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Acculturation and consumption: Examining the consumption behavior of people of Afro-Caribbean descent in Canada

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Abstract

This paper examines the consumption of ethnocultural vegetables by people of Afro-Caribbean descent in the Greater Toronto Area (GTA) of Canada while considering their acculturation level. The results indicate that the respondents are willing to substitute other closely related varieties for their ethnic vegetables when they are scarce. The acculturation scale also indicates that these Canadians assimilate and accept the values of other ethnic groups while they retain their own identity. As consumption of ethnocultural vegetables is part of their identity, among GTA Afro-Caribbean Canadians there is a very large unmet demand for ethnocultural vegetables, which is likely to be true throughout the country.

Keywords

acculturation, Afro-Caribbean, consumption, ethnocultural vegetables, Greater Toronto Area

Introduction

Researchers have suggested that ethnicity, which refers to people who share the same cultural heritage, has a strong impact on the consumption pattern of ethnic groups, especially when they are away from their home countries (Adekunle, Filson, & Sethuratnam, 2010; Gren, 1999; Hamlett, Bailey, Alexander, & Gareth, 2008). The consumption pattern of ethnic Canadians is not well researched, aside from a few studies (Adekunle et al., 2010; Abdel-Ghany & Sharpe, 1997; D'Astos & Daghfous, 1991; Lee & Tse, 1994; Wang & Lo, 2007). However, there is no extensive study of ethnocultural food consumption by people of African descent in Canada (defined as people from sub-Saharan Africa and the Caribbean or West Indies who now reside in Canada).

Analysis of consumption within a cultural context is complicated, especially in the case of African descendants, with differences as the result of the

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various countries of origin. Due to this complexity, it is appropriate to study ethnic behaviour by taking into consideration age, gender, socioeconomic characteristics, place, and generational difference (Hamlett et al., 2008; Jackson et al., 2006; Miller, Jackson, Thrift, Holbrooke, & Rowlands, 1998). While considering all these variables, this paper is an attempt to enhance understanding of the consumption behavior of Afro-Caribbean Canadians (AC-Canadians), with an emphasis on the vegetables they consume that come from their respective countries. Although consumption decisions at times are more subjective than rational, vegetables that are associated with specific cultures will continue to be sought based on an ethnic group's past experience, or what we refer to as their bounded rationality — in which decision-making by individuals is limited to the information at their disposal or past experiences (Simon, 1955). The subjectivity and different utility levels experienced by each consumer develop as a result of personal characteristics, years spent in Canada, and degree of acculturation (assimilation of other ethnic groups' values, norms, foods, and ways of life). Many authors (Dwyer & Jackson, 2003; Gregson, Crewe, & Brooks, 2002; Jackson, 2002) have also analyzed consumption and they believe that consumption operates within a cultural context.

Since this paper's analysis is within a cultural context, a clear understanding of the phenomenon that defines a people's level of integration with and assimilation of other cultural values within Canada — their level of acculturation — is required. An understanding of acculturation is needed because consumers who are visible minorities (visibly distinct from the dominant ethnocultural groups) are often in a multiple state of identity, which affects their interactions within and outside their ethnic group (Jamal & Chapman, 2000). A careful examination of the acculturation level of AC-Canadians is important because it shows how easily they can be integrated into Canadian society and what impact their degree of acculturation has on their consumption of ethnocultural vegetables. Immigrants express their ethnic identity through their patterns of consumption behavior, so a critical analysis of the acculturation and consumption behavior of a particular ethnic group is required (Herche & Balasubramaian, 1994; Jamal & Chapman, 2000). Acculturation levels also influence the expenditure on and consumption of different commodities (Herche & Balasubramaian, 1994).

This paper concentrates on the Greater Toronto Area (GTA) because it is the largest metropolitan area in Canada, with a population of close to six million. African descendants in the GTA number about 400,000, making them the third largest ethnic group in the GTA, and thus their food demands should affect what foods are available in stores. In this paper we have chosen to focus on the vegetables that relatively recent immigrants to the GTA eat or would like to eat. This paper also discusses the interconnection between acculturation and consumption patterns of people of Afro-Caribbean descent in the GTA. The types of vegetables consumers are eating are changing in the GTA because the demographics of the city have been changing substantially over the past several decades.

Acculturation and Consumption

There is a growing body of research that considers the relationship between acculturation, ethnicity, and consumption. The connection between consumption patterns and ethnicity in Canada has been explored (for example, Abdel-Ghany & Sharpe, 1997). One's personal history and culture tends to determine food preferences (Neff, Palmer, McKenzie, & Lawrence, 2009).

Acculturation is not a linear process that leads to assimilation; in any case, "acculturation and the assertion of ethnic identity are not mutually exclusive" (Hamlett et al., 2008, p. 97). Rather the authors approvingly cite Berry (1980), who argues that "acculturation is a bi-directional process in which an individual constantly moves back and forth, between positions of assimilation, integration, marginality and separation" (cited in Hamlett et al., 2008, p. 97).

