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Exploring Constituents of Short Food Supply Chains

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Abstract

By deploying a systematic review approach, this chapter provides a holistic exploration of AFNs which contributes to further mobilization of locally produced products. This chapter explores the constituents of AFNs by studying food citizenship, sustainability and food democracy, food safety and quality, embeddedness and social capital, the relationship between the level of participation in AFNs and consumers' demographics, consumers' motivations to engage in buy-local activities, vendors' perspective on selling products in farmers' market, and the development of short food supply chains in the Canadian context. Specifically, the social interaction aspect of buying local, for example, engaging with vendors and other consumers, has been cited as a factor that motivates consumers to buy local food products from the farmers' market; however, consumers had to deploy online ordering channels with door delivery option during COVID-19 pandemic to access locally produced products safely. To capture one aspect of the potential impacts of COVID-19 pandemic on AFNs, future research can explore whether social interaction is still an influential factor in consumers decision to buy local, or the importance of the social interaction aspect of buying local will be replaced by the convenience of receiving the fresh, locally produced food products at consumers' doorstep via online ordering process.

Keywords: sustainable food production, short food supply chains, alternative food networks, local food buyers, environmental sustainability, food citizenship, food democracy, food quality, food safety, consumers' motivations, Covid-19 pandemic

1. Introduction

For decades, global and centralized food supply chains and supermarkets have served as a one-stop shopping outlet and provided the consumers with the convenience of accessing a variety of products all year round. Due to globalization, advanced technologies, and economies of scale in the transportation of mass volumes of products, consumers across the globe can access a variety of products all year round. The global food production and distribution system brought forward some concerns for the society, economy, and environment for acceleration of the disappearance of local agriculture [1]. Supermarkets had taken control of about 80% of the food consumption market in Britain [2]. Conventional food systems were challenged, and consumers questioned the food quality provided by conventional food networks. Also, the sustainability of industrialized farming was also called in

question [3]. With little knowledge of the place of origin and methods of production, some consumers of the globalized network found it uncomfortable to deal with [3].

Recent years have shown increasing interest in the local food system. In both North America and Europe, the number of farmers market has grown rapidly since the 2000s. For instance, in 2008, there were 508 farmers' market registered across Canada, while in 2014, this number increased to 653 [4]. The US has even more farmers' market than Canada. The number of farmers' market in the US in 2004 increased 53% compared with the number in 1994 [5]. In the UK, Miller [6] reported that the number of farmers' market was about 800.

Many European countries started to find alternatives for regional food supply solutions [7]. Local food networks, along with fair trade, forms part of alternative food networks (AFNs) [8]. Johnson and Endres [9] described the local food movement as a push back against the globalization of food system. Contrary to global food supply chains, short food supply chains, also referred to AFNs, have facilitated the mobilization of locally produced fresh products [10] by connecting suppliers, e.g., farmers, with consumers [11].

AFNs emerged as a result of political, cultural, and historical processes [12]. It was the uneven development of participants in a commercial food supply network that gives rise to the nurturing of AFNs. These chains can be categorized into three kinds: direct sales by individuals, e.g., U-picks and farm gate sales; collective direct sales, e.g., farmers market; and partnerships, e.g., Community Supported Agriculture (CSAs) [13]. At the very beginning of the twenty-first century, CSA was not as commonly known as today in the US. CSA was still a growing social movement at its earliest stage when industrialized farming was dominating the market [3]. CSA is a form of partnership which secures the amount demanded by customers, and therefore, the risks and benefits of production are shared by both farmers and consumers [13]. With a contractual agreement between producers and consumers, shareholders and stakeholders at the same time, CSAs are an ideal solution to build a long-term relationship with mutual trust [3].

In the US, Departments including Agriculture, Commerce, Health and Human Services, and Urban development have initiatives to promote the development of farmer's market [14]. Food cooperatives and farmers' markets are vibrant constituents enabling the whole domestic food system to prosper. Direct farmer-to-consumer food distribution channels, regardless of type, provide short food miles, reduce the number of intermediaries in the food supply chain, and connect producers with consumers. The elimination of numerous intermediaries secures the farmers' fairer share and ensures the traceability and higher quality standards of the products. Also, the firm support from consumers reflects the position of short food supply chains. In a conventional chain, the imbalance between bargaining powers of farmers and distributors made many small farmers hard to make a profit [13]. While large chain stores and farmers' markets are the top choices for grocery shopping [15], the level of competition between these two venues is not clear.

Supports from the state and consumer's willingness facilitate the growth of the local food economy, and more local food communities and systems are created with increased link between consumers and producers. Farmers' markets are important channels of direct marketing for locally grown foods in Canada, the US, and Europe. What made the farmers' market stand out of the crowd is the quality of food, either product-based or process-based [16]. From food safety perspective, during an era of increasing globalization, the origin of fertilizers, seeds, and feeds used by small farms is likely to be from all over the globe, and contamination is liable to come from these sources [17]. Opportunities lie in the support of cooperatives

and society since more resources were invested in food safety education and better system and management [17]. Also, food suppliers have more opportunities to communicate directly to customers for any feedbacks.

