market demand that exist for ECV
through an examination of consumer vegetable purchasing decisions and their perceptions of local vegetables within the Guelph area. In attempting to explore the goal, the research was based on five objectives, they are to:

1. Determine the satisfaction level of non-recent immigrants with the quality and variety of vegetables that is now available to them.

2. Determine if the Guelph consumers are sufficiently supplied with, exposed to and knowledgeable about ECV.

3. Identification of the factors that influence the demand for ECV by the Guelph consumers.

4. Assess Guelph consumers’ willingness to consume ECV if grown locally.

5. Identify what segment of the population would be most willing to explore and consume ECV.

The fact that the research sought to examine ‘crossover effect’ the focus was largely on gathering information about Canadian born and non-recent immigrants. This was done through analysis of data collected from in-depth interviews with various stakeholders also focus group discussions with Canadian born students and data collected from a recently administered questionnaire to some Guelph residents within the University and Stone Road Mall area.

The crossover of ECV based on the analysis of related secondary data allowed for recognition of several key areas related to crossovers, inclusive of its history, effect and potential. These are now captured in a newly developed conceptual framework and presented in figure 2.8. Relative to crossover history, key areas included migration, crossover success and failures and the strategies that have been employed in the past were all examined. For crossover effect, areas examined included knowledge, availability of vegetables, market trends, satisfaction
and quality and purchasing factors. Crossover potential which relates to projections and reaching the crossover market, examined the demographic variables and made assessments of how the information on the demographic variables could be utilized.

In examining the objectives, there were certain key statistical findings relevant to each. In determining the satisfaction level of non-recent immigrants with quality and variety of vegetables available to them. It was found that while consumers are satisfied with mainstream vegetables, they are not adequately satisfied with the quality and availability of ECV in Guelph. Johnson et al. (2000) in examining different satisfaction indices suggested that quality is a key variable among measuring satisfaction. Quality, is explained by Rodriquez et al. (2006) as examining the intrinsic and extrinsic elements of a product. As it relates to availability, Kajumba (2012) points out that in Guelph the supply of ECV were not consistent or of the best quality.

These two variables, quality and availability, were found to be inadequate and as such are impacting negatively on the satisfaction level for ECV in the Guelph area. In determining Guelph consumers’ knowledge and exposure about ECV, it was found that knowledge is a key area of consideration by consumers. The Guelph consumers’ knowledge and exposure to ECV however is still limited. Greater marketing initiatives were suggested for increased awareness and knowledge of consumers. The most popular ECV of those presented for identification in the data collection process were Chinese eggplant, bok choy, and okra. Planters of vegetables are however more aware and knowledgeable about ECV and the Canadian born consumers are being acculturated to ECV, so they are learning. This is supported by Agri Food Canada (2010) which indicates that Canada’s increased diversity is also causing a natural process of acculturation as more food become available in the market.
The research identified three main factors that influence the demand for ECV, which were freshness, being locally produced and having adequate information about the vegetables. Some ambiguity was identified between freshness and quality as individuals used them interchangeable in discussing purchasing factors. Being locally produced was identified as a key purchasing factor which was also identified by Adekunle et al. (2013) who suggested that consumers are increasingly interested in where their food comes from and as such locally grown foods are being greatly demanded.

The fact that locally produced ECV is a factor considered by consumers in making their purchase decisions, it answers the question related to Guelph’s shoppers willingness to consume ECV if grown locally. Additionally, local production of ECV is something that is supported by the Guelph consumers. It is felt by consumers that if there is a demand that can be feasibly satisfied that it should be done. Capacity improvement, inclusive of facilitation of greater market arrangement and putting in place requisite infrastructure is required to facilitate growth of the ECV subsector. As previously discussed, inadequate financial support to producers was one of several areas identified for improvement. This issue was also put forward by Nawaratne (2012) as a challenge that producers experienced within the ECV subsector.

The fact that Guelph consumers are adventurous was a key finding in identifying the population segment most willing to explore ECV. Being an adventurous consumer was one of the significant predictor variables of consumers’ willingness to eat newly introduced ECV. The New Survey 1995 (cited by Roseman, 2006) has shown that more adventurous people are usually those who experiment with ethnic food in restaurants. While Canadians were found to be adventurous and willing to try newly introduced ECV, ethnic groups were found not as willing to try other ethnic groups’ vegetables. They preferred to stick with what they were accustomed to.
Additionally, older consumers are more willing to try ECV, even though they are less exposed. This is an important finding when one considers the population segments. This might be explained by arguments of the Heart and Stroke Foundation (2013) which argues that older individuals consider the health and nutritional value of food more than younger people.