Acculturation arises when people from different ethnic groups decide to co-exist in the same location, leading to changes in the original cultures of

both groups (Chapman & Jamal, 2000). Acculturation can arise as a result of migration to a new country for work or education, or for personal reasons (Laroche, Chankon, & Hui, 1997). According to Berry (1980), there are four modes of acculturation: integration, assimilation, separation or rejection, and marginalization/deculturation. The mode an individual adopts and the extent of acculturation depend on exposure, proper understanding of the new culture, and the circumstances that prevail in his or her immediate environment (Dato-on, 2000). Understanding acculturation requires exploring the concept of ethnicity, which can be examined through different dimensions (Webster, 1994). It can be defined as the shared heritage of a racial group (Jamal & Chapman, 2000), or as individuals self-identifying as members of a particular group based on such variables as language, values, norms, religion, and skin color (Jamal & Chapman, 2000; Tajfel, 1981). Cognition and perception are involved, because individuals of the same ethnicity might not accept readily the expectation of the group, based on their own personal conviction or exposure to other realities that makes them more accommodating to other people's culture and skeptical about certain parts of their own culture.

Consumers' level of acculturation can affect disposition to purchase their ethnic foods and their acceptance of foods alien to their culture. The more integrated and assimilated an individual is into the dominant culture, the less inclined they may be to purchase their original ethnic foods and the more likely they may be to consume foods that were not part of their previous culture. For example, a second-generation African descendants living in Canada may be more accommodating to non-African vegetables than a Nigerian who migrated to Canada a decade ago. Adaptation as the result of exposure and learning can explain these differences.

The effect of acculturation on the consumption behavior of certain ethnic groups in Canada has been documented. D'Astos and Daghfous (1991), for example, suggest that highly acculturated Muslim Arabs show signs of social integration into the host society, while less acculturated individuals remain involved mainly with Arab mosques, cultural associations and institutions within Canada. The higher the acculturation level, the lower the sense of ethnic identity. Lee and Tse (1994) discovered that media consumption among immigrants from Hong Kong varies with the level of acculturation; the longer they have lived in Canada, the less likely they are to use ethnic media as compared to host media.

According to Penaloza (1994), acculturation involves movement and adaptation. It involves the adaptability of consumers to the realities of the cultural environment in a new country. Many researchers (Bojanic & Xu, 2006; Cleveland, Laroche, Pons, & Kastoun, 2009; Jamal & Chapman, 2000) perceive a strong link between acculturation and consumption. As a recognition of the significance of acculturation, we developed a scale that can be used to measure acculturation for all types of ethnic Canadians, called the Ethnic Canadian Dietary Acculturation Scale (table 1).

Table 1. Ethnic Canadian Dietary Acculturation Scale

Statement	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
I enjoy speaking English.	5	4	3	2	1
Most of my friends are outside my ethnic group.	5	4	3	2	1
I enjoy English-language movies and TV programs.	5	4	3	2	1
I learn a lot from people outside my ethnic group.	5	4	3	2	1
I welcome most of the values held by people outside my ethnic group.	5	4	3	2	1
I have difficulty accepting most of the values held by my ethnic group.	5	4	3	2	1
I prefer foods that are not my ethnic food.	5	4	3	2	1

Unlike the Western Dietary Acculturation Scale and Chinese Dietary Acculturation Scale developed by Satia et al. (2001), or Bojanic and Xu's (2006) Chinese Acculturation Scale, this new scale can be used to measure the level of acculturation of any ethnic Canadian.

Acculturation and specific types of consumption are related to immigrants' cultural socialization. As people are socialized into their culture they acquire food preferences. Of course vegetables are not ethnic, people are; but particular ethnic groups prefer particular vegetables, so it is in this sense that we use the word "ethnic" or "ethnocultural vegetables" because these are vegetables preferred by particular ethnic or cultural groups. This paper contributes to our understanding of this relationship by examining the acculturation level of people of Afro-Caribbean descent in the GTA and their consumption of "ethnic vegetables."

Responding to the Need for Alternative Nontraditional Crop Markets for Ontario Farmers

Although there has been considerable recent interest in consuming local, fresh produce, the rapidly growing local food movement and changing demographic structure has been largely ignored by the largest vegetable producers (Lammers-Helps, 2010; Marzall, Filson, & Adekunle, 2011). FarmStart,[1] on the other hand, has been working with relatively recent immigrants, who use small plots to grow ethnocultural vegetables (ECV) that are increasingly in demand. Unfortunately, the interest in producing for this rapidly growing niche market has been slow to develop among the 7,500 vegetable producers represented by the Ontario Fruit and Vegetable Growers' Association (OFVGA) (Gunst, Jaque, Jurgens, & McDowell, 2010).

Still, much agronomic research is needed to determine which of the most preferred ECV can be grown in this region, how pests of ECV can be controlled, what regulations are needed, and how these vegetables can best be processed (Filotas, 2009). As Simcoe Research Station's Alan McKeown has observed, there are still no registered pest control products available for ECVs, which means that they may have to be grown organically at higher cost and risk (cited in Gunst et al., 2010). Cerkauskas et al. (1998) observed that while little was known about pests, cruciferous vegetables were widely grown near the GTA and amounted to about half of the ECV grown in the region in 1993–94.