Farmers' markets are self-organized and locally controlled. Their size can depend on the local demand and supply, and they are formed by local values and culture [18]. In Canada, farmers' market is prevalent and has gained a great success; it has a strong consumer base with the demands of fresh, healthy fruits, vegetables, and baked foods. Farmers' markets in Canada provide a large set of diverse choices to consumers, and consumers are highly motivated to buy local foods. They visit farmers' markets regularly which helps those markets to thrive.

Numerous scholarly papers have focused on specific aspects of short food supply chains. By deploying a systematic review approach, this chapter provides a holistic exploration of alternate food networks which contributes to further mobilization of locally produced products. Specifically, the constituents of short food supply chains, namely, food citizenship (e.g., [19]), sustainability and food democracy (e.g., [20]), embeddedness social, and human capital (e.g., [21]), food quality and safety concerns (e.g., [22]), defining local food (e.g., [15]), investigating the relationship between level of participation in AFNs and consumers' demographics (e.g., [23]), consumers' motivations to engage in buy-local activities (e.g., [24]), vendors' perspective on selling products in farmers' market (e.g., [25]), and the development of short food supply chain in the Canadian context (e.g., [26]) are studied in this chapter.

1.1 Localism

Local food does not have a universally accepted definition. The notion of local food is identified by the geographic dimension, which means the distance between food producer and consumer [27]. However, people hold different opinions on defining the distance of local food. Based on the survey, people's perceptions on local are varied; some of them believe local to be in the same province or state, some believe local is the region within 100 kilometers, and some others cannot describe precisely and just think local is nearby counties [28]. Although there are some controversies that exist on defining local food, the movements of local food are emerging and become one of the most prevalent topics in food sector.

Despite that different European countries have their respective understanding of short food supply chain, the need for reasonable comparability forced EU to come to a publically recognized definition. On the other hand, local food system is much harder to be generalized since the term local food is relatively subjective [13]. Also, there are different ranges for the definitions of local in different Canadian provinces. Defining local food can be tricky for the suppliers at farmers' markets, which makes the consumers question the products' authenticity [15].

1.2 Food citizenship

Current theoretical frameworks such as solidarity buying groups, consumer co-ops, or collective urban gardening initiatives are still not a perfect solution for problems incurred by conventional global food networks [19]. Although AFNs lack a set of clear standards, and a boundary between them and conventional food networks is ill-defined, the emergence and development of AFNs are a good interpretation of a new type of producer-consumer cooperation focusing on the perspective of sustainable consumption apart from sustainable rural development.

Consumer co-operatives and buying groups in some European countries, for instance, are more than channels for direct-selling and producer-initiated activities

[19]. The transition from passive end-consumers to proactive citizen-consumers clearly represents a new type of relationship between the producers and consumers of food. For these producers, this means the transition from supplying the market with food in bulk to directly supply the community with more sustainable and organic food.

Unlike the uncommon existence in the European literature, the concept of food citizenship occurs quite often in North America. It was introduced into Canada to criticize the fading food skills of citizens and corporate control. Also, compared with conventional food networks, the existence of power relationship is less evident in these civic food networks since the disappearance of the intermediaries between producers and consumers [29].

Renting et al. [19] argues that society-based and civil forms of governance is an important concept to understand to better promote food citizenship, especially in times of several political and economic crises [19]. Wittman et al. [15] also suggest that the rebuilding of linkages between civil society and markets, and the creation of new connections can be interpreted as the governance mechanisms.

1.3 Sustainability and food democracy

The significance of AFNs is not limited to providing communities with access to locally sourced fresh and organic food, but also allowing consumers to contribute to the pillars of sustainability, e.g., economic and environmental, by supporting sustainable food production and distribution systems [30]. The environmental dimension of sustainability is particularly urged by many stakeholders, and the changes these businesses about to make are challenging [31]. The dominant philosophy of such changes can be hard for the senior management of a firm to accept. The public and the companies perceive the domain of sustainability differently. Also, the customers are aware of sustainability, but they think the companies are responsible for the necessary expenditure [31].

Consumers are becoming more conscious about environmentally friendly production and distribution systems [32], and are interested in finding out about the origin of their food [16, 33]. The transparent and domestic origin of the food products distinguishes them from their counterparts sold in conventional supermarkets [16]. Researchers believed that this kind of desire derives from the decline of consumer's trust on the standardized foods, and they have more concerns about the production methods and ethical issues of those imported foods [34, 35]. This kind of mistrust can be eliminated by locally produced food, because locally produced food builds a closer connection between buyers and producers. Consumers can easily access the whole process of local food from the farm to their table, and that reduces their ethical and environmental concerns of the food production. In terms of environmental benefits, local food economy shortens the distance of food and reduces the carbon emissions incurred in the transportation process. Meanwhile, it also encourages farmers to adopt organic farming, which is more environmentally friendly and promotes the consumer's preference of organic food [1]. However, Brown [22] argued that the relationship between farmers' market and the growth of organic food market was not documented, but she also agreed that farmers' market is the major source of organic and exotic foods. In another study, M. D'amico et al. [36] pointed out that participants, who were selected from three Italian regions to better represent the target consumers, favor the food items circulated through short food supply chain because of the quality and lower environmental impact. This study tried to figure out the main features and aspects of the direct selling of wine through analyzing the main factors that directly influence consumers' choice and purchasing behavior.