6.1.1 Contribution to body of work

Previous research relevant to ‘crossover’ was related to music and the arts. Academic publication regarding acceptance of ethnic foods was not significant in terms of vegetables. The information that is gathered in this research therefore provided academic material relating to crossover from unusually explored stance, examining the ECV crossover market in Canada. The information presented in the research also adds to the catalogue of research done on this very relevant topic of ECV. This is an area that will only become more significant with time due to the projected growth of the ethnic population within Canada. The conceptual framework that was developed is also a key piece of information that will be important in guiding other relevant research.

The research also identified gaps that need to be remedied for growth to be accelerated within the sector. While previous research has identified some of the gaps, reinforcement is always important to ensure that the best decisions are made at all levels.

6.2 Recommendations

Mainstream consumers in Guelph’s Stone Road Mall area and within the University of Guelph are adventurous and some are consumers of some popular ECV primarily bok choy and eggplant. However, a major challenge that is identified throughout the research, is that the market lacks the required information regarding ECV. Additionally mainstream consumers
require better quality, fresher and locally produced ECV. These and other identified premise have informed the outlined recommendations:

**Governmental policy development and support**

Requisite governmental policies should be developed to support the sustainable growth of the ECV sector. A policy suggestion is to reduce ECV imports thus providing immediate marketing opportunities for increased local production. Mainstream consumers perceive locally produced vegetables to be fresher and of a better quality and so have indicated they would be more willing to buy locally produced ECV. Another policy positon arising out of the research is a seed policy that allows for easier access to suitable varieties of ECV that are as authentic as possible and can be best produced in the Canadian situation.

**ECV education**

Education of both producers and consumers is necessary if the full mainstream market potential is to be achieved in Canada. Local farmer/producers need to be informed and educated about proper ways of producing ECV. They also need to be made aware of the ECV that can be produced viably. Consumers need to be educated regarding the various types of ECV that are available and their associated benefits. Among the strategies that may be employed are supermarket promotions and provision of recipes and samples in sales locations, media promotional outlets such as, TV, radio, magazines, etc., conveying to target groups/consumers the health and nutritional values of ECV consumption.

**Improved distribution network in Guelph**

As indicated ethnic consumers in Guelph are not able to adequately access the ECV and mainstream consumers have never seen most ECV. It has been established that availability is important to satisfaction and so the avenues of getting these products to consumers needs to be
improved. Supermarket chains and other retail outlets need to further examine their particular market requirements in light of the identified inefficiencies in accessing quality ECV in Guelph.

**Develop a focused marketing strategy**

The information that is required to grow the mainstream ECV market needs to be presented to the targeted markets in a focused way and education of consumers will be a part of the core of marketing. Therefore a suitable market strategy has to be developed and implemented. The marketing strategy should consider expanding the home garden concept as advanced by World food project, wherein mainstream consumers are introduced to some ECV and encouraged to grow small amounts for household use. The ECV are all discussed as a group in the research, however individual vegetables are at different stages of market development and acceptance. Accordingly, the marketing strategy should recognize this difference and individualization of each ECV and propose very pointed strategies based on these differences.

**Examination of valued added ECV products**

As identified in the research, mainstream consumers have limited knowledge about preparation of ECV but are willing buyers of prepared ethnic foods which are sold in the Guelph farmers market. This suggests that further examination of ECV value added products that could be presented to consumers is required. Such prepared products will provide an option thus reducing the work of preparing ECV and offering convenience to busy individual which would appeal to a large demographic, not only the mainstream but various other ethnic groups.

**Create commodity development profile for the three most popular ECV**

As mentioned, the research recognized that different ECV are at various stage of their development and acceptance in the market. Bok choy, eggplant and okra have been seen to be the most identifiable ECV. Commodity development profiles for these three vegetables should
be done to explore individually the growth of each and identify the strategies that have been employed in getting each to its present point in the market. This information can be used as a building tool for the growth of other ECV.

**Establish product standards for ECV**

It has been identified that the quality of ECV is inferior when compared to mainstream vegetables. Freshness and quality is a reason advanced for mainstream decisions to purchase vegetables. Therefore, it is important that ECV that are locally produced have certain standards that must be maintained. ECV quality can be ensured with the establishment of suitable processes and procedures in the planting, packaging and distribution process. Additionally, established systems of certification which recognize good agricultural and manufacturing practices that is at a nationally accepted standard, such as Foodland Ontario, should integrate within its purview production standards for ECV and its value added products. This would give consumers the confidence in the ECV product, when a reputable entity gives it a stamp of approval.

**Extension services**

An adequate and efficient system should be instituted to provide a liaison between research and production and between market and production. This extension service would provide timely and accurate information on new advances in research, production systems, market demand, quality requirements etc. so as to support the decision making process.