There are now more opportunities to reach local, alternative markets through the increasing number of farmers' markets and ethnic stores, which even include ethnically focused supermarkets. There also are growing opportunities for local farmers to produce many of these people's preferred vegetables, given the rising number of Asian, African, and Latin American immigrants and, as Gunst et al. (2010) indicate (citing Statistics Canada's data), the fact that 55% of Canada's vegetables are still imported. Still, there is a substantial disconnect between the growing market for their vegetables and the willingness of Ontario commercial vegetable producers who are largely of European descent to grow these vegetables. Though the leaders of OFVGA would like their farmers to be more involved in producing for these niche vegetable markets, there still is no ethnic vegetable association among their 28 fruit and vegetable groups, which may be due at least in part to a cultural difference between the association and, especially, some of the more recently immigrated ECV growers and consumers (Filson, 2011). This notwithstanding, many commercial farmers have acknowledged that while there are cultural barriers hindering them from producing for this vegetable market, there is also a lack of knowledge of how to grow vegetables of primarily tropical origin, as well as a lack of knowledge about how to access the market for these vegetables. As Peter Katona of Foodlink[2] acknowledged, "our farmers are quite

[1] According to FarmStart's website, "the objective of FarmStart is to support and encourage a new generation of farmers to develop locally based, ecologically sound and economically viable agricultural enterprises." (http://www.farmstart.ca/)

[2] According to its website, "Foodlink is a non-profit organization that creates partnerships with food producers,

traditional with what they grow" (cited in Gunst et al., 2010, p. 21).These farmers usually don't eat the same vegetables because they are generally not Asian, African and Latin American. And as Gunst et al. (2010) remind us, "knowledge of the production of ethnic vegetables and the corresponding ethnic populations are not sufficient to fully understand the relationships between culture and demand for local vegetable production in Ontario" (p. 21).

By improving our understanding of this relationship, this research intends to strengthen the local food movement in Ontario. The Christian Farmers Federation of Ontario (CFFO) would like to help its farmers take advantage of local market opportunities by educating both consumers and producers about the importance of local food and serving as an information conduit between and among producers. In addition, they would like to continue advocacy efforts to improve the market access of small-scale producers (Stevens, 2008) which would happen if more ECV were grown locally. Donald (2009) has observed that local food benefits Ontario's economy by generating jobs within local regions. Besides, as Bentley and Barker (2005) have argued, there is growing concern about the distance vegetables travel before reaching consumer plates because transportation contributes to global warming.

Commercial producers who perceive the ethnocultural food market as too small may choose not to enter the market because they believe that it lacks sufficient incentive for them to innovate and commercialize products for the market. The ethnic population of the American East Coast also has increased, however, producing opportunities for farmers willing to grow ethnocultural crops. Producers living close to densely populated ethnic areas especially have been encouraged to take advantage of the opportunity due to low transportation costs (Govindasamy et al., 2007). This market is close enough to be accessed by Ontario producers as well.

Obviously, there are a number of barriers to establishing a new crop industry, yet the constantly changing agricultural industry, and in Ontario's case the continual decline of smaller farms (Filson, 2011), suggest that establishing new and diversified crops is essential to the survival of vegetable farming. Bordelon, Browning, and Wagner (1996) argue that interested producers should consider the challenges of weather conditions as well as whether a new crop is compatible with current farming practices. Horticultural research including test plot trials is now being done on this topic with those ECV in highest demand within southern Ontario by the Simcoe Research Station and Vineland Research and Innovation Centre (Davidson, 2011).

Rising demand for ethnic food has made this food market increasingly mainstream, and the benefits of catering to these niche ECV markets can benefit others in the supply chain. WCM Consulting (2008) discovered that there is very significant potential for Canadian ethnic food processors to cater not only to their domestic market but to expand into the Northeast United States as well. WCM Consulting argues that consumers value "authenticity of taste," although second-generation immigrants are likely to be more accepting of Western modifications. The demand for authentic taste requires that the food be obtained either from the country of ethnic origin or grown locally. Transportation is a significant concern when considering marketing these foods to the United States, as U.S. border requirements can delay shipping for unknown periods of time. Because shelf life is a concern, WCM Consulting suggests that processors focus on sauces, spices, dried foods, and shelf-stable, ready-to-eat meals. As Ontario's demographics continue to shift, individuals and organizations within the food production and processing sectors must recognize and adapt to the opportunities that are becoming available.

Unfortunately, as Donald and Blay-Palmer (2006) argue, both the Ontario government's regulatory regime promoting agri-food production and the

processors, retailers and consumers to promote the sale and consumption of locally grown and produced food." (Foodlink Waterloo Region, http://www.ohpe.ca/node/9555)

macro-regulatory environment affecting Toronto that derives from Canada's participation in the North American Free Trade Agreement (NAFTA) and World Trade Organization (WTO) "make it very difficult for national and sub-national governments in Canada to shift public procurement towards supporting locally grown, nutritious, quality food" (p. 1914), including, more specifically, ethnic and locally grown food. Instead, the government's focus has concentrated on biotechnology and export market opportunities for agri-food firms in the region, while ignoring the potential of the local food movement for production and consumption of quality food (Donald & Blay-Palmer, 2006). Nevertheless, the demand for ECV continues to grow as more immigrants arrive. Thus, Donald and Blay-Palmer argue that the consumer-led rise of the specialty, ethnic, and local-food systems in urban areas like Toronto has been swimming against the current of Canada's present food policy. The creative food economy that includes ethnocultural vegetables "is one of the fastest growing subsectors of the food industry within the city and deserves some serious attention" (Donald & Blay-Palmer, 2006, p. 1914).