Hamprecht et al. [20] demonstrated how enterprises could control the sustainability through managing the economic, social, and environmental performance of the supply chain [20]. In the process of tracking supplies of the production, a controlling framework was used to assess the economic, social, and environmental performance aspects of milk and cereal factories [20]. Another initiative was a wave of organic farming activities which took place in Czech Republic, and it was aimed at reducing environmental impacts and improving alternative food quality [16]. Contrary to the agro-industrial model, short food supply chain is an ideal alternative in reconnecting production and consumption with quality and values, which also promotes sustainable agriculture [8].

As direct channels of distributing food, AFNs drew these participants closer, and they enabled the redistribution of power across the food chain [29]. Critics doubt these networks' ability to bring structural changes on a greater scale [29]. Either Food democracy or civic agriculture represents a certain academic perspective in understanding all these food networks [29]. With the direct involvement in distributing and selling the food produced, the AFNs in France and Brazil have greater control over the economic actions downstream. Initiatives in both countries matter to the food democracy, as their members share the decision-making power [29].

1.4 Embeddedness, social and human capital

Other than farmers' market which has brought more hope in pursuing an alternative solution for a stable supply of quality food, an urban garden project called community gardens (contributing to building communities) was created with a goal of promoting the social and cultural nature of AFNs [16]. While the literature available on AFNs is primarily stressing on quality, locality, and ecology, Sage [37] analyzed the case of good food network in South West Ireland, using an approach of more qualitative insight into understanding the relationship between the participating members of a short food supply chain. They suggest that this food network is an economy of regard reflected through personal relations and social connection. Deeply embedded in local communities, social capital and embeddedness are commonly used in the literature discussing the benefits of the collaboration between members of an AFN being the knowledge exchange and social relations and learning [21]. Collaborative CSAs, also known as cCSAs, as another example, are different from single farmer CSAs, and other than financial incentives, several capitals, notably social capital, are the core values of cCSAs apart from democracy in food provisioning [38]. Human capital is another benefit of CSAs through the accumulation of hands-on knowledge and experiences [38].

Wittman et al. [15] discuss farmers' market as an example of social economy in North America. As part of the social economy, the farmers' markets in western Canada are not after a greater amount of profit, but to fulfill the social objectives and reinvest the profit generated into further investments in the markets' infrastructure [15]. The economic influence of the farmers' markets is not despised by their social mission. These markets had enjoyed a significant growth in operating revenue, created by direct sales, and resulted in multiplier effects three times greater [15].

1.5 Food quality and safety concerns

AFNs are a representative of economy of quality, with food quality and safety as a prerequisite [8]. With support from the national level, short food supply chains have been rediscovered for their diverse forms of businesses. In an industry-wide crisis in agri-food networks, Taylor [39] used the value chain analysis technique in

the study of two pork supply chains in the UK. The pressing need to become more integrated urges the red meat chains to make unprecedented changes to their traditional business model [39] and build trust between different echelons in their supply chains and establish cooperation between the supply chain members to attract consumers to choose the domestically produced pork products than imported.

Local food production is more accessible to consumers, and this increases the health and security of the food [22]. The popularity of short food supply chain in Belgium is another sign of its influence in Europe. Similarly, short food supply chains are also potentially prone to contamination in the environment where the food was produced or harvested. Microbiological safety and quality aspects of the chains are specifically concerned with the microbiological safety aspects of food and food production [17]. Even short food supply chains with a lower level of complexity have links which can potentially pose some threats to the food safety. While practices and policies such as Good Agricultural Practices (GAP), European Hygiene Legislation, Hazardous Analysis and Critical Control Points (HACCP), and Good Manufacturing Practices are enforced, but still, sources of contamination are likely to undermine the safety of at least of the links of the supply chains [17].

Currently, the farmers in SFSCs have individual experiences with selecting the quality of raw materials, and they also keep an eye on the production that takes place. Therefore, the microbiological risks can be contained in most cases. Shorter chain and smaller scale help farms reduce the cycle of turnover, and consumers can purchase the food items in a short time after production. Smaller farms have fewer kinds of food being produced, therefore lower the possibility of cross-contamination. Additionally, smaller farms have a tradition of maintaining food safety and quality [17]. On the other hand, some farms have both fresh plant and animal productions, which are more likely to lead to cross-contamination through irrigation water or crops [17]. Also, the lack of professional food safety knowledge is potentially undermining the farmers' ability to avoid microbiological risks.

From the consumer's perspective, local food reduces the risk of food safety and security to them, because local foods are usually less processed and fresher and there is a high level of transparency. Consumers can either reach their sites of production or talk to growers to obtain information about local grown foods [40].