**6.3 Future research required**

- More research in the area of ECV crossover can be done in understanding the acceptance level for ECV between the different ethnic groups can be closer examined to see the potential between the various groups.
• Greater work needs to be done in ascertaining the information about pulling together in a more cohesive way both the production and marketing aspect of ECV in Canada. Documentation of such research is important to fill the gap of information that is required by all the stakeholders relevant to building the ECV subsector.

• Research can be done in examining the opportunities that may be available within value added production of ECV, based on an in-depth assessment of consumers’ needs while also looking at the resources that are available and business interests in the area.

• Work can be done in understanding the distribution gaps that exist within Ontario. This will allow a greater understanding as to why one town is satisfied and another is deprived of culturally appropriate vegetables. This research would contribute to understanding how to improve the current distribution deficit for ECV highlighted by the research.
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Appendix

Appendix 1: Questionnaire

Questionnaire on Consumer Perception, Identification and Crossover Impacts of Ethno-cultural Vegetables (ECV)

Vegetable Purchasing Decisions:

1. Are you the primary purchaser of vegetables in your household? (Check one):
   - [ ] Yes
   - [ ] No

2. Over the course of the year, what is/are the source(s) of vegetables for your household? (Check any options which apply):
   - [ ] My farm or garden
   - [ ] Local farmers’ market
   - [ ] Community Shared Agriculture (CSA)
   - [ ] Roadside stands or on-farm market
   - [ ] Supermarket
   - [ ] Ethnic grocery store
   - [ ] If Other, please specify: ________________________________

3. Are you currently consuming any vegetables that you were not consuming before? (check one option):
   - [ ] Yes
   - [ ] No

4. If yes, please identify the vegetable(s) and the reason(s) why you are now consuming it:
   ________________________________________________________________
   ________________________________________________________________

Consumer Perceptions of Local Vegetables:

5. How would you rate the availability of fresh produce in your area? (Check one)
   - [ ] Very Good
   - [ ] Good
   - [ ] Fair
   - [ ] Poor
6. On a scale from 1 to 10 with 1 being least satisfied and 10 being most satisfied, how satisfied are you with the seasonal supply of fresh vegetables available in your area? (circle one below)

1  2  3  4  5  6  7  8  9  10
Not satisfied  Very satisfied

7. List any vegetables that you like but are difficult to obtain in your area.

________________________________________________________________________

8. What quality improvement(s), if any, would you like to see in the various vegetables supplied to your area?

________________________________________________________________________

9. If made available, would you be more willing to buy, indifferent to, or less willing to buy ethnic vegetables that are:
   i. Labelled according to the country of origin (please check one box below)
      ☐ More willing to buy
      ☐ Indifferent
      ☐ Less willing to buy
   ii. Grown on local farms (check one box)
       ☐ More willing to buy
       ☐ Indifferent
       ☐ Less willing to buy
   iii. Recently introduced into market (check one box)
        ☐ More willing to buy
        ☐ Indifferent
        ☐ Less willing to buy

10. On a scale of 1 to 10, with 1 being least adventurous and 10 being most adventurous, how willing are you to try new vegetables? (Please circle one number below)

1  2  3  4  5  6  7  8  9  10
Not adventurous  Very adventurous

11. Do you consume any vegetables that are not typically associated with your ethnic or cultural group?
    ☐ Yes
    ☐ No
    ☐ Sometimes

12. If yes, please identify the vegetable(s).

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
13. How regularly would you say vegetables are purchased in your household?
   ☐ Less than once a week
   ☐ Once a week
   ☐ A couple of times per week

14. In a month, how much would you say you typically spend on ethnic vegetables, i.e. vegetables that are traditionally associated with other cultural or ethnic groups than your own?
   $___________________

15. Are you satisfied with the quality of ethnic vegetables supplied in your area (check one)
   ☐ Yes
   ☐ No
   ☐ Somewhat
   ☐ Don’t know

16. What factors other than price influence your decision to purchase vegetables?
   __________________________________________________________
   __________________________________________________________

17. Do you grow any vegetables for your consumption?
   ☐ Yes
   ☐ No

18. If Yes, which vegetables do you grow? ____________________________

19. Are you willing to pay more for locally produced vegetables instead of imported vegetables?
   ☐ Yes
   ☐ No
   ☐ Not sure

20. List any five vegetables that are regularly consumed in your household? (In any order)
   i._________________________________________________
   ii._________________________________________________
   iii._________________________________________________
   iv._________________________________________________
   v._________________________________________________
Identification:

21. Identify the name and/or nicknames of the following ethno-cultural vegetables (If you are unsure of any names, write “unsure”).