Methods

Study Design

This study was part of a market research project on the demand for ethnocultural foods in the Greater Toronto Area. The regional municipalities in the GTA include Durham, Halton, Peel, and York. As a result of change in demographics, many people in the GTA were not born in Canada. Several of the largest ethnic groups in the GTA as indicated in the 2006 Census were selected for this study, including South Asians, Chinese, and AC-Canadians. A total of 250 participants from these groups were interviewed, using a semistructured questionnaire developed after pretesting and expert evaluation. The questionnaires were administered through ethnic societies and ethnic stores in the GTA (Adekunle, Filson & Sethuratnam, 2009).

The societies and stores selected for the survey were randomly selected from a list developed after several consultations with stakeholders in the GTA and a preliminary survey. Questionnaires were only administered to respondents who were willing to participate and were from societies that wanted their members to participate. The design was developed in such a way that we were able to make inferences about the population from the sample. The results below are presented in the recognition that there was some modest danger of response bias and some concern that those who agreed to participate in our face-to-face interviews may have excluded some participants, but our +/–6.2% sampling error for the GTA is quite good. Relative to other, less representative, techniques such as random digit dialing and online surveys the results below are quite representative of the GTA's population. The respondents were also the main grocery buyers from their respective households. This paper concentrates on the analysis of the results from the interviews with AC-Canadians.

Instrument

The data collection instrument used for the study was a semistructured interview questionnaire. The questionnaire had five sections: expenditure on vegetables, consumption of ethnic vegetables, acculturation, background information, and personal characteristics of respondents. Some of the questions had a Likert-type scale (5 = very important, 4 = important, 3 = neither important nor unimportant, 2 = unimportant, 1 = very unimportant), such as for our scale on acculturation, the Ethnic Canadian Dietary Acculturation Scale (ECDAS). The ECDAS is a seven-item scale with a Likert-type scale of 1 to 5 (5 = strongly agree, 4 = agree, 3 = neither agree nor disagree, 2 = disagree, 1 = strongly disagree). The ECDAS was used to measure the level of acculturation of ethnic Canadians. We tested for the reliability of the scale with Cronbach's alpha value. Questions in the other sections were either structured, with a minimum of two options (e.g., Yes/No), or open-ended, with the respondents providing the answers. The questionnaire and consent process were approved by the University of Guelph Research Ethics Board.

Survey

Examining the behavior of consumers requires a detailed understanding of the unit of analysis and the phenomenon under study. Therefore, we did an exploratory study using a draft questionnaire to better understand the behavior of this population of ethnic Canadians. The semistructured questionnaire was administered to respondents in Guelph. In addition to pretesting the questionnaire with these individuals, in-depth interviews were also conducted as part of an expert review with people who have a broad knowledge about ethnicity, food consumption, and types of ethnic vegetables.

Our exploratory survey gave us insight into appropriate ways to conduct a survey of ethnic Canadians and sampling procedures and analytical techniques, as well as better understanding of the vegetables consumed by ethnic Canadians and the health implications of consuming ethnic vegetables. In our exploratory survey, we discovered that in order to make inferences about the population from the sample, a probability-based sampling technique should be used with survey respondents. Based on this premise, we used systematic sampling, defined in this context as every nth person in a particular situation being interviewed even if there is no sampling frame.

AC-Canadians were selected primarily through their ethnic associations. We discovered that many, if not most, non-English and non-French ethnic Canadians belong to at least one ethnic association. Other respondents were interviewed when they came to shop at their ethnic grocery stores. Ethnic stores were selected based on systematic purposive sampling. We had a comprehensive list of the ethnic stores in the GTA, from which we selected every third for the survey. After pre-testing the questionnaire in Guelph, a review with experts (including food, botany, and ethnicity experts, ethnic individuals, farmers, and public and private organizations) was conducted on the instrument. The final pretesting we did before the main survey was field pretesting: all our research assistants went to different stores in the GTA to obtain field experience. The research assistants were trained on the ethical and administrative issues involved with face-to-face administration of questionnaires. Four research assistants selected from the University of Guelph and from within the GTA were involved with the field survey and data entry. A total of 250 responses were used in this analysis, out of a population of 372,985 AC-Canadians in the GTA. This gave us a sampling error of about +/–6.2%, which is reasonable because each respondent represented a household of an average of four people, and they answered questions on behalf of their households.

The cross-sectional survey posed some problems, as the respondents had to rely on memory to give information about their income and expenditure patterns. This was expected because most of the respondents do not keep records. Some of the respondents were also reluctant to disclose their monthly incomes. The research assistants had to ask a series of logically related questions to arrive at the estimates used in this study. Due to suspicion and the rather nonchalant attitude of some respondents, questions relating to demographic factors such as age, educational attainment, marital status, and income were also viewed as too personal to use. As a result of all these challenges, some of the variables used in the model were either underestimated or overestimated. This does not invalidate the conclusions of the study because there is a compensatory effect so that the bias in estimation will even out through the use of average values across respondents and households.

Analysis

Descriptive statistics, factor analysis, and analysis of variance (ANOVA) were used to examine the relationship between acculturation and consumption pattern. The ECDAS was tested for reliability and unidimensionality of measurement by Cronbach's alpha. Principal component analysis was used to assess the factors that underlie the acculturation scale. Since the study was done with a probability sampling technique, inferences about the population can be made from the sample. Descriptive statistics such as frequencies and means were used to describe the characteristics of respondents and their consumption of and expenditure on ethnic vegetables. Analysis of variance

was used to compare the means of acculturation scores based on various socioeconomic variables covered by the study.