2. Demographics, motivations, and impacts of consumers participating in AFNs

People started to realize that local food system can substantially benefit a variety of local actors. For instance, it promotes the development of the local economy, reduces the distance of transportation, and facilitates the sustainable development [41]. Abate [1] believes that the local food economy can connect and involve the different local actors in the local community, revitalize businesses that may be hardly surviving and provide them with business opportunities, and also promote the sense of identity which is similar to the viewpoint of Oberholtzer and Grow [42]. It can also create job opportunities, increase the local income, and diversify the local economy. Feenstra et al. [43] argued that the farmers' market provided the best opportunity for farmers to develop their businesses, improved their skills on dealing with customer relations and other marketing practices, and also encouraged them to add values to their products or services which also benefit their customers. Hughes and Boys [44] also discussed about the economic impacts of local food. They believe that the local food system will bring multiple benefits to different actors in the system, such as vendors, local labors, and farmers' markets. Furthermore, the localization can also contribute to the higher quality of life,

because he believed that the regional growth has been a new economic development pattern in the modern world. Meanwhile, the localization of food as a marketing strategy can promote the local businesses and entrepreneurship.

The motivators of consumers to attend the farmers' market is also of interest for researchers to study. From theoretical perspective, Conner et al. [45] believed that local food basically creates three values for consumers. First is the shortened distance of travel from the production place to the market. Second is the higher quality of food which mainly indicates the freshness. Third is the social interactions that refer to face to face communication. Also, the perceptions of quality are different in the various regions, ranging from environmental sustainability and animal welfare to rural tradition, local knowledge, and culture [13]. A number of studies have shown the consumers' interest in foods with local attributes. Generally, researches constantly showed the strong willingness of consumers to buy in farmers' markets, and those shoppers have similar demographic characteristics, but their motivating factors can be slightly different between different regions. Based on the research in different regions of the US, Baker et al. [5] suggested that the most important reasons of consumers using farmers' markets are accessing fresh local foods and supporting local agriculture. But consumers in Manitoba, Canada, have demonstrated different motivations, based on the research by Food Matters Manitoba [46]; the major driver of attending farmers' markets of consumers in Manitoba was to support the local economy, and the second most important is to help local farmers. The interest in the food quality was only placed at third. However, based on the research for consumers across the whole country, they perceive the top motivator for buying local food products was freshness of food, and supporting local agriculture business was reported as the second most important factor [46]. Therefore, Manitoban consumers have more concern on the community development than other places in Canada. Byker et al. [24] argues that based on the studies in different areas, some motivating factors to participate in AFNs are consistent, including freshness and high quality of food, food safety and security, pesticide-free, support local agriculture, and social interactions. Some other factors can vary from different regions or different consumers; for instance, convenience is an important factor for some consumers but not for all. The price of a product was also concerned by a part of consumers. Conner et al. [45] found similar phenomenon; some consumers perceived local foods as high quality and willing to pay more for the benefit. However, some consumers think local foods should have lower price. Specific lifestyle also motivates some consumers to shop at farmers' markets, such as cooking, baking, or interest in some specific types of food.

Besides those factors, Hunt [47] linked the demographic factors with the motivating factors to shop in farmers' market. He believed that the social interaction is a significant motivator for consumers based on their demographic characteristics. His research was based on more than 200 consumers in the farmers' market. About 98% of the respondents agreed that they had fun while interacting with other people in farmers' market, 94% of them talk with vendors, and 81% of people meet people they know in the market. Therefore, farmers' market can be a platform for those seniors to interact with people and increase their satisfaction of shopping experience. He also claimed that 45% of them know the farmers' market by word of mouth. This can also be an effective marketing strategy of those farmers' markets. In another study, Wittman et al. [15] suggests that personal interactions between vendors and consumers is partially why farmers' markets are one of the most important market channels for local food. Some respondents prefer more choices of marketing channels, but the authentic relationships built through direct marketing can hardly be paralleled by other channels [15]. Such direct communication allows vendors to better share the stories behind the fresh produces, enabling the patrons

to be more knowledgeable about the total cost of the produces, and therefore the reason for these patrons to pay a premium price becomes more justified [15].

A number of researchers had put their efforts on characterizing farmers' market consumers. From the demographic perspective, National farmers' market impact study report from 2009 [48] suggested that 72% of consumers are female while 28% are male in Canada, and 70% of them are 40 years and older, and about 30% of them are between 50 and 64. Byker et al. [24] found that the percentage of female consumers in different states of the US was ranging from 64 to 77%, and their average age was over 40 years old. Researchers also found most of consumers are well-educated regardless of their age and gender. The study by Conner et al. [45] on consumers showed that the average education level was college. Hunt [47] also had similar outcomes on his research. Brown [22] described most consumers as middle aged, middle income or above, well educated women. In another study, it is reported that younger people from age 21 to 29 are not interested in supporting local farmers, and people with lower incomes even have no perceptions of farmers' markets [49].

Johnson and Endres [9] reported consumer's desire for fresh, high quality, and pesticide-free foods as the top reasons for purchasing locally produced food products. Second is to minimize the environmental footprint in the production process and reduce transportation emissions. Third is to reduce the cost of farmers in transportation, processing, and packaging foods and help them to achieve a higher profitability.

From managerial point of view, based on the survey conducted by Oberholtzer and Grow [42], most managers of farmers' market believed that the impacts brought by farmers' market to the community can be in many aspects. They described that a farmers' market provides a platform for all kinds of social and economic practices. This benefits to the form of community and increases the individuals' sense of belonging to the community. Meanwhile, its basic function also enables it to provide consumers with fresh and inexpensive food.