<table>
<thead>
<tr>
<th>1.</th>
<th>2.</th>
</tr>
</thead>
</table>

| 3. | 4. |
About yourself:

22. Sex:
   - Female
   - Male

23. Are you a vegetarian?
   - Yes
   - No

24. How many years approximately have you been a resident of Canada? ________________

25. What is the highest level of education that you have completed? (Please check one)
   - Less than Grade 12
   - High School Graduate
☐ Some College or University
☐ College or University degree
☐ Post-graduate degree

26. What is your occupational standing?
☐ Full-time employed
☐ Part-time employed
☐ Full-time homemaker
☐ Unemployed
☐ Student
☐ Retired

27. Which of the following categories corresponds to your household’s monthly income?
☐ Less than $2,000
☐ $ 2,001.00 – 3,000.00
☐ $ 3,001.00 – 4,000.00
☐ $ 4,001.00 – 5,000.00
☐ $ 5,001.00 – 6,000.00
☐ $ 6,001.00 – 7,000.00
☐ $ 7,001.00 – 8,000.00
☐ More than $ 8,000.00

28. What is your country of origin?_____________________________________

29. Out of your household monthly income, what percentage would you say is allocated to purchasing food? (Check one):
☐ 21% or more
☐ 11% - 20%
☐ 10% or less

30. What year were you born? ________________

31. How many people are currently living in your household? ________________

This questionnaire is now complete. Thank you for your time and effort!
Appendix 2: Interview Questions

Pre-amble
Interviews will be face to face in nature and therefore the identity of participants cannot be anonymous, information which is shared however will be held in the strictest confidence and will be used for the sole purpose for which it was solicited, which is to enrich this research. Measures will be taken to ensure that the information shared will be protected and accessible only to the research team. All shared information will be appropriately destroyed once the research is concluded. It is important to note that participants are allowed to withdraw information shared with the research team at any time prior to the publication of the research document.

Questions

1. Are you currently consuming any vegetables that you were not consuming before? (check one option):

☐ Yes
☐ No

Would you consider these ethnic vegetables? .................................................................

2. Do you grow any vegetables for your consumption or sell?

☐ Yes
☐ No

If Yes, which vegetables do you grow and for what purpose? __________________________

3. Do you find that consumers are willing to pay more for locally produced vegetables instead of imported vegetables?

☐ Yes
☐ No
☐ Not sure

4. List any five vegetables that you recognise to be regularly consumed or sold? (In any order)
   i._________________________________________________
   ii._______________________________________________
   iii._______________________________________________
   iv._______________________________________________
   v._______________________________________________

5. What factors other than price do you find influence the decision of consumers to purchase vegetables?

______________________________________________________________________________
6. Do you find consumers' taste for vegetables is changing? ____________________________
   In what way?

6a. What two strategies from your perspective could cause the mainstream market to eat more ethnic vegetables?

7. How would you rate the availability of fresh produce in your area? (Check one)
   ☐ Very Good
   ☐ Good
   ☐ Fair
   ☐ Poor

8. On a scale of 1 to 10, with 1 being least adventurous and 10 being most adventurous, how willing are you to try new vegetables? (Please circle one number below)
   1  2  3  4  5  6  7  8  9  10
   Not adventurous  Very adventurous

9. Do you consume any vegetables that are not typically associated with your ethnic or cultural group?
   ☐ Yes
   ☐ No
   ☐ Sometimes

   If yes, please identify the vegetable(s).

10. What are your thoughts about producing more ECV in Canada? Is there sufficient support in place to cause this to happen?

11. Do you think ethnic groups in Guelph are satisfied with available vegetables?
    State the reasons for your answer.

12. Are there any vegetables you find to be increasingly demanded that is not usually available?
About the Interviewee

Gender: M....  F.....
Categorisation of Participant: Farmer ..... Retailer ...... Consumer..... Other......
Organisation: ..............................................................
Appendix 3: Focus Group Discussion Guide

Themes 1 – Knowledge & Awareness of ECV

1. What vegetables from the list can you identify? How did you learn about the identified ECV?
2. How would you go about preparing this ECV?

Theme 2 – Accessibility of ECV

3. Are you able to easily access the vegetables you require in the market?
4. From the list of ECV you have learnt about, which have you never seen in the market place?

Theme 3- Willingness to consume ECV

5. What are the three vegetables you now consume the most and why?
6. Have you ever consumed an ECV? State the kind and the reason and the context in which you tried it?
7. What would be some factors that would cause you to try/try others ECV?

Theme 4- Local Production of ECV

8. What are your thoughts on nationally producing more ECV?

Extra Questions - Satisfaction

9. Do you think ethnic groups in Guelph are satisfied? Give experience, may be through a friend’s shared experience, etc?
Examples of Ethno cultural Vegetables

- Bok choy
- Chinese eggplant
- Okra
- Bitter melon
- Garden egg/African eggplant
- Cassava
- Smooth amaranths/Callaloo
- Breadfruit
- Ackee
- Chayote/Cho cho
- Chinese broccoli
- Daikon radish