Results

Descriptive Statistics

The respondents all live within the GTA and have a range of socioeconomic characteristics. The description of the respondents is presented in table 2. As seen in the table, a greater percentage (57%) was male. The explanation for this is that most often men provide the money for groceries, so they are the most likely to be the main grocery buyer in the household. Often when the couple came together to the store, the husbands would answer the questionnaire while their wives did the shopping. It also may be culturally appropriate among some categories of people of African descent for the husband to assume that he is supposed to respond to questions that pertain to the family. As expected, most of the respondents were educated (a condition for migration), married, and had an average household size of three, although household size ranged from one to eight people. Another characteristic of the respondents was that they were mostly low- to middle-income earners, with an average monthly gross income of CA$3,400.

Table 2. Personal Characteristic of Respondents, 2009 (N=250)

Gender	Frequency (n / %)
Male	140 (56.7%)
Female	107 (43.3%)
Marital Status	
Married	136 (56.4%)
Single	86 (35.7%)
Divorced	15 (6.2%)
Widowed	4 (1.7%)
Highest Educational Attainment	
University degree	92 (38.5%)
College diploma	91 (38.1%)
High school	53 (22.2%)
Primary education	3 (1.3%)
Average Age of the Respondents	39.14 years
Average Household Size	3.4 members
Average Total Monthly Income	CA$3,400

Table 3. Source of Vegetables Consumed by Respondents (N=250)

Source of Vegetable	Frequency (n / %)
Supermarket	190 (76%)
Ethnic grocery stores	120 (48%)
Farmers' market	43 (17.2%)
My farm	18 (7.2%)

The respondents indicated that they obtain vegetables (both ethnic and non-ethnic) most often from mainstream supermarkets, followed by their ethnic grocery stores (table 3). When some of their preferred vegetables are not available, they substitute another vegetable similar to their preferred ethnic vegetable. They also patronize Chinese ethnic supermarkets, where they can get some vegetables more closely resembling the species they consumed back home. The Chinese ethnocultural market is better established in the GTA than the markets of African ethnicity, and A-C Canadians also often find vegetables of medicinal benefit in Chinese stores. We also discovered that AC-Canadians consume a rich variety of vegetables that are consumed by South Asian and Chinese residents of the GTA (Adekunle et al., 2010).

A detailed analysis of the ethnic vegetables mentioned by those of African descent in the GTA led to the following list of the vegetables highly preferred by AC-Canadians in the GTA,[3] along with their names in other languages:

[3] Whether each of these ECV can be realistically and profitably produced in Canada is a much bigger research project than we have attempted so far, but researchers are now working in this area at the University of Guelph. Many are presently being grown profitably (e.g., crucifers, amaranth, okra), and most could be grown either in a greenhouse or started in a greenhouse and finished during June–September in Niagara, Simcoe and to a lesser extent the Holland Marsh. Researchers at Simcoe also assert that some are being grown as far north and east as the Ottawa valley. Although consumers at times look

1. Okra *(Abelmoschus esculentus)* — Lady finger, Bhindi (India), Ila (SW Nigeria), Huang Sukui (China), Gumbo (Swahili)

2. African Eggplant/Garden Eggs *(Solanum melongena — Solanum aethiopicum, Solanum gilo, Solanum olivaire, Solanum pierreanum)* — Ngilo (Swahili), Nakasuga/Nakati (Uganda), Njilu (Democratic Republic of Congo [DRC]), Gboma (Togo), Ikan/ Igba/Igbo (SW Nigeria), Ntorowa/ Ntrobu/Yaduwa (Ghana)

3. Smooth Amaranth *(Amaranthus sp.)* — Efo tete (SW, Nigeria), Bitekuteku (DRC), Callalou/Kallaloo (Jamaica), Yin choi, Chinese spinach (China), Thotakura, Cheera (India), Mchicha (East Africa), African spinach, Indian spinach, Bonongwe (Malawi), Thepe (Botswana), Grins/Hondi (Sierra Leone), Alayyafu/ Alefu (Hausa — West Africa), Madze/ Efan/Muotsu, Swie (Ghana), Lalshak (Bengali)

4. Tomatoes *(Solanum lycopersicum*, syn. *Lycopersicon lycopersicum* & *Lycopersicon esculentum)*

5. Yams *(Dioscorea batatas)* — Yellow Yam, White Yam

6. Pumpkin/Squash *(Cucurbita sp.)* — Kaddu (South Asia), Chinese Squash

7. Plantain *(Musa paradisiaca)*

8. Cocoyam leaves/Corm *(Colocasia esculenta/ Xanthosoma sagittifolium)* — Taro, Dalo (Fiji), Seppankizhangu (Tamil), Gabi (The Philippines), Pindalu, Karkalo (Nepal), Nduma (Kikuyu — Kenya), Ala (Maldives), AmaDumbe/Madumbi (Zulu — South Africa), Dasheen, Eddoes (West Indies/Caribbean), Coco (Nigeria), Kontomire (Ghana), Kachu/Kochu (Bengali), Ghuiyan (Hindi), Arvi (Hindi), Macabo (Cameroun), Yu tou/Yu nai (China), Wuh tau (Hong Kong), Arrow roots