3. Vendors' perspective on selling products in farmers' market

Although researches have reported growing consumer interest in local food, most statistics has shown that the sales volume of farmers' market continuously represent only a small portion of total food sales. Onozaka et al. [50] found that 83% of consumers believed their primary source of buying foods is supermarket. The conventional retailers are still primary channel for consumers to buy foods [18]. This fact shows inconsistency with the benefits associated with farmers' markets in the community and high demand and willingness of consumers on shopping in farmers' market. In addition, based on the Canadian survey on vendors in 2008, 42% of vendors reported more than a half of their incomes are generated in the farmers' market. In other words, income from the farmers' markets is not major a source of income for most farm owners in Canada.

Some researchers described that the primary motivator of local food movement is to reduce the carbon emission and promote community development and improve reciprocity [40, 51]. As an essential constituent of the economy, the agricultural sector in Greece, for example, was primarily located in isolated rural areas with scarce resources contributing significantly to the sustainable rural development, but still face economic difficulties [52]. Researchers also found that the vendors' interests on selling their products in local market are not aligned with the consumers' demands to buy local. Schneider and Francis [41] conducted a survey that examined the consumers' interests on local food and vendors' interest

on selling local. Their result showed that more than a half (50.7%) of consumers are very interested in farmers' market and 12.9% of the total consumers are extremely interested. However, in terms of farmers' interest, 65.2% of them are not interested in selling products through farmers' market, and only 2.7% of them are extremely interested. The results indicated that the farm owners prefer to sell their crops in other regions rather than in local market.

Previous studies indicated that there are both benefits and challenges for farmers to sell their products in farmers' markets. In terms of benefits, from vendor's perspective, first, to sell in local market can shorten the distance they travel, which means it reduces the transportation cost [47]. Second, selling in local market enables them to have more interactions with consumers, and improve their operations by understanding consumers' demands. Based on the Canadian vendor survey, 25% of vendors agreed the farmers' markets provide them with a friendly and attractive environment to market their products [48]. Moreover, they believe that farmers' markets provide them with more business opportunities which help them to thrive. Hunt [47] suggested that farmers who sell in the farmers' markets prioritized the social interactions over the profits. Based on his study of vendors in farmers' markets, the most important motivator for them to sell in farmers' market is to build relationship between consumers, then is to generate profit. Actually, he found that 94% of shoppers in farmers' markets would talk to vendors, two-thirds of them would make friendly gossip, more than a half (55%) of them discuss the production methods with vendors, and 44% of them had dialogues about sampling products. Social interactions also incorporate communications between vendors. Beckie et al. [18] claimed farmers' market plays a role of clustering vendors in western provinces of Canada. They suggested that in western Canada, vendors collaborate with each other to achieve their common goals including improved profitability, diversified customer bases, or increased creativity in marketing practices. This kind of clustering enables them to exchange their knowledges, which provides the knowledge mobilization. Knowledge mobilization is particularly important in food sector because it comes with health and safety concerns as well as environmental concerns. It also broadens the labor base and involves more actors in the supply chain. Those interactions have a lot of implications to vendors. First, it can help vendors build solid connections with consumers and improve their loyalty. Second, interactions with consumers and farmers in local market can promote social learning, lead to the innovation on farming practices, and help vendors improve the quality of products [53].

Nevertheless, some papers also identified some challenges and barriers for farmers to sell in the local market. Robinson and Farmer [25] claimed that for vendors, the biggest challenge is consumers' perception. As mentioned previously, some consumers are not willing to pay premium for the benefits of local food. But in fact, their cost can be higher than those nonlocal producers as farmers' markets charge them membership fee. They are also struggling on marketing their foods which are also costly, and if they cannot maintain their sales volume at a certain level, they may not be able to cover their costs. Attending farmers' markets will cost vendors in different forms [4]. They argued that major costs include time, gas, equipment and supplies, and different kinds of fees like insurance, permit fees, etc. This is one of the reasons that the consumers in farmers' markets are always more educated and with higher income. Because they are more likely to pay premium for the local foods. Therefore, based on the Robinson and Farmer's [25] description, the first challenge for vendors is to convince more potential consumers to pay for their products with price premium. The second barrier is the gap between consumer demand and supply in terms of season. Research suggests that most of the consumers in farmers' markets are loyal consumers and they visit farmers' market frequently,

spend a lot in there, and have solid personal relationships with vendors [45]. Canadian researches on consumers also indicated that consumers are not satisfied with the limited season and hours for the farmers' markets because their demands cannot be fulfilled. But due to the limitation of technique and knowledge for most small-scale farm owners, they are not capable for the season extension practices. This limitation increases the potential of losing loyal customers. The third is the limited ability to promote the awareness to a larger base of population. Farmers' Markets Canada [48] also found that the top two reasons for people to not shop at farmers' markets are the inconvenience of location and the lack of awareness, and according to Colasanti et al. [49], the major reasons for less awareness of farmers' markets are largely due to the ineffective promotion strategy and the inconvenience of location. According to Wittman et al. [15], many customers would choose to support locally sourced food when there is a greater variety of products and easier accessibility for shopping.

The primary challenges facing farmers' markets in Canada are exerted by the conventional food networks, competitive prices and scaling-up of production, and an unpredictable environment [15]. As a labor-intensive industry with its ethical standards, vendors at farmers' markets must pay a living wage to their employees, and at the same time, the investment in environmentally sustainable practices further raises the cost of production [15]. Specific constraints are exerting pressure to the further development of SFSC, primarily in the shortage of necessary knowledge and skills, lack of entrepreneurial culture in farmers, or administrative burden which may baffle small farmers [13].

4. Development of short food supply chain in the Canadian context

Conner et al. [45] conducted a research based on 70 farmers' markets, 3174 shoppers, and 487 vendors across the country. They found that in Canada, Farmers' markets are making significant contributions to the economy and communities ranging from \$1.55 million to \$3.09 million annually. They are the key players in promoting Canadian agricultural products, facilitating vendors' capabilities and developing labor improvement and accessibility. However, they found that there are still growth opportunities for them since a majority of consumers are using grocery stores rather than farmer's market.

4.1 Alberta and British Colombia provinces

Wittman et al. [15] surveyed some farmers' markets in Alberta and British Colombia. These markets are identified as strategic venues linking producers and consumers of local food. Different from conventional food networks in the organization of production, distribution, and consumption, the farmers' markets in North America are also examples of the social economy. With the support from private sector and the government, many Canadian farmers' markets are a combination of the local food system and social economy [15]. The constraints on the term "local" are not strictly defined, as situations in these two provinces are varied when compared with their counterparts in Europe. The qualified vendors in a Canadian farmers' market must meet the requirements of producing food in a local region. Some say their scale limits the further development of farmers' markets. However, scholars disagree with this common misconception. Scaling up farmers' markets could benefit them from economies of scale, but such action could potentially bring negative power disparities and environmental impacts resulting from conventionalization [15]. Like the situation in the United States, the amount of organic food

distributed through direct sales outlets was under 10% in 2006 [15]. One major obstacle facing the development of farmers' markets in Canada was the disparity between policy and practice [15]. The restriction on the local and authenticity is a perfect example of this disparity.

Wittman et al. [15] analyzed the potential barriers and challenges undermining the potential growth of farmers' markets in Alberta and British Columbia provinces. The participants were interviewed with two overarching questions, "How can farmers' markets in western Canada scale up their role in supporting the advancement of local food systems within a social economy framework?" and "What are the barriers impeding farmers' markets from acting as transformational agents for a more sustainable food system?". The feedback from the participants reflected a diverse way of understanding the local food systems. For instance, the way how participants perceive the role of farmers' markets was largely determined by the dynamics of supply and demand relationship and the definition of boundaries of authenticity in the farmers' markets [15].

4.2 Province of Nova Scotia

4.2.1 Case study 1: Select Nova Scotia

Select Nova Scotia is a local food program initiated by the government to promote the food grown in this province [26]. To discover the actual effectiveness of this program, Knight conducted an online survey to assess the awareness of Select Nova Scotia and particularly the respondents' perception of the local benefits and barriers as well as purchase motivation and behavior [26]. As one out of at least four Canadian provinces supporting local food initiatives, Select Nova Scotia has been financially supported by the provincial government since 2007. Through sponsoring various campaigns and events, it not only aims to promote and educate consumers about local food, but also exploits development opportunities of the regional food program [26]. Knight evaluated the effectiveness of this program, particularly the awareness levels and impacts it has on consumer preferences and consumption [26]. Based on several economic assessments, this case study works as a benchmark for the future studies of Select Nova Scotia. Primary or shared grocery shoppers residing in Nova Scotia were chosen, and randomization was applied to eliminate possible biases [26]. The respondents were divided into six focus groups based on three types of profiles: food skills and interest, social, and social-demographics.

A third of the respondents were already aware of the Select Nova Scotia and knew about this initiative through primarily retail venues such as farmers' markets followed by advertisements on mass media. Through factor analyses, benefits were categorized into four groups: societal, attribute, social, and price [26]. Respondents with a different demographic background and food skills and interests would position every single one of the four types of benefits rather poles apart. Also, gender is another influencing factor. Availability, price, location, and appearance are the four aspects of barriers which would affect consumers' decisions to buy locally sourced food. Similarly, respondents with different characteristics would perceive the significance of each of these barriers differently. Based on the frequency of buying, different respondents can be divided into three buy-local groups, high, medium and low. Respondents initially aware of the program are more likely to be in the high group, while other social-demographic aspects also affect the categorization of these respondents. Using multinomial logistic regression method, it was found out that the respondents' awareness of this initiative contributed positively to their motivation to buy locally [26]. The respondents' awareness of this initiative was as

good as stated goals, regardless of its short history. Some critics doubted that the respondents that primarily covered the buy-local groups were already aware of the initiative. However, the cross tabulations suggest that only less than half respondents in the high group were already aware of it, while the other two groups had a lower percentage. It is recommended in this study that initiatives such as Select Nova Scotia should put greater emphasis on targeting medium and low buying groups through better managing the benefits and barriers.