9. Yardlong Bean *(Vigna unguiculata* subsp. *sesquipedalis)* — Cowpea/Long-podded cowpea, Asparagus bean, Snake bean, Chinese long bean, Dau gok (Cantonese), Jiang dou (Mandarin), Bora (West Indies), Borboti (Bengali). Also: Black-eyed pea/ bean *(Vigna unguiculata* subsp. *unguiculuta),* Cowpea — Ewa (Nigeria), Kunde (Swahili), Thattapayru (Tamil), Me-karak (Sri Lanka)

10. Cassava *(Manihot esculenta)* — Yucca, Sombe-leaves (Central Africa), Ege, Akpu (Nigeria), Mhogo (Swahili), Mushu (China)

11. Sweet Potato *(Ipomoea batatas)* — Leaves and roots

12. Cabbage *(Brassica oleracea* — Capitata group)

13. Spinach *(Spinacia oleracea)* — Palongshak (Bengali)

This list is not as extensive as it might be because respondents mentioned some other vegetables that were not available at the market. The specific vegetables mentioned by respondents that are not readily available in their area include smooth amaranth, African eggplant, okra, cassava, tossa jute, and bitter leaf (highly medicinal). Respondents frequently mentioned the health implications of vegetables. More than 84% (n=201) had the perception that consumption of vegetables has health consequences (table 4). The respondents said that vegetables are healthy, reduce medical expenses, contain minerals, reduce constipation, and prevent chronic diseases and obesity.

The respondents had the impression that the health implications are directly linked to the quality of the vegetables. The qualities that respondents want in the vegetables they purchase are presented in table 5. Freshness was the main quality that respondents emphasized as being very important to them. The importance of freshness also gives credence to the fact that it will be better if a significant

for substitutes, there are not many viable substitutions for each.

Table 4. Perception of Respondents on the Health Implications of Vegetables (N=250)

Health Implication	Frequency (n / %)
Part of a healthy diet	52 (28.7%)
Leads to lower medical expenses and a good immune system	45 (24.9%)
Contains vitamins, minerals, and proteins	43 (23.8%)
Reduces constipation and is a source of good fiber	36 (19.9%)
Prevents chronic diseases (e.g., cancer, heart problems, blood pressure, diabetes)	32 (17.7%)
Prevents obesity	11 (6.1%)
Leads to healthy skin	9 (5.0%)
Contains antioxidants	8 (4.4%)
Increases lifespan	7 (3.9%)
Contributes to good eyesight	5 (2.8%)

percentage of these ethnocultural foods can be grown in Canada to meet the demand from AC-Canadians and other ethnic groups in the GTA.

The idea of growing locally is reasonable, because consumers were ready to pay more for these vegetables for a number of reasons (table 6). The table shows that the consumers are ready to pay a premium for ethnic vegetables if they are of good quality and taste and if they are part of their staple diet. Their willingness to pay more for ethnic vegetables is also influenced by their availability and freshness, together with the health benefits

Table 5. Qualities of Vegetables Preferred by Respondents (N=250)

Quality	Frequency (n / %)
Freshness	167 (72.9%)
Color/texture/physical appearance/quality	78 (34.2%)
Taste	50 (21.8%)
Nutrition	41 (17.9%)
Organic/natural	29 (12.7%)
Price	13 (5.7%)
Varieties	11 (4.8%)

derived from eating vegetables (table 6). These qualities cannot be achieved in Canada unless these crops are grown locally in the summer. Importing these ethnocultural vegetables will lead to reduced quality because of low shelf life and perishability. University of Guelph plant scientist Gopinadhan Paliyath argues that the nutritional value of most vegetables declines markedly five days after they have been picked (G. Paliyath, personal communication, September 2010).

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 ethnocultural foods. The role of advertising and marketing of ethnocultural foods was deemed relevant by 62% of our respondents. The demand for these crops is so large in the GTA that 21% of our respondents grow ethnic vegetables in their backyards. The vegetables respondents cultivated were tomatoes, smooth amaranth, spinach, and okra. The decision to cultivate these vegetables in their backyards might be due to prices of the commodities or lack of availability.

The financial outcome of demand for these vegetables among AC-Canadians in the GTA was extrapolated from these 250 interviews to CA$7 million per month, based on their total population

Table 6. Factors That Can Make Respondents Be Willing To Pay More for Ethnic Vegetables (N=250)

Factor	Frequency (n / %)
Better quality and/or taste	33 (21.4%)
Staple or part of regular diet	33 (21.4%)
Availability	22 (14.3%)
Freshness	18 (11.7%)
Health benefits	16 (10.3%)
Cultural	11 (7.1%)
Imported from country of origin	10 (6.5%)
Scarcity	7 (4.5%)
Organic	6 (3.9%)
Locally grown	3 (1.9%)

of approximately 400,000. This compares with CA$33 million per month for the GTA's roughly 800,000 South Asian–Canadians and CA$21 million per month for its approximately 600,000 Chinese-Canadians (Filson et. al., 2011).

Consumption of ethnic vegetables by AC-Canadians is affected by availability because the respondents either have to look for a substitute such as substituting spinach for amaranth, or else they buy the expensive products that are available. If household income is low, the family will resort to substituting the ethnic vegetable with a non-ethnic vegetable, especially if they have resided in Canada for some time and have become relatively acculturated to the new food system. About 66% (n=159) of the respondents revealed that they spend up to 15% of their total food dollars on vegetables. The issue of unavailability was also emphasized by respondents (see table 7). Close to 40% of the respondents do purchase their ethno-cultural vegetables in specific outlets once they are sure the products they want will be available in those stores. A store that is close to where AC-Canadians live and has most of the preferred vegetables will be highly patronized.