4.2.2 Case study 2: Nova Scotia Farmers' Market Economic Impact Study 2013

With a rich history of farming, fishing, and artisan production, Nova Scotians have a habit of visiting and shopping at farmers' markets [54]. The farmers' markets in Nova Scotia had enjoyed significant growth since 2004.

An economic impact study on Nova Scotia Farmers' Markets was carried out in 2013 to figure out the reasons behind the three-fold growth in less than a decade. Twenty-one out of 43 Nova Scotian Farmers' Markets participated in this study. A number of patrons visited, and the average amount of money they spent was collected on the day. The dominant motivations behind these patrons' shopping behavior were supporting local businesses and demand for locally sourced, sustainable food [54].

Farmers' markets in Nova Scotia take various forms as they are in both rural and urban areas, opening in specific seasons or all year round [54]. Participating markets are grouped with their respective sizes; small ones have less than 20 vendors, and large ones can have over 40 vendors altogether [54]. The average attendance at large markets are correspondingly higher than those of medium- and small-sized ones. Among all the large markets, attendance at the Farmers' Market in Sydney, Cape Breton, ranked the third lowest [54]. The number of shopping groups counted is not limited to a group of patrons or households, but individuals as well. On average, a market can generate \$22,654 worth of revenue for the region [54]. By market, Halifax Seaport enjoys highest average spending, equivalent to \$50 per shopping group, and Cape Breton Farmers' Market in Sydney ranks the 11th in all the participating markets.

Vendor mix also has a huge impact on the average spending per shopping group [54]. It stands for the selection of vendors and products, which therefore lead to a higher spending of the patrons. If the farmers' markets could provide more complementary products, they could potentially generate more sales since many of the patrons have limited time for grocery shopping. Compared with the total shopping group, or household, spending on food, the farmers' market could have better growth.

The economic impacts farmers' markets can generate are both direct, direct sales made in the markets, and indirect, money spent at surrounding businesses. The total economic impact is estimated to be \$1,881,573, calculated by multiplying the average dollar amount by average market attendance [54]. Small markets enjoyed greater indirect economic impact as they are more common in smaller regions, in which patrons often shop at one time, therefore help to boost the sales of nearby stores.

Forty-five percent of respondents suggest that supporting local food movement was their primary reason for shopping, followed by 30% found that shopping was a fun and social experience [54]. Also, the quality products farmers' markets provide, and the unique selection of products than elsewhere is also important factors for patrons to shop at the markets [54]. More importantly, the patrons at the market were not very price sensitive. They expect a higher value rather than lower price. Crawford [54] suggested that these farmers' markets should get their stakeholders

increasingly involved through meetings, presentations, to explore opportunities for their future development.

5. Discussion

Recent years have shown increasing interest in short food supply chains or alternative food networks (AFNs) [4, 5, 7, 8, 24]. As direct channels of food distribution, AFNs drew the participants closer and enabled the redistribution of power across the food chain [29].

AFNs can be categorized into three kinds: direct sales by individuals, e.g., U-picks and farm gate sales; collective direct sales, e.g., farmers market; and partnerships, e.g., Community Supported Agriculture (CSAs). Contrary to global food supply chains, AFNs have facilitated the mobilization of locally produced fresh products [10] by connecting suppliers, e.g., farmers, with consumers [11]. The transition from passive end-consumers to proactive citizen-consumers clearly represents a new type of relationship between the producers and consumers of food [19]. Furthermore, consumers are becoming more conscious about environmentally friendly production and distribution systems [32], and interested in finding out about the origin of their food [16, 33]. In terms of environmental benefits, local food economy shortens the travel distance of food [45] and reduces the carbon emissions incurred in the transportation process. Furthermore, Abate [1] believes that the local food economy can connect and involve different local actors in the local community, revitalize businesses that may be hardly surviving and provide them with business opportunities, and also promote the sense of identity which is similar to the viewpoint of Oberholtzer and Grow [42]. It can also create job opportunities, increase the local income, and diversify the local economy.

Based on the research in different regions of the US on consumers' motivations to buy local, Baker et al. [5] suggested that the most important reasons of consumers using farmers' markets are access to fresh local foods and support local agriculture. But consumers in Manitoba, Canada, demonstrated different motivations based on the findings from the Food Matters Manitoba research study [46]; the major driver for attending farmers' market in Manitoba was to support the local economy, and the second most important factor was to help local farmers. The interest in the food quality was only placed at third. However, based on the research conducted on different consumers from across the country, i.e., Canada, it was discovered that consumers perceive freshness of food as the top motivator for buying local food products, followed by supporting local agriculture businesses as the second most important factor [48]. Besides these, Hunt [47] linked the demographic factors with the motivating factors to shop in farmers' market. He believes that social interaction is a significant motivator for consumers based on their demographic characteristics. His research was based on more than 200 consumers in the farmers' market. About 98% of the respondents agreed that they had fun while interacting with other people in farmers' market; 94% of them talk with vendors and 81% of people meet people they know in the market. Johnson and Endres [9] reported consumer's desire for fresh, high quality, and pesticide-free foods as the top reasons for purchasing locally produced food products. Second is to minimize the environmental footprint in the production process and reduce transportation emissions. Third is to help farmers achieve higher profitability by supporting their food production and distribution system which requires less investment in processing and packaging of food products. From a food safety perspective, the local food system reduces the risk of food safety and security because locally produced food items are usually fresher and less processed, and there is a high level of

transparency. Consumers can either reach their sites of production or talk to growers to obtain information about local grown foods [40]. From managerial point of view, based on the survey conducted by Oberholtzer and Grow [42], most managers of farmers' market believe that the impacts brought by farmers' market to the community can be in many aspects. They described that a farmers' market provides a platform for all kinds of social and economic practices. This contributes to the formation of linked community and increases the individuals' sense of belonging in the community. Meanwhile, its basic function also enables it to provide consumers with fresh and inexpensive food.

There are both benefits and challenges for farmers to sell their products in farmers' markets. In terms of benefits, from vendors' perspective, first, selling food products in local markets shortens the distance they travel, which implies reduced transportation costs [47]. Second, selling in local markets enables them to have more interactions with consumers and improves their operations by understanding consumers' demands. Based on the Robinson and Farmer's [25] description, the first challenge for vendors is to convince more potential consumers to pay a premium price for their products. The second barrier is the gap between consumer demand and supply in terms of season. Farmers' Markets Canada [48] also found that the top two reasons for people to not shop at farmers' markets are the inconvenience of location and the lack of awareness. According to Colasanti et al. [49], the major reasons for less awareness of farmers' markets are largely due to the ineffective promotion strategy and the inconvenience of location. According to Wittman et al. [15], many customers would choose to support locally sourced food when there is a greater variety of products and easier accessibility for shopping.

6. Findings

In the past decade, there has been a growing interest in sustainable food production and distribution systems which promote food citizenship, food democracy, social capital and embeddedness, and sustainability. By deploying a systematic review approach, this chapter provides a holistic exploration of Alternate Food Networks (AFNs) which contributes to further mobilization of locally produced products as well as informing the channels of distribution in short food supply chains.

Our research demonstrates that there is a common set of motivating factors for consumers to engage in AFNs; however, there is disparity in the significance level of these factors to consumers in different regions. The implication of this finding mainly concerns the selection of a channel by consumers to participate in buy-local activities. For instance, if the social interaction aspect of buying local is not of high importance to some consumers in a specific region, they may consider shopping from an online farmers' market with a delivery or pick-up option instead of farmers' market. This phenomenon can lead to transformation or addition of business practices in currently existing platforms which connect suppliers, e.g., farmers, with consumers. In this regard, farmers' market in some regions may consider adding different channels of distribution including online ordering with delivery option to their platform.

Besides investigating the economic and societal benefits of AFNs and consumers' motivations to participate in buy-local activities, we also explore the farmers' perspectives on engaging in sell-local activities. Farmers suggest that reduced transportation costs, more interactions with consumers, and improving their marketing strategies as well as operations by understanding consumers' demands are among the benefits of selling at farmers' market [18, 47]. Furthermore, farmers' markets provide farmers with a friendly and attractive environment to market their

products [48] and facilitate their collaboration with other vendors to achieve their common goals including improved profitability [18]. Besides, this clustering enables them to exchange their knowledge which provides the knowledge mobilization. The implications of those interactions are helping vendors build solid connections with consumers, promote social learning, lead the innovation on farming practices, and improve the quality of products [18]. In terms of challenges of selling local, Robinson and Farmer's [25] suggest that vendors need to convince more potential consumers to pay a premium price for their products. The second barrier is the gap between consumer demand and supply in terms of season. Farmers' Markets Canada [48] also found that the top two reasons for people to not shop at farmers' markets are the inconvenience of location and the lack of awareness. Overcoming these challenges can enhance consumers' access to fresh and locally produced products.

7. Recommendation for future research

Farmers' markets are established venues for mobilization of locally produced food products with societal benefits such as supporting community economic development and sustainable food production and distribution systems in addition to promoting food democracy, food citizenship, social and human capital, and facilitating knowledge mobilization between farmers and vendors.

The social interaction aspect of participating in alternative food networks (AFNs) has been cited in the literature as one of the motivating factors for farmers to engage in sell-local activities in the farmers' markets. Similarly, some studies suggest that the social interaction aspect of buying local is a motivating factor for consumers to participate in buy-local activities in farmers' market. COVID-19 pandemic and the need for social-distancing affected brick and mortar businesses in general, and in our context farmers' market. There was a shift in selection of a channel to access locally produced food products for safety reasons, and placing online orders with delivery option at the door was offered to consumers. Future research can explore consumers' preferences on channel selection to participate in buy-local activities post COVID-19 pandemic. To capture one aspect of the potential impacts of COVID-19 pandemic on AFNs, we propose an investigation on whether the social interaction is still an influential factor in consumers decision to buy local, meaning whether consumers will resume their shopping at the farmers' market post-pandemic. This can have business implications in alternative food networks (AFNs) as it is possible that the importance of the social interaction aspect of buying local will be replaced by the convenience of receiving fresh locally produced food products at consumers' doorstep via online ordering process.

Note

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