Acculturation

The ECDAS was used to measure the level of acculturation of AC-Canadians. To ascertain the appropriateness of the scale we tested for reliability (internal consistency); the value of Cronbach's alpha was 0.54. Although the value is not high, the scale is still reasonably reliable. The mean score of each item on the ECDAS scale is presented in table 8. The item with the highest mean score was "I enjoy speaking English," with a score of 4.42 (with 5 the highest score, "strongly agree"). This may be part of the reason why people of African descent in Canada can purchase in stores where their vegetables are not labelled in their local languages, unlike Chinese-Canadians, for whom "language" is one of the major attributes that affects their decision to purchase ethnic vegetables (Adekunle et al., 2011). Another item that was high on the scale was "I learn a lot from people outside my ethnic group," with a mean score of 4.22. This suggests that AC-Canadians are willing to learn from other ethnic groups' values and norms, which might also include food consumption and acceptability. The items with the lowest scores were "I have difficulty accepting most of the values held by my ethnic group" (mean of 2.22) and "I prefer foods that are not my ethnic foods" (mean of 2.43), indicating that they mostly disagree with these questions. The implications are that no matter how accommodating the respondents are to other ethnic groups' ways of life, they still retain their cultural values and will prefer to consume their own ethnic foods. However, as noted previously, members of the group are generally willing to replace their demand with a close substitute if their actual choice is not available.

Table 7. Reason(s) Why Consumers Purchase in Specific Outlet (N=250)

Reason	Frequency (n / %)
Location/proximity	99 (43.6%)
Availability	90 (39.6%)
Price	35 (15.4%)
Freshness	28 (12.3%)
Selection/variety	24 (10.6%)
Quality	22 (9.7%)
Cultural affiliation with store	16 (7.0%)

Table 8. Acculturation Level of Afro-Caribbean Canadians (N=250)

Statement	Mean / Standard deviation (where 5 = Strongly agree and 1 = Strongly disagree)
I enjoy speaking English.	4.42 (0.73)
I learn a lot from people outside my ethnic group.	4.22 (0.77)
I enjoy English language movies and TV programs.	4.20 (0.88)
I welcome most of the values held by people outside of my ethnic group.	4.08 (0.83)
Most of my friends are outside my ethnic group.	3.28 (1.17)
I prefer foods that are not my ethnic foods.	2.43 (0.97)
I have difficulty accepting most of the values held by my ethnic group.	2.22 (0.97)

Table 9. Factors That Underlie Acculturation for Afro-Caribbean Canadians

Factor	Acceptability of other ethnic foods	Acceptability of other ethnic values	Willingness to speak English
I have difficulty accepting most of the values held by my ethnic group.	**0.763**	–0.313	0.176
I prefer foods that are not my ethnic foods.	**0.778**	0.138	–0.078
I welcome most of the values held by the people outside my ethnic group.	–0.126	**0.853**	–0.004
I enjoy speaking English.	0.051	0.017	**0.832**

To further understand the relationship between consumption and acculturation, we did a principal component analysis to identify the key variables that underlie acculturation from the seven items on the scale. The scale was tested for sampling adequacy, and a Kaiser-Meyer-Olkin (KMO) of 0.60 indicated adequacy. The Bartlett's test of sphericity was also significant. The analysis also showed that 63.42% of the variation was explained by three components, which are the key variables that underline food acculturation for AC-Canadians (see table 9).

As shown by table 9, it can be deduced that the questions that matter when analyzing the dietary acculturation of AC-Canadians are acceptability of other ethnic foods, acceptability of other ethnic values, and willingness to speak English. The most important item is "acceptability of other ethnic foods," which might be difficult for this group once their ethnic vegetables are available. This is expected because most of the respondents disagree with the statements "I have difficulty accepting most of the values held by my ethnic group" and "I prefer foods that are not my ethnic foods" (refer to table 8).

Acceptability of other ethnic values in terms of vegetable consumption only prevails when their own ethnic vegetables are unavailable. AC-Canadians are willing to try other vegetables if their cultural vegetables are not available when they agree with two key variables, acceptability of other ethnic values and willingness to speak English, but this only happens when their ethnic vegetables are not available.

Table 10 presents the effect on the mean values of acculturation for the variables of highest education attainment, age, years spent in Canada, household size, and income. Using ANOVA, it was discovered that educational attainment, age, years spent in Canada, and income do not make a significant difference in the mean score of acculturation. However, the mean score of acculturation of different household sizes differ significantly. Thus, households of different sizes also differ in their accul-

Table 10. Analysis of Variance

Variables	Degree of freedom	F-Statistics	Sig.
Highest educational attainment[a]	3	0.134	0.940
Age[b]	6	0.399	0.879
Years spent in Canada[c]	5	0.657	0.657
Household size[d]	3	3.576	0.015
Monthly income[e]	6	0.465	0.833

[a] Highest educational attainment was categorized as Primary education; High school; College diploma; University degree.

[b] Age was categorized as less than 20; 21–30; 31–40; 41–50; 51–60; 61–70; 71–80.

[c] Years spent in Canada was categorized as 1–5; 6–10; 11–15; 16–20; 21–25; ≥26.

[d] Household size was categorized as 1–2; 3–4; 5–6; 7–8.

[e] Income was categorized as CA$1,000–CA$2,999; CA$3,000–CA$3,999, CA$4,000–CA$4,999; CA$5,000–CA$5,999; CA$6,000–CA$6,999; CA$7,000–CA$7,999; ≥CA$8000

turation level. Households with 1 to 2 members had a mean acculturation score of 24.33, those with 3 to 4 members had 25.17, those with 5 to 6 members had 23.74, and those with 7 to 8 members had 20.87. Generally, as the household size increases, the mean score tends to decline. The trend is different for the 3-to-4-member families because most of the respondents in the sample belong to this group. An explanation for this might be that households with smaller size have already assimilated values such as reduction in the number of children, and it is therefore easier for them to accept other values and norms relative to larger households that might be more traditional.

Discussion

According to WCM Consulting, "The rise in demand for ethnic foods tends to lag behind the rise in the corresponding population. Hence, ethnic markets are somewhat under-served in both the U.S. and Canada and this represents a significant opportunity to meet these demands" (2008, p. 7). In addition, mainstream consumers, as the WCM report concludes, tend to acquire the tastes of relatively newer immigrants over time because they are assumed to be trendy and healthy, adding to the demand for ethnic food.

Despite the growing demand for a greater variety of fruits and vegetables than is presently available, there is little local production of ethnocultural foods in Canada. According to Mike Venton, senior vice president of Loblaws, Canadas's largest food retailer, the company's goal is to be "100 per cent local in season, but Loblaws can't always meet that target…it's partly a problem of supply" (cited in Flavelle, 2009). Advocates of local food also emphasize the importance of the multiplier effect, whereby money spent within a community improves the community's overall income and economic activity, creating new jobs and better revenue for local farmers. Other benefits of locally produced food include improved human health due to the nutritional value of fresh produce, a reduced impact on the environment, and an increased sense of connectedness within the community (DeWeerdt, 2009).

Neff et al. (2009) argue that healthy food is "food high in nutrients and low in calories, fat, sodium, and additives/processed ingredients — particularly fruits and vegetables" (p. 283). These alternative vegetables, popular with Ontario's South Asian, Afro-Caribbean, and Chinese populations, have demonstrated health benefits such as reducing blood sugar and insulinomimetic activity, and therefore could control health problems related to type 2 diabetes (Filson, 2009; G. Paliyath, personal communication, September, 2010). If grown locally, these vegetables and their processed products have much better nutritional quality than imported versions (Paliyath, 2011), and have the potential to be accepted by the mainstream population in their diets.

Not much is known now in Ontario about these cultivars and their local growing requirements, sources of seeds, transplantation methods, nutrition, fertilizer requirements, spacing needs, their local pests, and the yield per acre for these crops. Ontario farmers who presently grow vegetables need to learn how to grow nontraditional, ethnocultural vegetables because these crops can enhance their economic viability while meeting the growing demand for these crops. First, farmers' perceived barriers to production must be identified; then, trials on ECV such as okra, African eggplant, and smooth amaranth should be conducted to help convince farmers to produce for this growing niche market. To some extent this work is already being done by FarmStart, the University of Guelph's Muck Crops Research Centre, Simcoe Research Centre, and Vineland Research Station, but much more needs to be done. It is necessary to determine the effects of different management treatments (e.g., fertilizer, spacing, organic production, and methods for integrated pest management versus conventional pest management) and their impact on post-harvest shelf life, quality, and market potential of each variety of vegetable. There is therefore a strong need for incentives to encourage the production of a wider range of fruits and vegetables.

Conclusions

There is a very large and unmet demand for ethnocultural vegetables among the GTA's Afro-Caribbean Canadians, and this is no doubt true throughout the country. The same is true among South Asian–Canadians and Chinese-Canadians. Okra, African eggplant, and smooth amaranth are the three vegetables in highest demand. Health benefits such as obesity prevention are the most important reasons for why these vegetables are in high demand, but there are many other reasons as well, including the desire for freshness and familiarity with the variety. If and where possible, farmers producing for local needs should respond to consumers' demand that those vegetables that *can* be produced profitably here *must* be produced here. The benefits of entering this niche market notwithstanding, challenges abound, and are mostly cultural. The situation has led to a new project of understanding the barriers and opportunities in the ethnocultural vegetable market, which we hope will promote the consumption of these vegetables by all Canadians and the active involvement of farmers as this market evolves.

Beyond freshness and the need to retain the health-promoting nutritional qualities that these vegetables only have when fresh there are many other advantages to producing these foods locally, including reducing our carbon footprint, generating additional income for local farmers, and providing the conditions that will enable Canada to be a truly multicultural society while supporting healthy lifestyles for Canadians.

The analysis of the acculturation scale (ECDAS) indicates that AC-Canadians prefer to eat their ethnocultural vegetables if they are available, but are willing to substitute other vegetables. It was also discovered that the themes that underlie the dietary acculturation of AC-Canadians are acceptability of other ethnic foods, acceptability of other ethnic group values and the willingness to speak English. All these attributes are positive for the AC-Canadians, although they prefer their own ethnocultural vegetables even if it is necessary to pay a premium price. Finally, our study also discovered that the mean scores of different household sizes significantly differ, an indication that household size might be associated with the acculturation level of the main grocery buyer in the household.

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